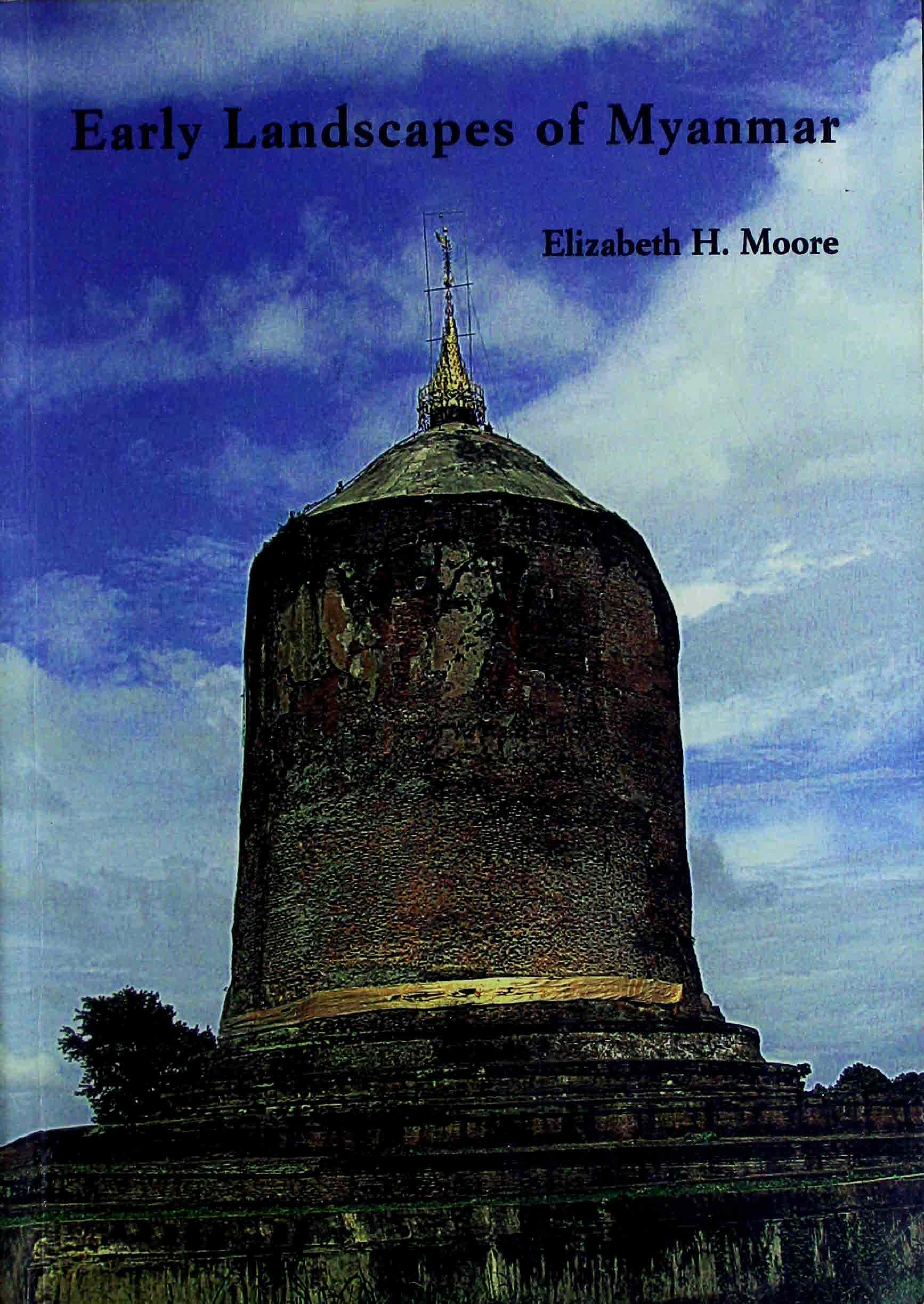
Early Landscapes of Myanmar

Elizabeth H. Moore



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Her previous books on the region include *Palaces of the Gods – Khmer Art & Architecture in Thailand* (1992), *Ancient Capitals of Thailand* (1996) and *Shwedagon – Golden Pagoda of Myanmar* (1999). Since 1989 she has centred her research in Myanmar, where her grandfather taught at Judson College and where her father was born.

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RIVER BOOKS

First published and distributed in Thailand in 2007 by
River Books Co., Ltd
396 Maharaj Road, Tatien,
Bangkok 10200
Tel: (66) 2 225-4963, 2 225-0139, 2 622-1900
Fax: (66) 2 225-3861
Email: riverps@ksc.th.com
www.riverbooksbk.com

Editor: Narisa Chakrabongse
Design: NaHa
Production: Paisarn Piemmettawat

ISBN 974 9863 31 3

Printed and bound in Thailand by Bangkok Printing Co., Ltd.

Front cover: Bawbawgyi stupa, Sriksetra.

Front flap: From left to right – a local resident, Pandita Nanda (Tagaung), the author and Daw Yee Yee Aung, Head, Department of Archaeology, Yangon University at Tiloka *In-gyi*, Tagaung.

Back cover: Burial cluster TG31 at Tagaung.

Frontispiece: Flat terrain along north-west foot of Kelasa Mountain, Mon State, Lower Myanmar.

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This book describes the archaeology of Myanmar before *circa* 900 AD, focusing on the first millennium AD when artefacts profile a shift from animist to Buddhist veneration. The outlook reflects numerous periods of fieldwork in the country, evident also in the discussion of scholarship included in the opening chapter.

I would like to thank Narisa Chakrabongse and her team in Bangkok and London. At the University of London, I am grateful to many at the School of Oriental and African Studies (SOAS), particularly past and present colleagues in the Departments of Art & Archaeology, South East Asia, History and the Library. My students have stimulated many fruitful discussions with their often unexpected questions for which I thank them. I am grateful to Donald Stadtner, who provided feedback on the draft layout as well those who have responded to my email queries.

The text is not an encyclopaedia; material has been chosen selectively and presented simply, with references listed as end notes. The maps are deliberately varied, often older ones, to reflects the many landscape described here. The reader interested in more extensive discussion is referred to the Bibliography. Titles here have been translated into English with transcription of Myanmar words in the text following common practice in the country. The majority of photographs were taken by the author, but for others, I thank U Win Maung (Tampawaddy), U Chit San Win, T&Q Collection, Bob Hudson and Jean-Pierre Pautreau. Special thanks go to Gillian Thida Moh and many not listed here. However, any errors and shortcomings remain my own.

This book is dedicated to my Baptist missionary grandfather, Randolph Howard, my late Mother, Margaret Whittem Howard, and teacher and scholar, U Aung Myint.

Elizabeth H. Moore
London, January 2007

Sunset Ayeyarwaddy Division.
(Photo Myo Nyunt)


BIRMAH,
WITH PART OF
ANAM AND SIAM.
BY SIDNEY HALL.
English Miles 69 to a Degree
BAY OF BENGAL
S I A M OR YOODARA
L A O S
MOUTHS OF THE ERAWADI

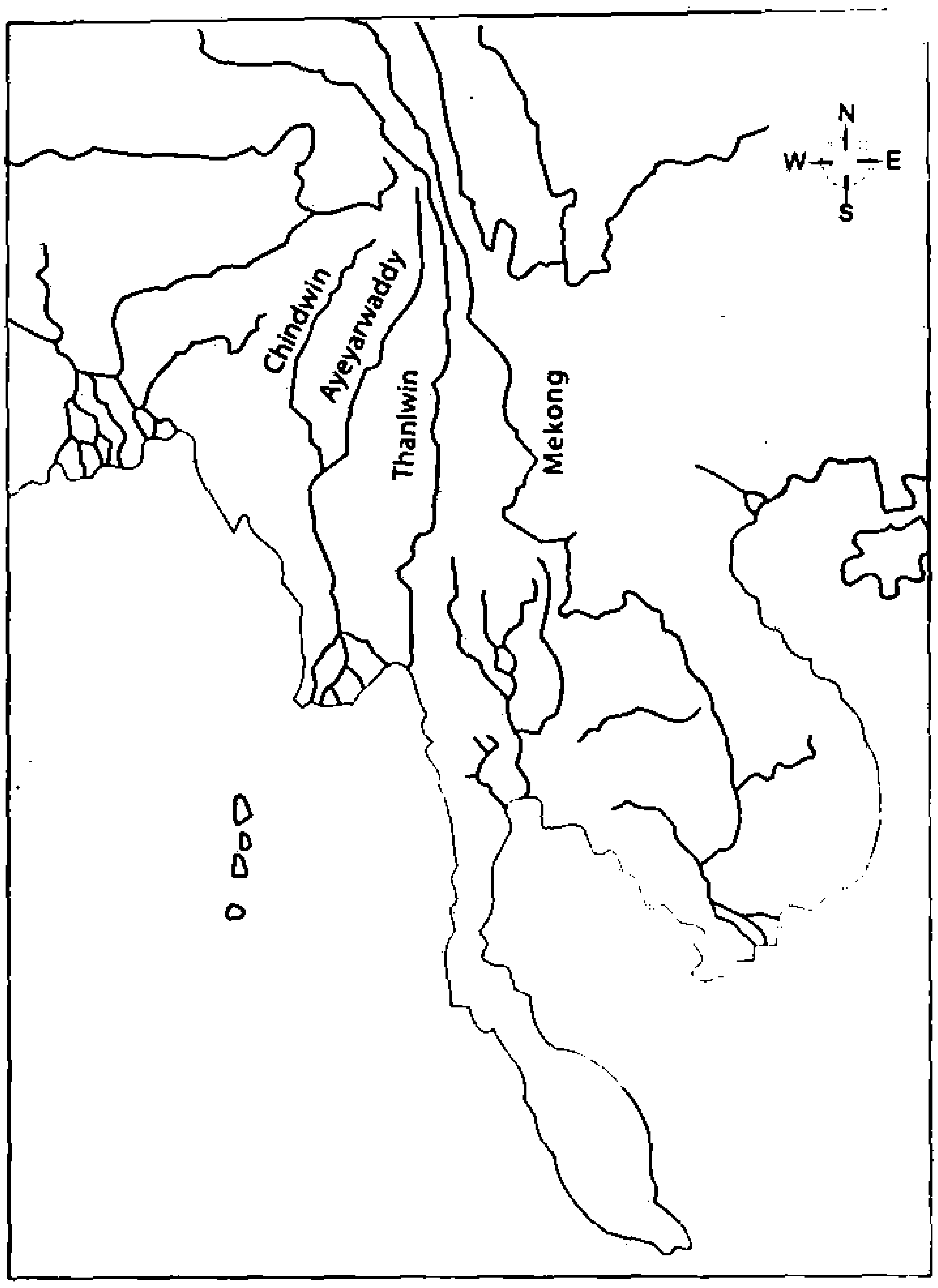
INTRODUCTION

The traces of human intervention in the landscapes of early Myanmar are connected at various points in time. Although they are in the past, they need not be understood as finished; stone tools and rivers are no more fixed than terracotta urns made brick walls 'complete'. The process was one of change, the continuity being in man's physical and spiritual engagement with the world around him. Landscapes were a central expression of how these were seen to operate in relation to human survival, especially from circa 1,000 BC to 1,000 AD as new institutional and social structures emerged.

Evidence comes from all parts of the present country, but the focus here is on inland Upper Myanmar and coastal Lower Myanmar, for the contrasts between these regions offered flexibility enabling the emergence of Hindu-Buddhist polities. The artefacts marking the transition from prehistory are structured most obviously in relation to a landscape of north to south rivers, a pattern shared with the Chao Phraya and the Mekong. Much of the present country drains into the network of the Ayeyarwaddy (Irradwaddy) although rivers branch out to all regions of the country. Nonetheless, archaeological exploration of the first millennium AD or earlier has principally been conducted along the Middle and Lower Ayeyarwaddy, an imbalance that this book attempts to rectify by its attention to more recent data from the Lower Chindwin and Samon, the Lower Thanlwin and Sittaung, and the Dawei Rivers.

Valley region[1]	Latitude (N)	Longitude (E)
Upper Ayeyarwaddy	22-28	96-98
Middle Ayeyarwaddy	20-22	94-97
Lower Ayeyarwaddy	16-20	94-97
Upper Chinwin	23-26	94-95
Lower Chinwin	21-23	94-95
Mu	22-24	95-96
Samon	19-22	95-97
Myit Nge (Dhotawaddy)	22-23	96-98
Sittaung	17-20	96-97
Lower Thanlwin	17-19	97-98
Inle (Inlay) Lake	20-35	96-55
Kissapanadi (Kaladan)	20-21	92-93
Dawei	14-15	98
Delta rivers and canals	16	96-97
Extreme North (Me Hka and Mali Hka)	25-28	96-97

Opposite: The centrality of Myanmar within the region is highlighted by this hand-coloured 1829 map with steel-engraving by Sydney Hall, London. Archaeological evidence dating to the first millennium AD or earlier has been recorded in river valleys throughout Myanmar, with the exception of the Upper Thanlwin running across the Shan Plateau. The river has cut deeply in this region so that no valley has formed. As rain reaches Myanmar from the southwest, the Lower Myanmar Tanintharyi (Tennasserim) and Rakhine (Arakan) coasts receive many times more rainfall that the long north to south Ayeyarwaddy (Irrawaddy) River basin. *(Courtesy The Old Maps and Prints)*



The common orientation of many of the major rivers of Southeast Asia enabled early and sustained overland, coastal and maritime interchange. Map after San Shwe.

Rivers and cultures

By the Late Palaeolithic, many of the major river valleys of Myanmar were settled with stone tools, rings and pottery at Neolithic sites adjacent to streams (*chaung*) and seasonal lakes (*in-gyi*) and ponds (*in-aing*). These have been excavated in Upper Myanmar and recovered from provenanced deposits in Lower Myanmar. The overriding importance of local water sources is illustrated by sites such as Taungthaman, south of Mandalay where Neolithic stone rings, tools and pedestal pots as well as iron tools have been found adjacent to an *in-gyi*, to Mayangon and Hsinbyukyun, just west of Thaton, both located along small streams. At Mayangon, more than 120 stone rings, tools and pedestal pots were recovered 1.5 metres below ground level during improvements to a canal. In the Chindwin bronze-using sites (*circa* 1,500-700 BC) and Samon Bronze-iron (*circa* 700 BC-400 AD), settlement patterns are governed by the drainage pattern of small streams and the location of stone and ore sources. During the Neolithic, Bronze and Bronze-iron eras, interaction with the terrain was varied, adaptation to local ecologies rather than major modification to minimise the dangers of seasonal change and enhance agricultural and technological developments.

Major alteration of the landscape begins with the emergence of walled sites (*circa* 200 BC-900 AD). Both Ayeyarwaddy and Lower Myanmar coastal sites of this era are still located in relation to localised topography, streams and seasonal lakes and ponds. They are, however, enclosed by man-made ramparts, the unique form of each site being derived from natural factors. The walled sites, typified by the presence of Hindu-Buddhist artefacts, are commonly associated with two different ethnic groups, the Tibeto-Burman Pyu along the Ayeyarwaddy and the Austroasiatic Mon along the Lower Myanmar coast and in the far south. Inscription in Pyu are perhaps dated to ca. 3-4th century, while Mon epigraphs in Myanmar have been attributed to ca. 6th century. However, and this is an extremely important point, there were not two homogenous groups of peoples or cultures. There were instead many constantly changing bands and cultures, probably linked to much earlier movements of peoples associated with the inception of wet rice agriculture.

This is hinted at by the comparable artefact repertoire noted above for Taungthaman and Mayangon and Hsinbyukyun at Thaton. Indeed, a point we will return to, among these are artefact types that are cited in linking sites in Yunnan, Thailand and Malaysia with the arrival of Austroasiatic language-speaking groups and wet rice cultivation.

The chronology and interaction of these cultures is discussed throughout this book, with the labels of Pyu and Mon being used for the sake of relating to existing literature, not to imply that conventional texts are the most reliable means of interpreting material culture. Our reciprocal relationship with the past should not be forever prejudiced in favour of what is conferred by words. The complex range of human interaction with the terrain that remains embedded in the landscape conveys a very different and valuable realm of activities sitting before us.[2] A first millennium AD Pyu inscription may be found at a site in Upper Myanmar, but this does not mean the predominant population was Pyu – and 'Pyu' does not designate a homogenous cultural entity.

From around 200-300 AD, within Myanmar and across much of the mainland, as Indic norms were selectively integrated and social and economic networks increased, so did cultural diversity. The changes (as presently known) were restricted to lowland areas of central and southern Myanmar. They did not include the present Kachin, Chin, Kayin (Karen) and Shan States, where non-Indic cults are thought to have prevailed. Their relationship to earlier sites such as Badah-lin (*circa* 13,000-7,000 BP) on the edge of the Shan Plateau and similar limestone caves in Kayin, Kayah and Mon States is unclear. All these areas were certainly inhabited from the late first millennium BC through the early centuries AD, but it is not possible to tie them into central basin developments. In addition, it is important to realise that groups such as the Kachin, Chin, Kayin, Kayah and Shan are made of many distinct cultural sub-units. For example, the Shan State (North) is occupied by Shan, Bamar, Palaung, Wa, Danu, Kokang and Kachin peoples and Kayin and Mon both live within the Mon State. As this shows, while the current state names reflect the major group, populations are diverse. Evidence for the transition to Hindu-Buddhist entities in the early centuries AD, therefore at present comes from central lowland areas: the valleys of the Ayeyarwaddy, Chindwin, the Sittaung – Lower Thanlwin and Dawei.

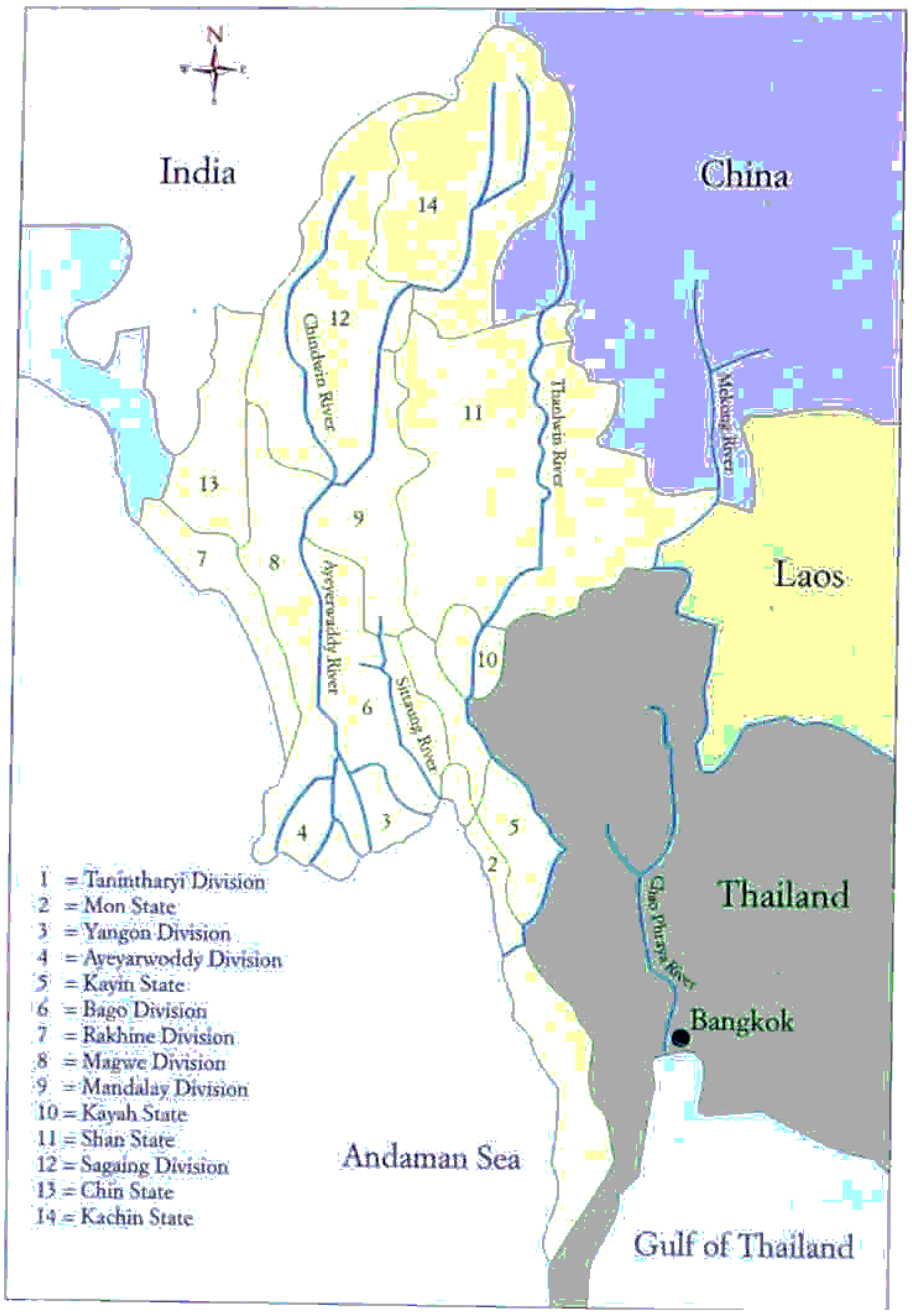
The material in this book is organised into four chronological periods:

Hunter-Gatherer	(*circa* 700,000-4,000 BC)
Neolithic	(*circa* 3,500/2,500-300 BC (?))
The Rise of Chiefdoms	
Chindwin bronze-using sites	(*circa* 1,500-700 BC)
Samon Bronze-iron	(*circa* 700 BC-400 AD)
'Pyu' and 'Mon'	(*circa* 200 BC-900 AD)

After an introduction to the geography and geology of the country, these periods are described in Chapters 2-5. The dates given above are general indications, all in need of more absolute and relative dating. Chapter 6 on the Early Landscape discusses landscape changes in relation to trade, populations, social and religious change and the use of chronicles and legends to supplement empirical data.

Hunter-Gatherers

The evidence for hunter-gatherer habitation in Myanmar is concentrated along the Middle and Upper Ayeyarwaddy. The main body of material remains that published by Movius and De Terra in the 1940s, an assemblage of more than 650 stone tools labelled Anyathian, after 'Anya', the Myanmar word for the people of Upper



In describing ancient sites, the present administrative states and divisions are often used to give general locations.

Myanmar.[3] The Early Anyathian 1, 2, and 3 tools were dated geologically to 400,000-100,000 BP – which seem questionable until compared to similar sites near Lampang in northern Thailand dated to 700,000 years ago.[4] Late Anyathian tools from Movius and De Terra's survey were similar but smaller than the Early Anythian, and can also be compared to Myint Aung's survey of the Mu valley (21°45-23°N x 95°E) dated to 30,000-20,000 years ago as well as material from Htaukmagon-Moegyobyin at Salingyi. Related tools have been recovered from Letpanchibaw on the Ayeyarwaddy north of Bagan in a sequence that continued through the Neolithic, Bagan and later historical periods.

The classification of the stone tools from these sites varies from author to author, being called Late Anyathian, Mesolithic or simply flaked. The term Late Anyathian has also been applied to material from Badah-lin on the edge of the Shan Plateau. This has been dated to *circa* 9,000-6,000 years ago from samples obtained in excavations carried out by Aung Thaw in the late 1960s. Survey of similar sites in other regions of the country suggests there are many finds to be made. For example, charcoal, red ochre and stone tools were recovered from a limestone cave beneath Waiponla Stone Hill, Pa-an Township in Kayin State. These have been provisionally dated to 9,000-6,000 BP based on comparison to Badah-lin.[5]

It is likely that habitation in the south reaches much further back if one considers sites such as Lang Rongrien (9°13'N, 98°53'E) near Krabi on the west coast of Thailand. Excavations there have yielded material showing occupation over at least 25,000 years. Finds included well-made flake and core tools in Pleistocene contexts, as well as pottery and polished adze/axe blades post-dating the post-Pleistocene sea level maximums some 6,000-5,000 years ago.[6] However, data is not yet available to link this sequence to the Myanmar coast further north.

Neolithic

The term Neolithic is broadly used in Myanmar for polished stone tools and rings, some of which were labelled Post-Anyathian in Movius and De Terra's publication. Finds from Letpanchibaw also included ceremonial stone rings and bronze tools similar to those found at a cemetery near Nyaunggan village on the Lower Chindwin. As these examples suggest, 'Neolithic' is used frequently in Myanmar, but at present its archaeological exploration is largely used for surface finds of stone tools throughout the country. In the Chindwin, some occur in bronze contexts and in the Samon valley are associated with bronze, iron and glass. These variable contexts have also been the case in neighbouring countries, with dates of about 4,000 years before present for non-metal ceramic sites such as Khok Phanom Di to the east of Bangkok. Given that these dates are similar to the appearance of bronze, Pisit Charoenwongsa long ago questioned the use of 'Neolithic' as a significant stage in local cultural development.[7]

Neolithic developments possibly dated to *circa* 2,500-1,500 BC have been little explored in Myanmar. Myint Aung has described lithic workshops at Taung Kaing and Shwezayan, with a date of 900 BC obtained by Sein Maung Oo. The presence of 'Neolithic' artefacts in mortuary contexts with bronzes, such Nyaunggan, has begun to fill out the cultural profile during the introduction of copper, bronze and iron working. For instance, at Taungthaman-*in* near Amarapura, a lithic workshop was found away from the seasonal lake (*in-gyi*) where iron-bearing inhumation burials were excavated. At all of these sites – lithic, bronze and iron – a variety of stone rings have been found. Thus not only the definition of the Neolithic is in need of further data, the range of ring types indicate both ritual and ornamental forms.

In the southern part of Myanmar, as elsewhere in the country, polished stone tools are medicinally valued and generally kept. However, finds are frequent and stone tools are among the souvenirs sold at the venerated pagoda of Kyaikhtiyo. Surface finds have also been made at a number of walled sites such as Kyaikkatha, Winka, Thaton and Kawparan. At Kyaikkatha, tools are commonly found by Kayin farmers working upland garden plots at Sein Kalat northeast of the site, but other tools have come up in a laterite-rich area within the walls.[8] Rough chisels and adzes were recorded as surface finds at Winka and Ayetthema in the 1970s but time constraints limited excavation to above-ground features.[9] West of Thaton, in 2005, polished stone tools and black incised pottery was recovered by the author and San Win at Hsinbyukyun and more than a hundred tools, rings and pedestal pots were found by San Win at Mayangon. The Mayangon tools included adzes, axes and sickle-shaped implements with serrated inner edges, not recorded to date in Upper Myanmar. In Mudon, south of Mawlawmyine, long thin polished tools have been recorded and various tools have been found in Dawei and Myeik.[10] As these few examples show, the range of finds is significant, and in the case of Mayangon, the clear link of the stone rings to ones recorded at sites west of Bangkok begins to establish a firm base for the Lower Myanmar Neolithic to Iron Age.

Nonetheless, plotting the distribution, much less putting the Myanmar Neolithic into wider debates about the date when Austroasiatic language speaking groups dispersed from China to Southeast Asia has not yet been possible. The question has recently been discussed by Glover and Bellwood who maintain that Austroasiatic speaking peoples were dispersed on the mainland by the Neolithic and that the start of wet

Stone tools and rollers from Kyaikkatha. The range of muller stones are similar to those associated with the first millennium AD Dvaravati sites of Thailand. *(San Win collection)*

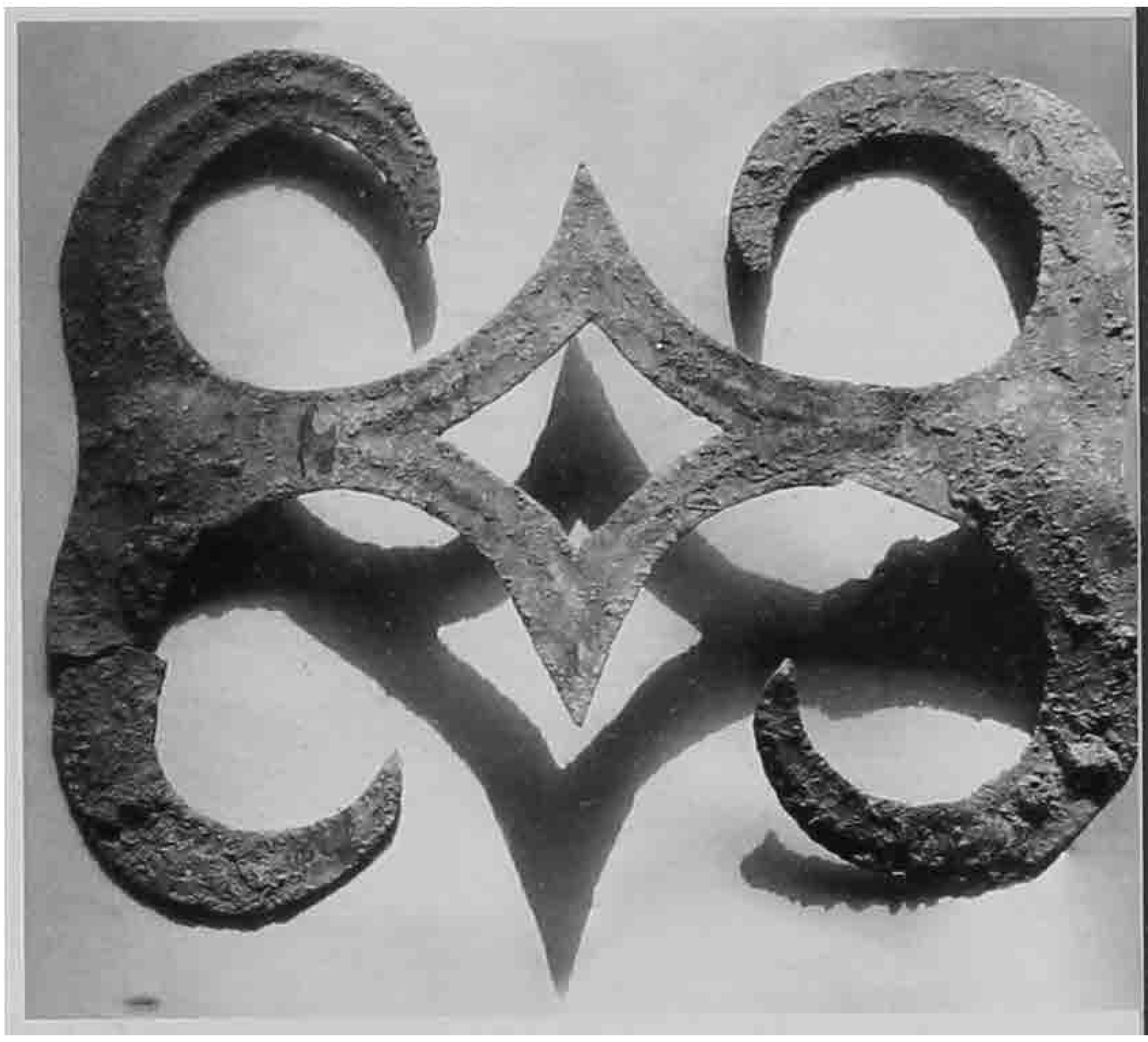
rice farming arose from ecological opportunism by groups such as the Hmong-Mien. Higham, on the other hand, puts movements from southern China bringing wet rice farming to the 2nd or 3rd millennium BC. Sorenson discounted migration down the Ayeyarwaddy due to inadequate evidence from De Terra and Movius' 1940s work.[12] He did suggest the Thanlwin, but both rivers were probably important conduits in the movement of different peoples and agricultural techniques. Luce speculated from a linguistic angle about interchange of many language-speaking groups. He advocated a Mon heartland in Kyaukse and suggested the possibility of earlier Austroasiatic and Austronesian peoples in Upper Myanmar.[13] While at present there is not enough data to confirm or reject any of these propositions, they are vital for putting ethnically generalised terms such as 'Mon' and 'Pyu' into the broader context of numerous Austroasiatic and Tibeto-Burman 'tribes' during the Neolithic and subsequent periods.

Chindwin Neolithic and Early Bronze

There have as yet been no excavation of any Stone Age or Neolithic sites in the south, and although bronze artefacts are found, they either kept as talismans or are only in later contexts. In the north as well, although bronze artefacts are fairly frequent, the Department of Archaeology's 1998-99 excavation of Nyaunggan was the first time that a cemetery yielding bronze artefacts had been systematically explored. The bronze weapons and ceremonial stone rings in mortuary contexts gave some evidence of ranking but there has not been full analysis of these in relation to pottery, the most abundant grave good.[14]

Nyaunggan-type artefacts are found at the numerous Neolithic sites around the Lower Chindwin. Only some of the Chindwin sites have bronze artefacts and where they are found, the bronzes are few in number. However, many surrounding sites have yielded stone tools, rings and similar pottery. The cemetery at Nyaunggan had lost almost two metres of overburden prior to its 1998 excavation, and little work has been carried out elsewhere in the Chindwin valley, so the present scarcity of bronze artefacts as well as the absence of iron and glass may be revised with more data. The Lower Chindwin is one of the most significant valleys needing research.[15] It is an area of topographic diversity, with the Nyaunggan cemetery located on the rim of one of a line of extinct craters crossing the defile of the Lower Chindwin. The excavations yielded mortuary goods including pottery, bronze tools, and stone artefacts such as ceremonial rings and tools. Occupation of the cemetery has been placed at about 1,000-1,500 BC based on stylistic comparison of the bronzes. More sites have been identified nearby on both banks of the Chindwin, with some particularly promising finds from the variety of stone at Salingyi, where the Htaukmagon finds were documented.

The abundant local stone was valued not only as tools and a range of ceremonial and ornamental rings, but what may be megalithic burial markers. Mineral resources are also found in the region, notably large copper deposits, but lead rolls were also among the surface finds from Nyaunggan. Similar lead rolls, possibly with writing on them, were one of the surface finds at Maingmaw (Pinle), a walled site on the periphery of the Samon valley south of Mandalay. Lower Chindwin-type finds extend northeast to the walled site of Halin, north of Mandalay. Halin has yielded not only Chindwin artefacts but bronze-iron finds typical of the Samon. For example, finds in 2005 near the Shwegugyi pagoda just south of the Halin wall included an inhumation burial some 4.9 metres below surface level.



Floral ornaments such as this one from Badigon near Pyawbwe are thought to have been fixed to the sides of wooden coffins in the Samon culture. *(T&Q collection)*

Samon Late Bronze

Bronze-iron artefacts in the Samon valley were first discovered in the late 1970s following Aung Myint's 1965 discovery of Maingmaw.[16] Samon-type artefacts have been found at nearby Kume, but not yet Maingmaw. Maingmaw nevertheless led to the still-growing data on the Samon culture because its discovery prompted digging for the attractive beads found in the Samon graves. Very similar beads are also typical of the walled sites associated with the Pyu, but the Samon artefacts have none of the Hindu or Buddhist elements that typify the latter. The Samon bronze-iron distribution known at present extends from Pyinmana to Halin, west to Son Gon (Mt. Popa) and east to Myauk Mee Kon at the foot of the Shan Plateau.[17]

Following continued bead-hunting, many other artefacts started to be found with inhumation burials. The richness and complexity of the Samon sites, both looted and excavated over the last 25 years strikingly highlights the archaeology remaining to be documented in Myanmar. Since the late 1980s also, construction of roads, dams and bridges has altered the region greatly, with building equipment unearthing many artefacts. Two recently completed projects in the core area of the Samon culture give some idea of the magnitude of constructions. One is a direct road from Pyawbwe to Magwe, shortening the journey from 246 km to 158 km.[18] The other is a dam, for out of 176 dams constructed during this period, 44 are located in Mandalay Division, irrigating 372,866 acres of farmland. The dam at Myo Hla (Tatkon), Yamethin Township, Mandalay Division, is 640 m long, 24 m high with a 286 m long and 9 m wide spillway.[19] When this project was begun in the late 1990s, Tatkon was notorious for the extent of bead-digging. The excavation of Myo Hla by the Department of Archaeology in 2004 suggests that the correlation between development and a need for rescue archaeology is now being recognised. However, the combination of earlier bead-digging and development mean that a large number of Samon artefacts are poorly provenanced.

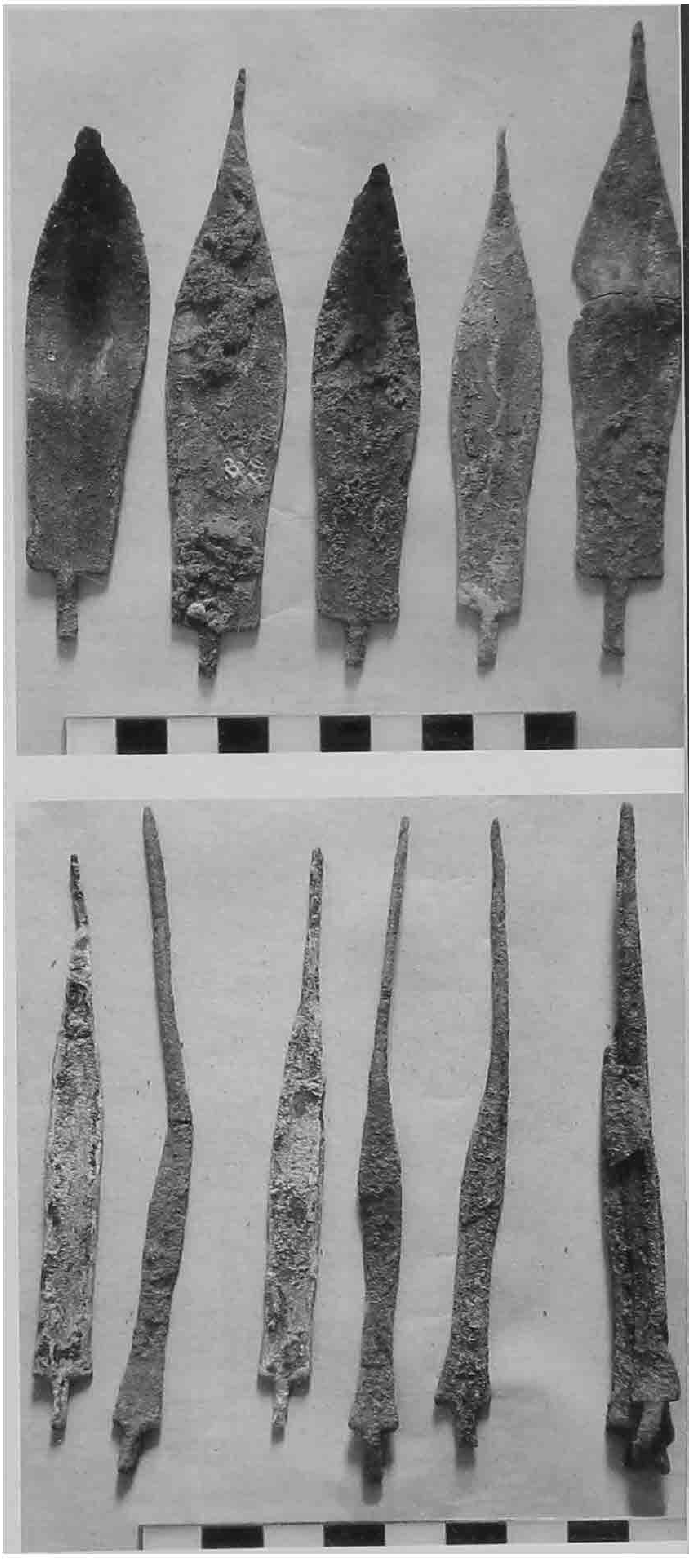
As the bronze-iron finds are concentrated within the Samon valley south of Mandalay, this geographical term has been adopted to distinguish it from the Lower Chindwin goods. There are a large number of sites, but the few measurements of size have been only of the excavated cemetery areas found within current villages and also outside these. To suggest a spatial model for either the Chindwin or

Many artefacts of the Samon bronze-iron culture are chance finds. In 2006, a lidded bronze box was recovered at Badigon, earlier linked to the Hindu-Buddhist 'Pyu' cultures. The box contained the figure of a man (13 cm) holding out a boat-like object towards a post seen as a bird by villagers. *(T&Q collection)*

the Samon at this juncture is thus premature for while the regional norm is integration of mortuary and habitation areas, the extent of these in the Samon is not fully documented. Samon artefacts include ceremonial and ornamental rings made of stone, glass or bronze, stone and glass beads, and implements of bronze and iron. Among these are axes and spears, bimetallic bronze-iron swords, miniature bronze spears, and bronze wire packets (*kye doke*). Thin bronze sheet reliefs of 'mother goddess' figures, bronze floral ornaments and cones are associated with the coffins recorded to date. Some of the Samon pottery is similar to the Chindwin, notably a pedestal pot with three upright cylinders perforated on the tip, perhaps for the production of ritual alcohol. However, in the Samon region, these are often non-functional miniatures, a type not seen in the Chindwin. To date, Chindwin mortuary goods seem earlier, with use of high-copper bronze restricted to tools and a few very simple ornaments. This may have safeguarded the Chindwin sites, which have been less subject to looting than those of the Samon. As might be expected with the diversity of the Samon finds, there is much greater evidence of ranking in the burials with only a few inhumations being found with 'mother goddess' figures fixed to the top of coffins.

In the context of Luce's broad hypothesis about population movements, it may be that the Samon was one of several Tibeto-Burman cultures, with the Chindwin Neolithic akin to Austroasiatic or other variants of Tibeto-Burman groups. This would explain the similarities of the Samon bronze goods to those of Yunnan, and in competition and conflict arising from this mixture, the subsequent consolidation of walled sites in Upper Myanmar. We will later suggest analogies between these changes and those made by Calo' for the Dian sphere of influence around this time.[20] For instance, finds from close to the surface at the looted site of Myauk Mee Kon, near Beinnaka, Pyawbwe are very similar to bronzes from the Dian culture around Shizhaishan. The earliest bronzes from Yunnan date back to *circa* 700 BC from sites such as Wanjiaba (800-400 BC) east of Lake Er.[21] However, the most well known of the Dian materials are dated to *circa* 400 BC to 100 AD.

Travel from Pyawbwe to Shizhaishan was possible along a number of rivers and streams such as the Samon, Ayeyarwaddy, Myit Nge (Dhotawaddy) and Shweli. And while the upper layers of Samon artefacts are similar to the Dian, the objects such as *kye doke* are not found in Yunnan. Of the bronze finds, the *kye doke* are the most common indicator of the Samon culture, small bundles of almost pure copper found on most skeletons in the Samon. As wealth indicators, they possibly link the Samon culture to the expansion of sedentary communities, for analogous forms are seen in bundled grain ears of rice and barnyard millet found at Haimenkou (1,500-500 BC) in Yunnan where they are taken as indicator of settled agriculture and animal husbandry.[22] In the Shwebo area of Halin, paddy ears are cut short so the remaining stalks can be reaped separately for fodder. This is then tied into bundles to be more readily chopped for fodder.



Among the Samon grave goods are small leaf-like bronze spears, sometimes found in a bundle in the hand of the skeleton. *(T&O collection)*

Samon Beads

As we noted above, some Samon and 'Pyu' beads are very similar. Most beads come to light without context, making it hard to say, for example, if a spherical carnelian bead is Samon or Pyu – especially as the same type occurs in Lower Myanmar. The greatest concentration of beads within the Samon appears to be around Pyawbwe, where Bronze-iron, Pyu and Bagan period remains are found, indicating that local sources played an important role in the region's continued prosperity. This is also the area where the

At Bagan, bricks become smaller and finger-marking dies out. A few bricks with characters made over finger-marking have also been found. Examples include stamps of Pyu numbers and a Mon inscription dated to the 11th century AD Anawrahta. These illustrate the use of the finger-marked bricks by different groups in Upper and Lower Myanmar. Win Maung (Tampawaddy) suggests two periods of finger-marking can be identified: an early phase with multiple lines made on brick ends or diagonally followed by a 10th to 11th century AD type from sites such as Pin Myo near Magwe having only single curvilinear markings.

elaborate bronzes akin to the Dian have been found. In addition the last king of Tagaung is said to have founded the city of Beinnaka, near Pyawbwe, linked in chronicles to the Pyu. The area is thus a significant one for future research.

Given the chronological and artefactual overlap between Samon and Pyu, it is worth returning briefly to the finding of Maingmaw. The Maingmaw discovery was reported in 1967, followed by a field survey undertaken in 1977 by Aung Myint, Maung Maung Tin, Than Tun and Win Maung (Tampawaddy). Preliminary excavations were carried out in 1977-78, with finds from these and surface survey including black and white line-drawn beads, urns, terracotta spindle whorls, lead rolls and silver coins. All were clear indicators of a major unexplored walled site. Maingmaw is significant not only for its size and its identification from aerial photographs, but the discovery of finger-marked bricks. It was during survey of Maingmaw that Aung Myint first identified finger-markings on the large bricks which are typical of sites of this period in Upper and

While archaeologists outside Myanmar often discount finger-marked bricks, within the country they are accepted as useful reliable markers of first millennium AD cultures. The bricks are of little interest to collectors so apart from being taken for road and rail beds, they tend to remain *in situ*.

Terracotta roof tiles found at Hsin Hnyat, just south of Tagaung. Similar roof tiles have been found at Sriksetra and Tayoke-myo on Inle Lake. Literally meaning the 'Chinese city', this site and another called Bodhithat are located on the north side of Inle. Other finds from this area include finger-marked bricks. Additional sites with artefacts such as quartz beads and silver coins include Ramawadi on the south of the lake and Nam Pelu and Paung on the Bilu Chaung further south. Little exploration has been carried out but finds indicated the presence of various first millennium AD cultures within what are commonly called Mon and Pyu traditions.

Lower Myanmar. At Bagan, bricks become smaller and finger-marking dies out. Finger-marked bricks, however, have become a reliable index for identifying sites throughout the country.[23] The distribution of finger-marked bricks extends east into the Dvaravati sites of Central Thailand and Phimai in Northeast Thailand, where their use is placed in the 7th to 9th century AD.[24]

Upper Myanmar walled site cultures

While the Samon culture is similar to that of Yunnan, the walled sites linked to the Pyu are associated with areas to the west such as Bengal, coastal India and Sri Lanka. The earliest stylistic affinities are to Buddhist sites such as Taxila, Amaravati and Nagarjunakonda.In addition, the Samon cemeteries are village-based with ancestral-animistic artefacts in inhumations from cemeteries sometimes in the centre of a village, on the edge or in nearby fields. Pyu assemblages are from highly ranked Hindu-Buddhist polities, sometimes walled, with an enclosed palace-citadel area. Inhumations and urns are clustered inside and outside structures, within walled areas and flanking the outside of walls and gates. Walled or not, all have similar objects, some from excavations and many more that are surface finds. These include bricks, iron implements, bronze ornaments and sculpture, urns, structures such as stupas, temples and monasteries, beads and silver coins. Inscriptions in Pyu writing have been found at only some of the many sites where typical artefacts are seen. The early First millennium AD dates for this script and the perpetuation of a few sites in Myanmar chronicles has long meant a blanket identification of all these artefacts with an implied homogeneous Pyu population. We will return to this question at several points in the following chapters. Although more than 40 walled enclosures have been identified from aerial photographs, the principal excavations and dating have been carried out at only three: Beikthano, Halin, and

Bronze packet or *kye doke* found at Samon sites. Like other Samon bronzes, the packets often bear traces of a wrapping fabric.
(Collection Win Maung (Tampawaddy))

Above & facing page: This simply made seated image of the Buddha was probably made locally. From Thagara, housed at Hpaya Gyi Museum at Dawei.

Sriksetra (Thayekhittaya). Work continues at these sites but in recent years exploration has also begun to document a linked culture at smaller sites. At Halin, for example, a pattern of eight fortress sites has been identified by Win Maung (Tampawaddy) who suggests that a similar pattern was present at most of the centres.

Research by the Department of Archaeology has also begun to document the stratigraphy of these. In 2001-2 excavations at Letpanywa, 30 kilometres southwest of Beikthano, showed that finger-marked bricks were not restricted to walled sites. Finds included skeletons inside and outside two buildings as well as bronze and iron artefacts. The excavations also start to document the relationship of villages with brick structures to the better-known large walled centres. At Letpanywa and the many other sites where urns and bones are adjacent, it is not clear whether both were deposited at the same time, whether skeletal remains were subject to secondary burial or indeed, if the pattern is consistent at all the sites.

Lower Myanmar walled site cultures

Bronze and iron artefacts akin to those in Upper Myanmar have not yet been documented in the south. Stone and bronze tools and iron fragments and slag have been found but little research has been carried out on these, much less their spatial and chronological relationship to the many walled sites adjacent to or overlying such finds. The reasons for the scarce data include climate, poor access due to insurgency and priority given to Upper Myanmar sites. The wealth of material awaiting research is well demonstrated by the 2005 Mayangon and Hsinbyukyun finds at Thaton noted above, with small port villages such as this undoubtedly serving the more protected centres safely located on the higher lands a few kilometres inland.

Of the rationales cited here for data scarcity, the precipitation cycle in Lower Myanmar has been a significant constraint. As with the rest of mainland Southeast Asia, seasonal wind changes bring dry and cool weather from the northeast in October to April, but from May to September, southwest winds carry 80 percent of the annual precipitation. Much of this falls on the two coastal areas: Rakhine Division on the northwest and the Mon State and Tanintharyi Division on the south. In Thaton, for example, out of the 5,000 mm of rainfall per year, about 4,000 mm falls during June, July and August with little or no rain from November-April. During the heavy rains, more than 100 mm may fall within a 24-hour period. For example, 92 mm was recorded at Mawlamyine and 154 mm at Dawei in late July.[25] In contrast, in the Lower Chindwin precipitation is less

than 1,000 mm per annum, virtually all of it between May and October. Due to the amount and pattern of rain, vegetation is thick at most Lower Myanmar sites. This is not the scrub and thorns found in the central zone but thick lush vegetation blanketing the remains of ancient mounds. The vegetation may explain another difference between sites in Upper and Lower Myanmar: the depth of cultural deposits. For example, in excavations at Kyaikkatha at the mouth of the Sittaung, artefacts associated with a brick structure were found one metre below the surface and further south near Bilin in the Mon State, an assemblage of more than 100 polished stone tools was recovered at 1.5 metres below ground level. In contrast, in Upper Myanmar, brick structures are virtually at surface level.

The history of exploration is also different from Upper Myanmar, where walled sites were mapped during the early 20th century. Some work was carried out in 1905 followed by large-scale excavation in the 1950s. The aim of these and many subsequent investigations was to unearth above ground structures and validate the chronicles, not to document the full chronology of the site. Questions about Neolithic or Bronze Age settlements occupying these areas prior to the construction of brick walls may have been raised by those in charge of excavation but were not part of the formal programme. It was not until 1975-1978 that excavation was conducted around the Sittaung-Thanlwin at Winka and Ayetthema and then Kyaikkatha in 1996-1998 and 2000. In 2001, preliminary excavation was conducted at Thagara and Tanintharyi. These were

No excavation has taken place at Mokti, south of Dawei. However, finds of 'Pyu' votive tablets such as this indicate first millennium AD habitation linked to cultures to the north, south and east.
(Than Swe (Dawei) collection)

of short duration and focused on establishing links to the Pyu. In the case of Winka and Ayetthema, it was also to verify chronicles and inscriptions calling the area the legendary *Suvannabhumi* or 'land of gold'. Pioneering analysis of Lower Myanmar sites was carried out by Aung Myint followed by San Win's ongoing documentation of Sittaung-Thanlwin sites beginning in the mid-1980s.[26]

Upper and Lower Myanmar sites are also dissimilar in the materials used to build walls and the relationship of walls to the local topography. In Lower Myanmar laterite zones, the form of the site walls derives from the local topography, a pattern that continues in some cases in non-lateritic Tanintharyi sites. Upper Myanmar sites also relate to local resources but are not governed by the local topography, with their walls made of bricks and earthen ramparts. Lower Myanmar walls in southern Yangon Division sites and Mon State as far south as Ye, are of laterite blocks, bricks and earthen ramparts. In Tanintharyi Division, bricks were used, but not laterite, and the soil used for ramparts is higher in sand than that of Upper Myanmar. The different forms of the lateritic Lower Myanmar sites and those of Upper Myanmar may be analogous to Thailand where similar contrasts exist between Iron Age 'water-harvesting' sites in the laterite-rich Northeast (*circa* 300 AD) and 'territorial' Hindu-Buddhist sites in the central Chao Phraya basin (*circa* 6-7th century AD).

Lower Myanmar laterite sites such as Kyaikkatha, Winka, Zothoke and Thaton incorporate water-harvesting and territorial elements, with artefacts from these sites dated to *circa* the 4th to the 7th century AD. These include Amaravati-style images of the Buddha, finger-marked bricks, votive tablets and distinctive terracotta architectural pieces. These last are not found in Upper Myanmar, despite an abundance of suitable material, but are similar to 7th century AD Khmer lintels and Dvaravati Mon *Dharmacakra*. Most of the Lower Myanmar artefacts are paralleled in Upper Myanmar, such as beads, silver coins, votive tablets, pottery and finger-marked bricks. Sometimes the pieces are identical. In many cases, however, the Lower Myanmar artefacts are distinct: beads tend to be smaller and more opaque while coins are thicker and often with a conch motif. The bricks are of somewhat different proportions and the pottery often has rectilinear raised, honeycomb or curved combed patterns not seen on Upper Myanmar pots.

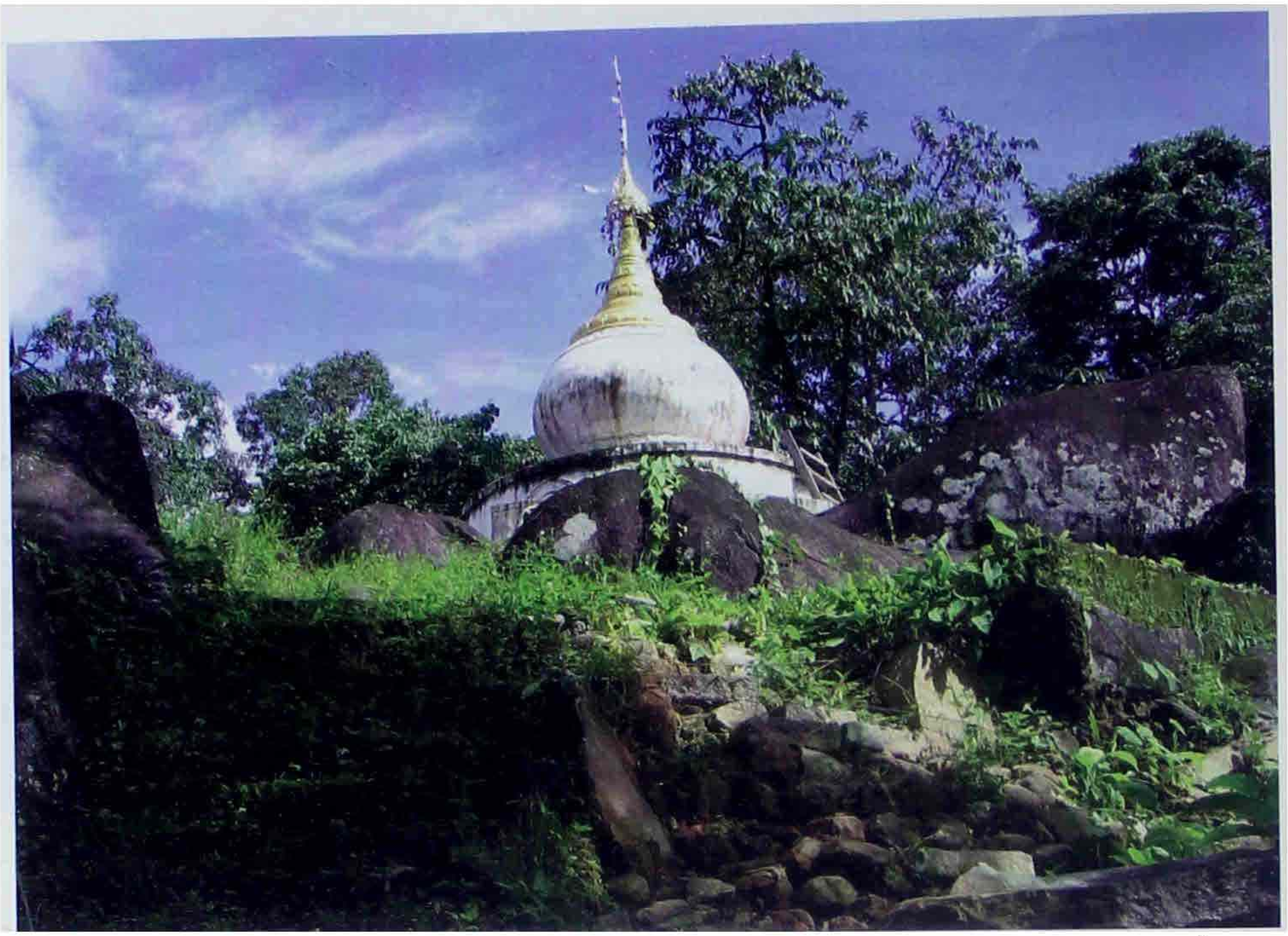
Other coastal sites: Sittaung-Thanlwin, Dawei and Rakhine

A number of ports along the southern coasts of Myanmar facilitated trade west to India and east to Thailand. The degree of shoreline change is not fully documented, although the Lower Sittaung has altered greatly in the 20th century. Given the dangers of flood, it is unlikely that sites were directly on the sea, but Winka and Ayetthema today are certainly further inland than in the early 1st millennium AD. This is also true for the area southeast of Yangon with sites such is Padagyi around Kyauktan and Twante (Kanbe), Yangon Division. A number of bronze images of the Buddha in an early Gupta style have been found in this area in 2004-2005.[27] The southernmost documented Pyu sites are around Pyay (Prome) at Sriksetra and its fortress site, Thegon. However, recent work by San Win has identified an inland waterway east of the Ayeyarwaddy extending down to the Hlaing River at Yangon.[28] This would have offered safer passage to the mouth of the delta than the Ayeyarwaddy. Southwest of Thegon is a 16 by 6.5 kilometre seasonal lake, which may have provided a harbour for warships of the Sriksetra ruler.

In Lower Myanmar, the area around the Gulf of Muttama (Martaban) has been traditionally been associated with Mon occupation but by the 14th century the Mons were clearly in the delta in and around Yangon. The first recorded renovation of the Shwedagon, for instance is by a Mon ruler, King Banya Oo in 1,372 AD. The absence of a firm line separating Upper Myanmar (Pyu) and Lower Myanmar (Mon) cultures is also seen on the peninsula at Dawei, Tanintharyi Divison. In this area, less coastline change has occurred, but archaeological data is even more scarce than peninsular areas further north. Midway along the peninsula, at Dawei, however, a number of walled sites such as Thagara and Mokti have been studied.[29] Artefacts from these include finger-marked bricks, 'Pyu' votive tablets, religious structures, urns and beads dating to *circa* 500-1,500 AD. The sites reflect the unique culture around Dawei for they are not clearly linked to either of the so-called Pyu or Mon cultures, with numerous links to both Dvaravati and Srivijaya areas in Thailand, Malaysia and Indonesia. In the very south, at Myeik, long stone chisels have been found and bronze axes and adzes were among the collections summarised by T. O. Morris.[30] As mentioned earlier, along with the need for exploration of the Chindwin, the archaeology of the peninsula is greatly in need of further research.

Another important early historic coastal area is on the northwest, the present Rakhine State. Like Dawei, Rakhine has a distinct dialect and culture with affinities to the Pyu and Mon such as silver coins and beads.[31] There are at present no radiocarbon dates but an 8th century AD inscription of Anandacandra of Vesali records 18 earlier rulers. The early historic sites of Vesali and Dhannyawadi (5th-11th century AD) are both surrounded by irregularly shaped walls, with some finger-marked bricks recorded from the surrounding areas. Selagiri Hill within Dhannyawadi houses an image of the Buddha thought to be from the time of the Buddha. While the dating of the image may be apocryphal, the local topography and surface finds of stone tools in the region suggest long occupation in the area with continued verneration of the hill. However, although some research is underway, there has been relatively little work on the prehistory of this region.

We will refer to Rakhine archaeology, but our focus remains manmade involvement with the landscape in Upper and Lower Myanmar, particularly in the integration of Indic norms during the 1st millennium AD. Three resources that have been important in the landscape-centric perspective adopted here are the concept of



A small pagoda marks the rocky summit of Mya Thabeik on Mount Kelasa, Bilin Township, Mon State.

'supernatural' places, chronicle texts and Chinese accounts, and aerial photography.

Natural and cultural forms

At 1st millennium AD and earlier sites, the vital importance of the landscape can be seen in an awareness of what Tilley and Bennett have called 'super-natural' places.[12] For example, the Nyaunggan cemetery is located on the rim of an extinct volcano, one whose guardian spirit remains venerated today. An association of first millennium AD sites with tutelary nats and mountains can also be found in mountains such as Kelasa and Zingyaik in the southern Mon State. Supernatural places include the salty hot springs of Halin, the many *in-gyi* or seasonal lakes such as those of Beikthano and Taungthaman and the high Shwezayan escarpment overlooking the Dhotawaddy River east of Mandalay. There are the Neolithic megaliths of the Lower Chindwin and the striking granite boulders and laterite formations of Bilin Township in the Mon State.

Similar impulses with implicit recognition of chthonic or earthly powers include the Upper Myanmar custom of multiple urns embedded in natural and manmade elements and at Sriksetra, the huge iron nails rammed into the earth outside the gates. In Lower Myanmar, there is carving out the earth's contours for moats and earthworks and beliefs associated with deep laterite cavities such as those seen at Zothoke. Throughout the country there is the medicinal power accorded to *moegyo thwa*, thunderbolts or stone or bronze axes – a belief which today means many excavated stone or bronze tools go into private collections. In these varied examples, there is clear recognition that these were not natural places or objects, but abnormal features with remarkable potential understood it would seem in a way synthesising their spiritual and technical efficacy.

Both cultural norms and natural elements structured sites, and it is in the dialectic between the two that the archaeology of Myanmar is best understood.[33] Keeping the setting and natural elements in view can in any case draw attention to the biases that condition both our experience of the site and the way it has been investigated and documented.[34] This also applies to the treatment of the Myanmar chronicles in archaeology.

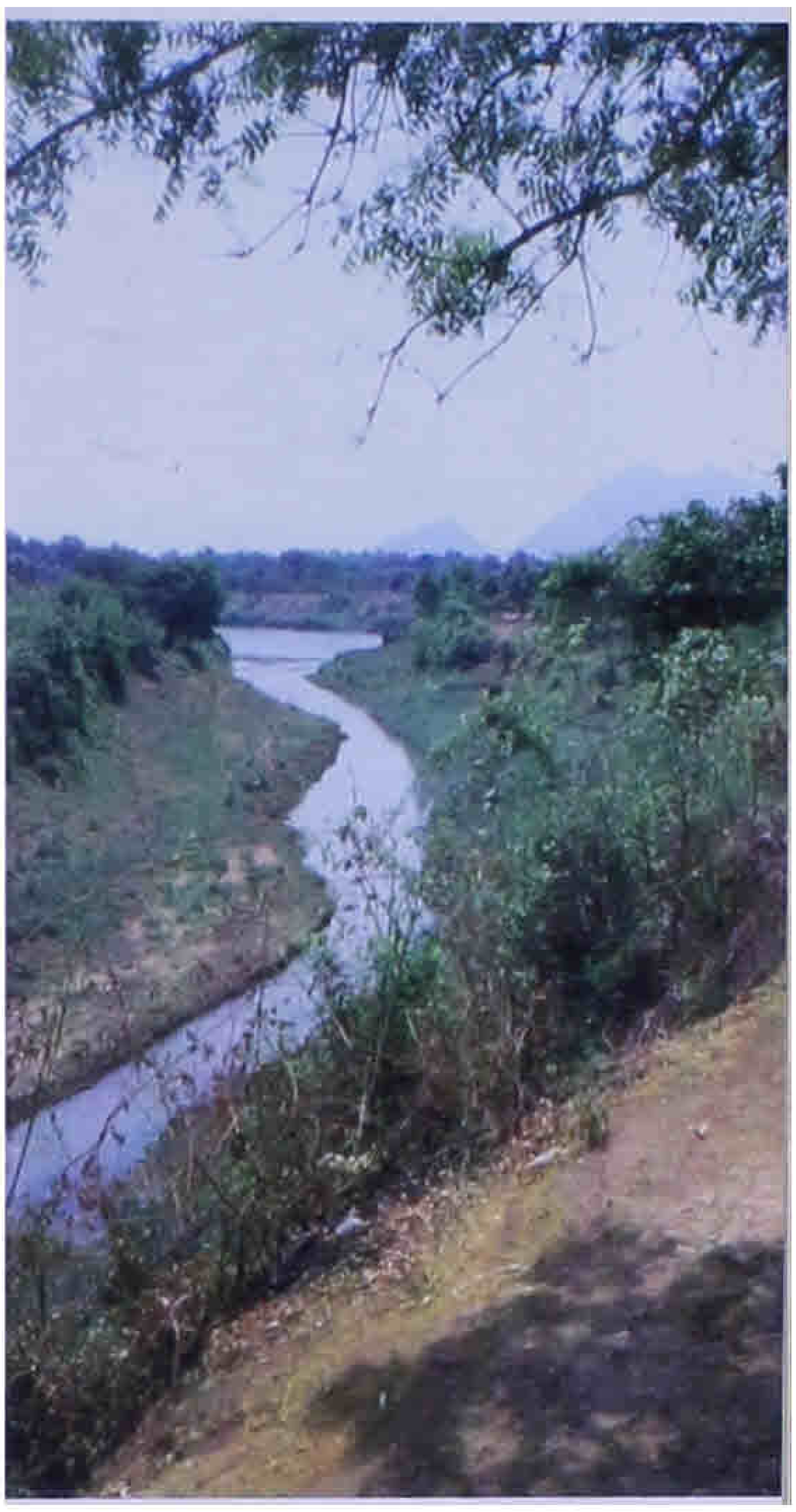
Myanmar chronicles and Chinese texts

The *Glass Palace Chronicle of the Kings of Burma* begins the story of the country's ancient capitals with Tagaung. It records the city name in the time of the previous Buddhas of this era, with 'Tagaung' being its title in the lifetime of the 6th century BC Buddha Gotama.[35] In the *Taungdwingyi Chronicle*, Beikthano Queen Panthwa's lineage is traced to Tagaung and the heir becomes a hermit near Srikestra. A young doe living there gave birth to a daughter named Bedayi, after happening to lick up the hermit's urine left in a cup in the rocks. Bedayi bears a child who becomes King Duttabaung of Sriksetra.[36]

As these few bits of the long legend illustrate, Tagaung, Beikthano and Sriksetra are linked with tales all including supernatural events, a hermit or *Yatheit* and the nurturing of those who found a Buddhist kingdom. Similar examples are found in Mon and Dawei chronicles recording the story of Gawampati and Gawinanda.[37] In one, Gawampati and his brother, future king of Thaton, are born from the union of a *Naga* and a hermit. According to Bagan period inscriptions, Gawampati is later present at the founding of Sriksetra. The Gawinanda tale tells of a prince, Maung Nwa (Mr. Bull) who becomes a *Yatheit* eventually fathering two children, born of a Ngakoma fish *nat*. The male child is later crowned king of Thagara, the first millennium AD walled site north of Dawei.

The first archaeological sites to be excavated were those cited in the chronicles, where the focus is on site lineage rather than families. It is for this retention of place that they are especially important, for while many elaborations are later, in many cases the site lineage can be a useful signpost to an archaeologically significant locale. The significance of place has been noted by Tun Aung Chain who likened the importance of the later royal city to a *bodhimanda*, the site where successive Buddhas attain Enlightenment, being of permanent significance because it is a 'victory ground'.[38] In this link to the terrain they are compatible with the emphasis in the following chapters. They are also critical to realise the value given to the past in validating the present for many centuries in Myanmar and the way this tradition was perpetuated. Set within the context of Theravada kingship, the chronicles necessarily emphasise the Buddhist record at the expense of Hindu and animist aspects.

Despite all their biases, the non-empirical and non-linear structure for which they are considered academically unreliable, the



The Shwezayan escarpment where a Neolithic workshop was excavated overlooks the Shwezayan River northeast towards the Shan hills.

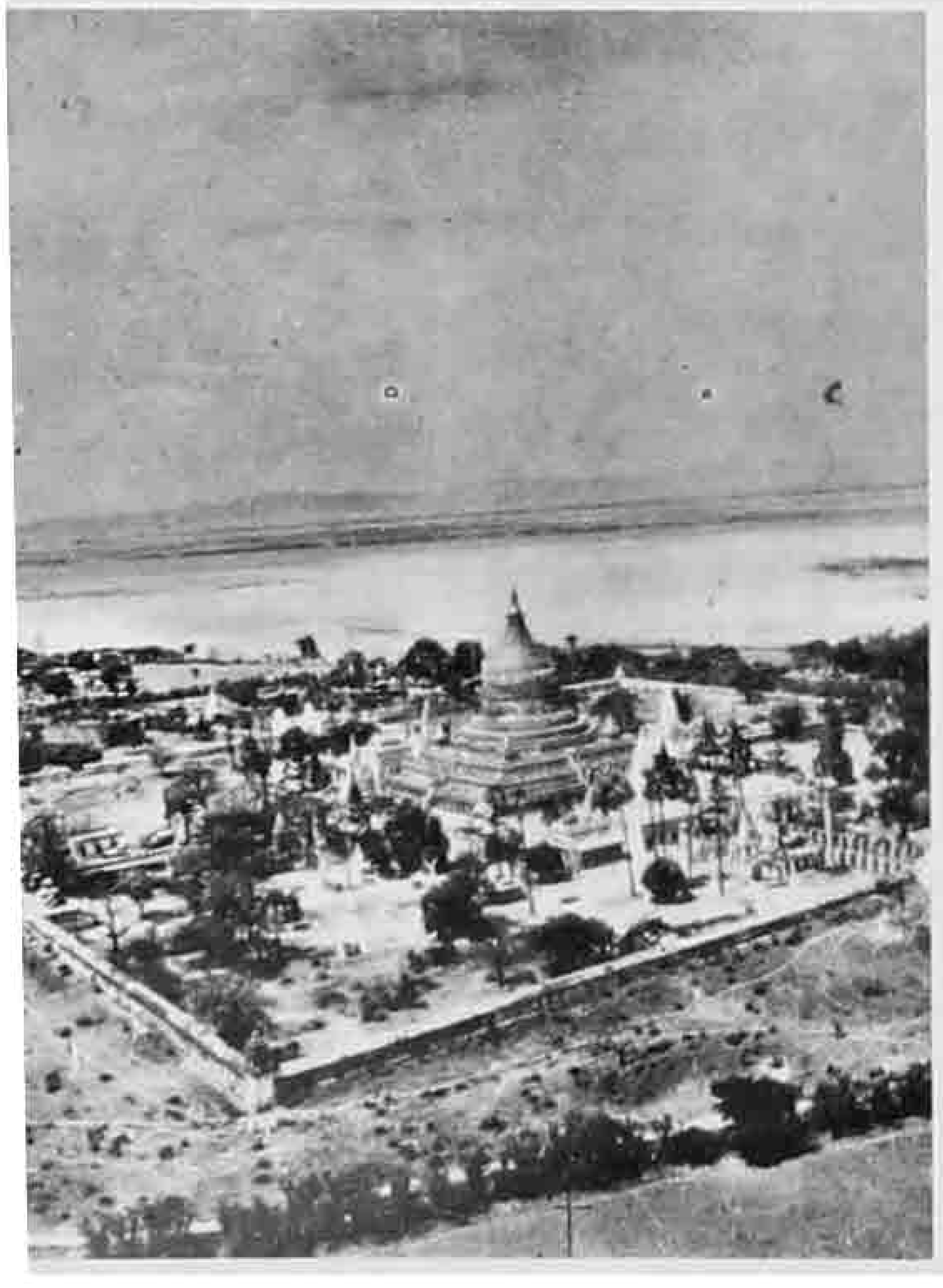
Portrait of Peter Williams-Hunt.

chronicles represent deliberate choices reflecting deeply rooted collective or social memory. To appreciate the complexity that gave rise to the cultures and nurtured their survival, such evidence needs to be documented alongside empirical data. They are particularly relevant for obtaining some sense of the conflict and upheavals that undoubtedly typified the transformation of animistic-ancestral to Hindu-Buddhist hierarchies. Given the unique continuity of Myanmar religious traditions, the chronicles provide an additional perspective on a period of change, which especially in relation to the landscape has not been fully documented.

Other information for the early centuries AD comes from fragmentary references to kingdoms in 3rd to 9th century AD Chinese texts. In these, the Pyu are referred to as the 'P'iao' although they are thought to have called themselves 'Tircul'. Chinese interest stemmed from the long established trade route between China and India that passed through Upper Myanmar. The Han dynasty establishment of a prefecture at Yung-ch'ang in Yunnan in 69 AD prompted more reporting from these areas. The earliest note is in the work of two envoys, K'ang T'ai and Chu Ying, sent to the court of Funan in southern Cambodia, possibly around 240 AD. There they met an emissary from India who gave them information about a number of kingdoms to the west. Upon their return home, K'ang T'ai in particular included these stories in his report.[39]

As this example shows, the information is second-hand and fragmentary, re-copied over time. In addition, as has been shown by Vickery for early Cambodian centres, it is likely that the use of 'kingdom' by the Chinese was based on Chinese political norms of the time. A 'kingdom' therefore reflects the centre's trade importance for China rather than necessarily signalling a particular level of local political, administrative and military organization.[40] Despite differences in measuring such norms, the early Chinese records do recall the Myanmar chronicle tradition in their focus on a succession of cities rather than rulers. Interestingly, given their word-of-mouth data and questionable terminology, while the chronicles are dismissed as legend, the Chinese texts about the 'barbarian' areas southwest of Yunnan often been taken as gospel truth.

The Shwezigon Pagoda at Bagan. Oblique, N.D.
(Williams-Hunt Collection, SOAS)



Aerial photography and archaeology

A major innovation was made in the interpretation of walled sites in Myanmar during the 1950s when aerial photographic interpretation began to be used in archaeology by Aung Myint. Hot air balloons had been flown over a number of areas in the 1920s by Kyaw Min of Dawei but the first serial aerial cover was taken in 1943-1945 by Allied Forces.[41] Some of these showing manmade landscape alterations and unusual terrain features were collected by Peter Williams-Hunt, an English aerial photographic interpreter. After his untimely death in the 1950s, his collection of some 5,000 photographs was stored in Oxford. As part of the author's doctoral work, the old prints were inventoried and digitised and now form the Williams-Hunt Collection (SOAS).[42] About 800 of these photos are of Myanmar, with the cover of Yangon donated to the National Archives and images of Taungthaman, Sriksetra and Hsinbyukyun, Thaton, Bagan and other sites included in this volume.

Within Myanmar, the earliest work with air photos was that of the Forest Department in the 1920s, with some aerial photos taken in a 4 x 5 inch format during surveys of tree cover from one-inch maps drafted from ground survey. The first archaeological site to be enlarged using air photos was of Sriksetra in 1954 by the Directorate of Aerial Survey. Sriksetra was then included in 1:24,000 air cover acquired in 1954, used to update the 1920s maps. It was at this time that Aung Myint was sent from the Ministry of Forestry to the Directorate of Aerial Survey. Fifteen years later, Aung Myint published his first paper on the use of aerial photography for the interpretation of archaeological sites.[43] He received the National Book Award in 1998 for the publication of *Myanmar She-haung-myo-daw-mya* (Myanmar Ancient Cities from Aerial Photos). All of his work has been innovative, but his identification of first millennium AD walled sites in particular has opened up research. Aung Myint's systematic study of air photos documented the form of Beikthano, Sriksetra and Halin and a host of new sites such as Maingmaw, Waddi, Thegon, Kyaikkatha and Sanpannagon (Hmawbi). Since its founding in the mid-1990s Aung Myint has taught at the Department of Archaeology, University of Yangon.

Research on archaeology within Myanmar is carried out by many private scholars but the two institutions responsible for archaeological study are within the Ministry of Culture and the Ministry of Education. As the perspective of scholars within these and their publications have influenced the contents of this book, they are briefly summarised below.

Taungdwingyi, near Beikthano, has remains dating to the First Millennium AD. Photo 3027 EA/IMP/145 5 Feb 45 F20. *(Williams-Hunt Collection, SOAS)*

Department of Archaeology, Ministry of Culture

King Bodawpaya (r. 1782-1819 AD) commissioned his Minister Twinthin Thaik Wun Maha Sithu U Htun Nyo to collect stone inscriptions from around the country.[44] A number of studies were carried out in the 19th century, for instance by Emile Forchammer, Taw Sein Ko and Charles Duroiselle.[45] The Burma (Myanmar) Research Society was formed by J. S. Furnivall in 1910, with its journal appearing the following year. In 1923, Pe Maung Tin and G. H. Luce published their translation of the 1829 *Hmannan maha-yazawin-dawgyi* (*The Glass Palace Chronicle of the Kings of Burma*) compiled for King Bagyidaw. From 1928 to 1956, the pair published five portfolios of inscriptions, a fundamental reference of the epigraphic record.

The Department of Archaeology of the Ministry of Culture was founded in 1902 as the Epigraphy Office under the Archaeological Survey of India. This was changed to the Directorate of Archaeology in 1954 and then the Department of Archaeology in 1972. A staff of some 1,200 personnel is divided into Research and Training as well as Conservation of Cultural Heritage divisions. The Department of Archaeology is one of three divisions in the Ministry of Culture, with the Department of Cultural Institute administering museums and the Performing Arts conducting training in music and dance as well as an undergraduate degree programme through the University of Culture. Aung Thaw held the post of Director-General from 1961-1982. After this it was held briefly by Ohn Khaing (1982-1983), Ogga (1983-1985), Than Maung (1986-1987), Khin Maung Nyunt (1987-1989), Than Maung (1989-1992), Thawda Sein (1992-1994) and Ye Htut (1994). After this, the department was under Nyunt Han until 2005, when Kyaw Win (Manotha) (2005-2006) and currently San Win.

In the 1960s and 1970s, excavations were conducted at Beikthano, Halin and Sriksetra. This was followed by Badah-lin, Winka-Ayetthema, Letpanchibaw, Taungthaman and Vesali in the late 1970s and 1980s. Many of the later excavations were conducted by Than Swe, Sein Maung Oo, and Myint Aung. Since 1998, the Department of Archaeology has excavated numerous bronze and iron sites around Mandalay including Nyaunggan and Monhtoo in the Lower Chindwin, and In-de, Kok Ko Kha Hla, Myin U Hle, Hnaw Kan, Ywa Htin Kon and Myo Hla in the Samon.[46] From 2001-2003, the work at Hnaw Kan, Ywa Htin Kon and to some degree at Myo Hla was conducted jointly by the Mandalay branch of the Department of Archaeology and the French Archaeological Mission. In the south, preliminary excavations were conducted at Kyaikkatha and Thagara in 2000-2001. In recent years, these have been under Pauk Pauk, Ngwe Ngwe Soe, Aung Aung Kyaw, Thein Lwin, Nyein Lwin, Paing Soe and others.Their work is documented in research reports, conference papers and in 2006, a large research compendium coordinated by the Minister of Culture.

Prior to Independence, the work of the Department was compiled into annual reports, published first as the Annual Report of the Archaeological Survey of India and then as the Archaeological Survey of Burma. Aung Thaw, then Director General of Archaeology, published the first post-Independence monograph in English, the *Report on the Excavations at Beikthano* in 1968 and *Historical Sites of Burma* in 1972. Myint Aung has published a number of newspaper articles on his excavations from the 1970s to the present. Many other books and articles by department staff such as Aung Kyaing have appeared in Myanmar language. The excavated finds are summarised in reports submitted to the Department, and although the annual report has not been published in recent years, the notices and articles are published regularly in the newspaper, both in Myanmar (*Myanmar Alin* and *Kye Mon*) and English (*The New Light of Myanmar*).

All excavations are now carried out under the auspices of the Department of Archaeology, with a Field Training School established at Sriksetra in 2005. In recent years, the reports on these have provided material for seminar and degree research papers for the teachers in University of Yangon. In addition, scholars from the Universities Historical Research Centre, Ministry of Education, are regularly invited to observe at excavations. Excavated materials are part of the display in various museums under the Department of Archaeology, while some such as the National Museum, founded in 1952, come under the Department of Cultural Institute. An increasing number of ASEAN-based programmes are also being co-ordinated through the Ministry of Culture.

inistry of Education

ie monastery was the centre of education in Myanmar until 1885 ien King Thibaw was exiled to India by the British. In 1813, wever, mission schools were granted a charter to operate freely thin the country, and the Rangoon Baptist College was opened in 72, with its name amended to Judson College in 1919.[47] The iiversity College, Rangoon was founded in 1876 in affiliation th the University of Calcutta. In 1920, University College and : Baptist Judson College were amalgamated and established as : University of Rangoon when the affiliation with Calcutta ceased. om 1948 to 1964, the unitary system replaced colleges. In 1964, : University Act created a system of professional institutes and ts and sciences universities.[48] Responsibility for these is today ared by a number of different ministries, although most chaeological research comes under the Ministry of Education. ie Department of Archaeology at Yangon University was unded in 1994, with the San Nyein as its first Head. Prior to is, archaeology came under the History Department, with some urses and supervision still shared by the two departments. Post-aduate teaching and doctoral supervision is principally at Yangon niversity with some Diploma and Master's teaching and idergraduate programmes at Dagon University, Mandalay niversity and Ratanabon University in Amarapura. Archaeology also now included in the syllabus of the Distance Learning niversity's programme. Archaeological research is increasingly ulti-disciplinary so instance, there is now a year-long training :ogramme on the use of GIS conducted by the Geography epartment. Resource centres provide computer facilities and ipport for the preparation of archaeology theses for Master's and octoral programmes. The results of such changes for archaeology e apparent in the academic papers presented at conferences and ibmitted for publication.

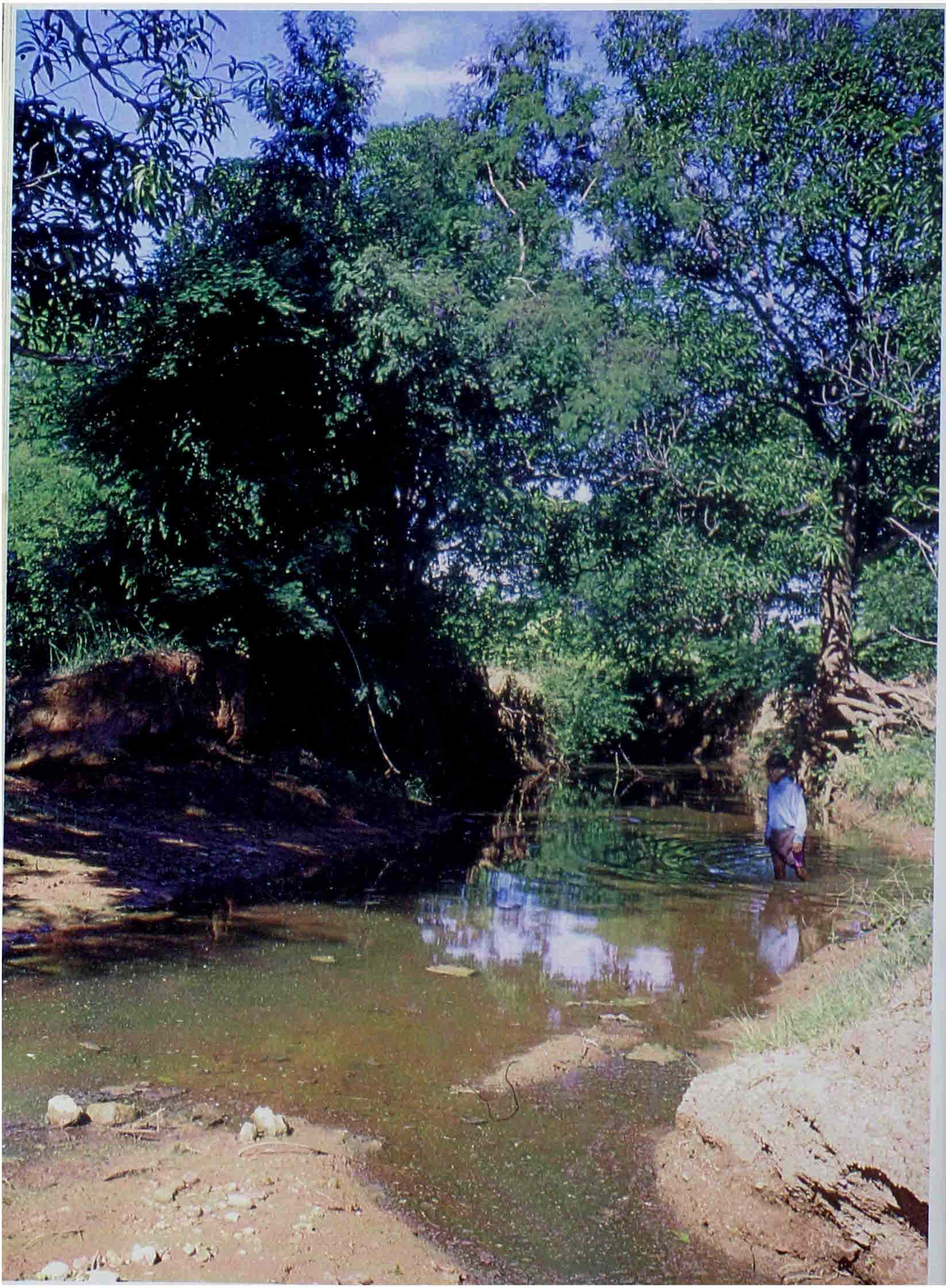
Research is also conducted by the Myanmar Historical ommission, first appointed in 1955, and reconstituted in 1960 id 1991. Its members, many of whom are former professors of listory, hold regular paper-reading sessions at the University of 'angon. These are published, along with other contributions in ie *Myanmar Historical Research Journal.* This began in 1960 as ie *Bulletin of the Burma Historical Commission* and after a hiatus om 1963-1977, appeared intermittently as *Researches in Burmese listory* until 1985. After another gap, it resurfaced as the current ournal published by the Universities' Historical Research Centre UHRC). The UHRC was founded in the 1970s with regular iternational conferences held since 1995 and the proceedings ublished by UHRC. Myanmar scholars contributing to these onferences include a number of private individuals as well as those n the education and culture sectors. In 1998, Myanmar joined the outheast Asian Ministers of Education Organisation (SEAMEO), ind the SEAMEO Regional Centre for History and Tradition SEAMEO-CHAT) was established in Yangon in 2000. In addition o hosting seminars, conferences and training programmes, SEAMEO-CHAT has initiated regional programmes such as an encyclopaedia of cultural history and has published some conference proceedings.

As these different areas of archaeology in Myanmar suggest, the study of the country's early history is not a new development. However, until recently there has been little reference to current and on-going research by local and foreign scholars. Scholarship over the past 30 years has yielded enough new evidence and enquiry to prompt many publications. There is not yet consensus on many of the issues raised here, but it is hoped that discussion will encourage others to take them up.

Footnotes

[1] Win Maung (Tampawaddy) 2005
[2] Bernstein 1983: 139; Gadamer 1979:257,1985:256, 266
[3] De Terra and Movius 1943
[4] Higham and Thosarat 1998: 24
[5] Tin Thein et.al. 2001
[6] Anderson 1988: 43, 56
[7] Charoenwongsa 1988: 27
[8] San Win 1986, Maps 6-8
[9] Myint Aung 1999: 47-50
[10] Khin Win Kyu 2003; Moore and San Win 2007; Moore and Than Swe 2007
[11] Glover and Bellwood 2004: 11; Higham 2002: 110; Higham 2004: 51
[12] Sorenson 1972: 497; De Terra and Movius 1943
[13] Luce 1969: v1: 30-1
[14] Moore and Pauk Pauk 2001
[15] Win Maung 2005
[16] Mongmao or Mongmai, Myittha Township (Moore and Aung Myint 1991, 1993; Than Tun 1979)
[17] U Win Maung (Tampawaddy), pers. comm. 08 July 2005
[18] New Light of Myanmar, 05 August 2005
[19] New Light of Myanmar, 27, 30 July 2005
[20] Calo' 2007
[21] Murowchick 2002: 140
[22] Kan Yong 1985: 5, 26
[23] Moore and Aung Myint 1991: 85, Figs. 1, 5; Map 2, 3
[24] Talbot and Janthed 2002
[25] New Light of Myanmar, 30 July 2005
[26] Aung Myint 1969; San Win 1986
[27] San Win 2004
[28] San Win, pers.comm. 03 Auqust 2005
[29] Moore and Than Swe 2007; Moore and Aung Myint 1991
[30] T. O. Morris 1935
[31] See for example Gutman 1976, 2000; Tun Shwe Khine 1992; Shwe Zan 1997
[32] Tilley and Bennett 2001: 336
[33] Tilley and Bennett 2001: 335
[34] Johnsen and Olsen 2000: 429
[35] See Pe Maung Tin and Luce 1923/1960
[36] Khin Myo Chit 1985: 57; Pe Maung Tin and Luce 1960: 8, 13
[37] Moore 2005; Moore and San Win 2007
[38] Tun Aung Chain. 2005: 124
[39] Briggs 1951: 21
[40] Vickery 2004: 8
[41] Kyaw Min 1958: 210-212
[42] Moore 1988
[43] Aung Myint (Forestry) and Khin Maung Myint (Survey). 1969. Myanmar Myo-haung-mya-koh kaung-kin-dhat-pon-hma hnit-phet-shu-let-la-kyin Sa-dan (Ancient cities on aerial photographs). Paper read in the Myanmar Research Congress, 1969
[44] Khin Maung Nyunt 1992: 15
[45] Myint Aung 2002: 11, Luce 1948
[46] Moore 2003: 24; Pautreau 2001, 2002, 2005
[47] Tun Aung Chain 1983: 105
[48] Ministry of Education 2002
[49] Than Tun 2003: 217

The Ayeyarwaddy river at Bagan.
(Photo Myo Nyunt)



Chapter One
GEOGRAPHY

Rainfall and topography

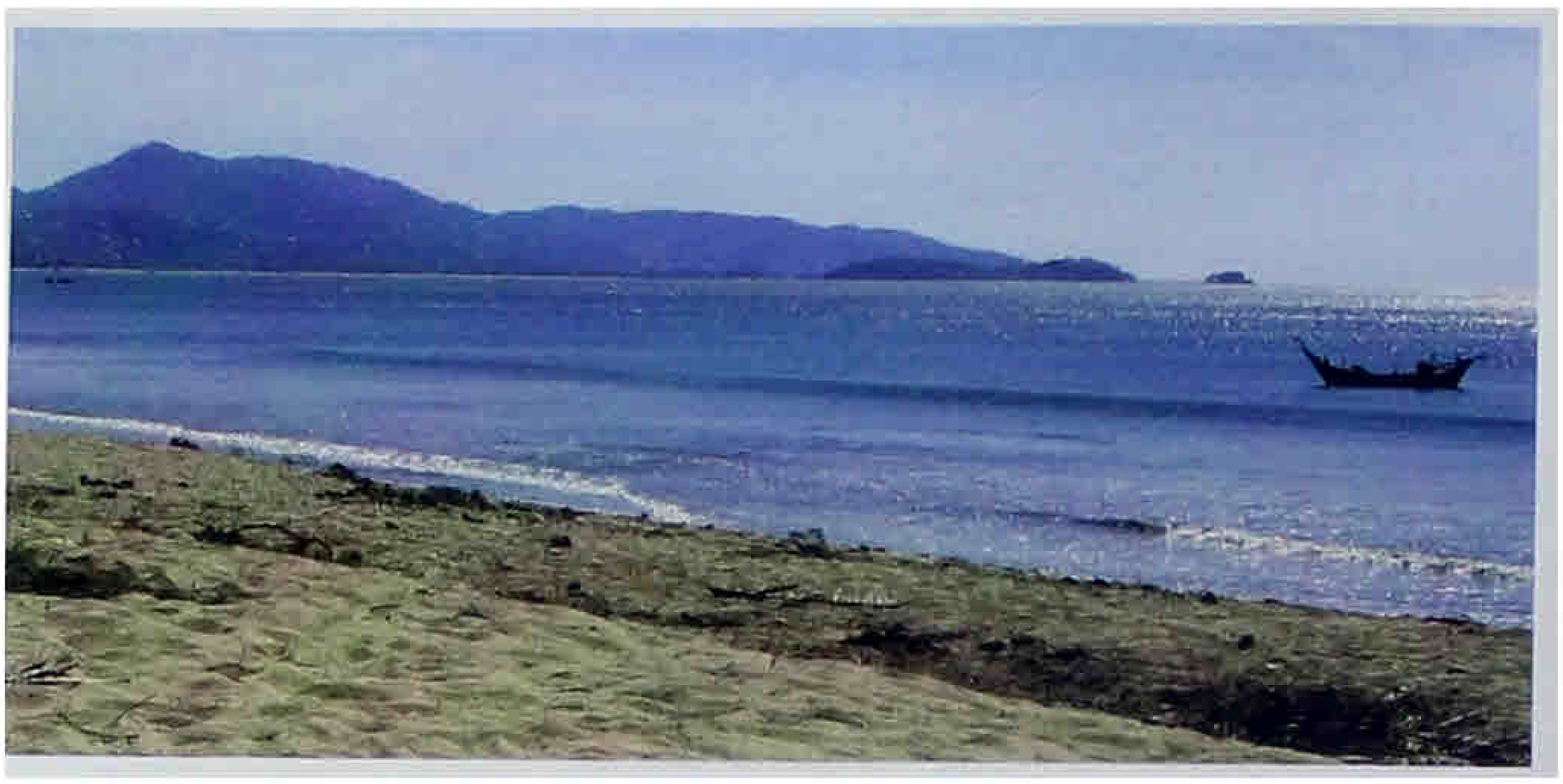
Myanmar, with an area of 677,000 sq km, is about twice as long north to south (2,051 km) as it is east to west (936 km). The Union of Myanmar (28° 31' to 9° 58') includes 135 national races and in 1999 had a population of 48.16 million. The main ethnic groups are the Kachin, Kayah, Kayin, Chin, Bamar, Mon, Rakhine and Shan. The country borders Bangladesh, China, Thailand, India and Laos. Of these, the longest are with the China and Thailand, frontiers over 2,000 km in length. Mountains rim the north, east and west borders, forming a giant horseshoe.[1]

The interaction of the monsoon cycle and mountains (*yoma*) is the most crucial factor for understanding the patterns of early settlement in Myanmar, for while the rivers and mountains are oriented from north to south, the rain comes from the southwest. The seasonal variation explained in the previous chapter, means that about 80 percent of the rain falls between May and September. Monywa, for instance, in the Lower Chindwin often has a water deficiency during eight months of the year. Rain is heaviest in the south and northwest. Thus in Dawei, Tanintharyi Division, the mean annual rainfall is about 5,502 mm but in Monywa it is 795 mm.[2] The chief reason for the scant Upper Myanmar rainfall is the Rakhine *yoma* for it creates a shadow stopping rain from reaching the Ayeyarwaddy Basin. In fact the shape of the basin, an inverted triangle varying from 160 km east to west near Mandalay to less than 20 km south of Magwe, corresponds to the relief of the Rakhine *yoma* so that the basin is widest where the greatest altitudes are found.[3]

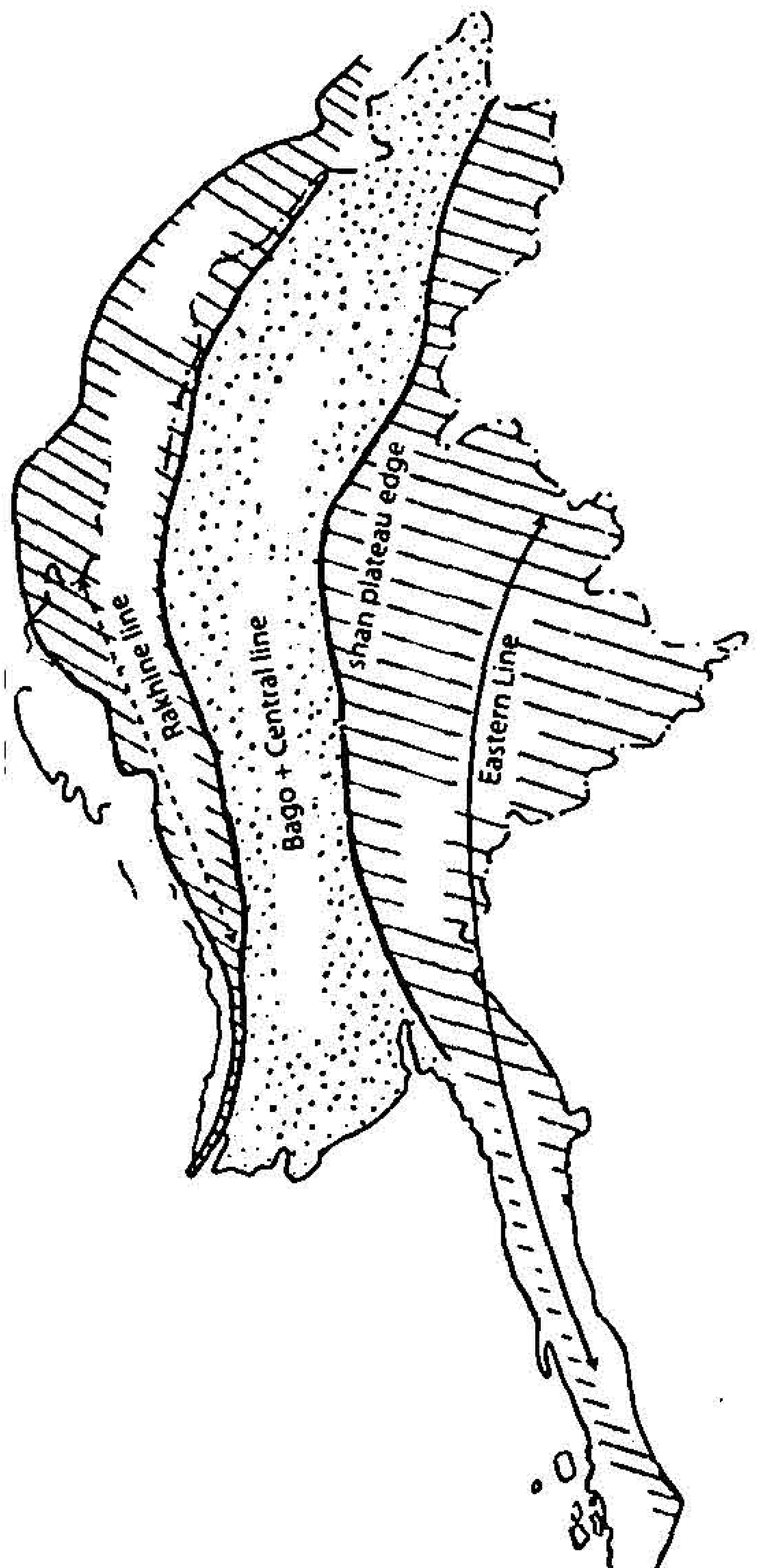
Opposite: Near Mongwa, at Chin Sa Kon, Moegyobyin, Salingyi.

Deep-sea coves such as Nyaw Byin on the west coast of the Dawei peninsula provide safe harbour for fishmen along the coast north of Myeik.

While rich tin and tungsten deposits are found in the short valley north of Dawei, the shoreline along much of the Dawei peninsula is a sandy shore. Alaungsithu anchored in 1155 AD at Maungmagan beach, seen here, its name said to be derived from this visit when the women of the court took advantage of privacy to swim and play.



In short, the rivers, topography and rainfall are closely connected. On this last, Glover noted the importance of the monsoon cycle, for the ever-wet equatorial climates are not well suited to rice and millet. The evolution of these staple crops occurred in temperate monsoon regions with long dry seasons fitting well with the ecology of Myanmar.[4] As with much of the rest of Southeast Asia, the major population densities of Myanmar have been in the alluvial lowlands of the central basin where the contrast between seasons is great. The basin covers a massive area, with Dobby estimating that two-thirds of the country's land surface drains into the Ayeyarwaddy network.[5]



Lines of ancient volcanic activity after Chhibber (1927, 1933). These in turn relate to river formation and soil types affecting habitation patterns.

Mountains and volcanoes

The *yoma* that play such a crucial role in the habitation pattern stem from a loop of fold systems in the west to east Himalayan trend. In the northern Kachin State, mountains such as Hkaka-bo-razi (5,794 m) are snow-capped year round. Htin Aung and others suggest that Tibeto-Burman migrations approached the fertile Ayeyarwaddy floodplain via breaks in the Himalayas on the northwest and the northeast.[6] The Ayeyarwaddy basin is flanked on the east by the Shan Highlands and its continuation in the southern *yoma* of Tanintharyi Division. On the west are the mountains of the western Rakhine coast, with the main basin is divided by the Bago *yoma*. As described by Chhibber, the country's topography can be usefully classified in relation to four north to south lines of ancient volcanic activity: eastern, Shan Plateau edge, central and Rakhine.[7]

Eastern line

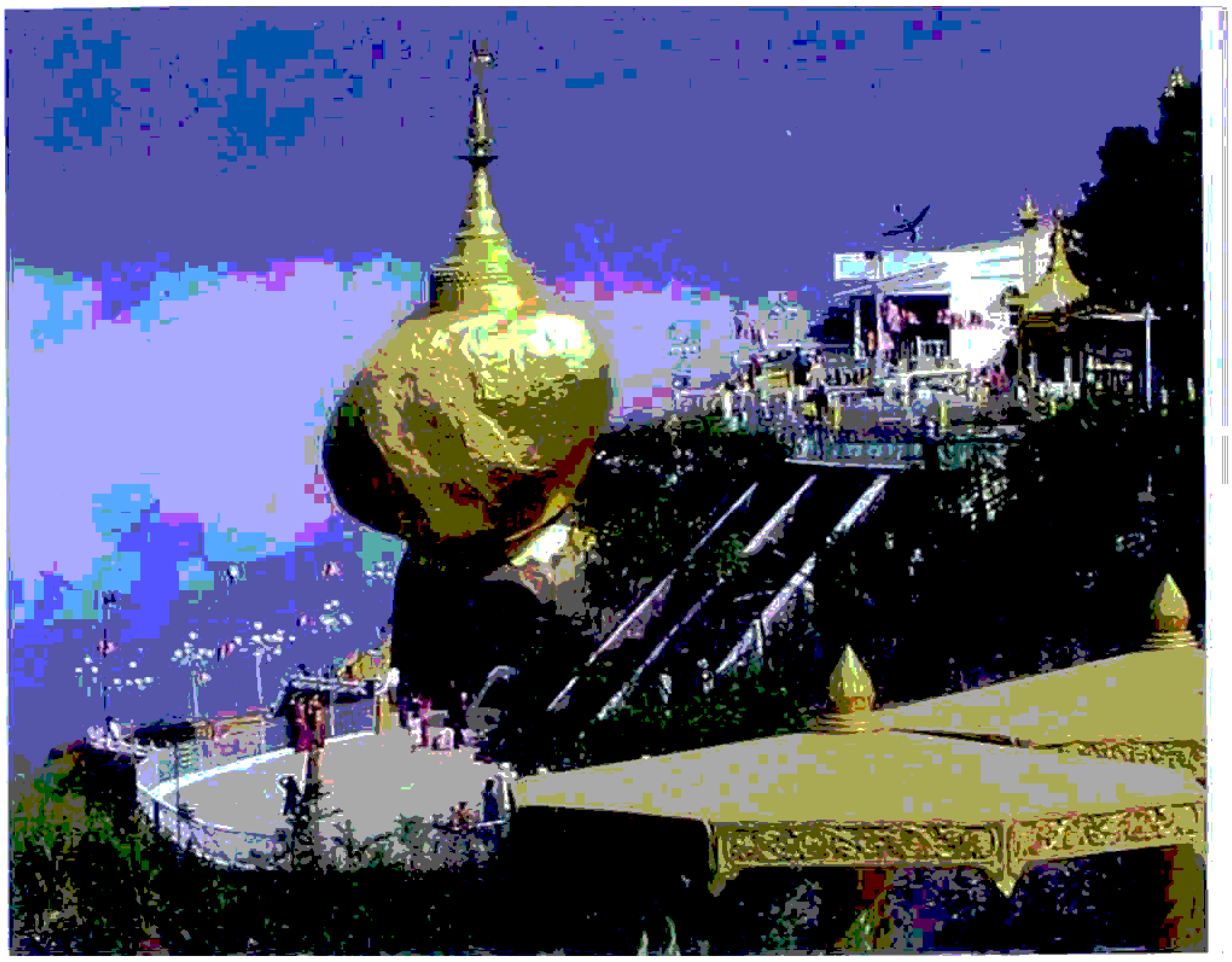
The Eastern Line goes from Yunnan and across the Shan Plateau. It continues south to the Mon State and Tanintharyi *yoma*, with the peninsular extension nearly 1,000 km in length. Some of the Eastern Line volcanoes date to the Early Palaeozoic but it is principally composed of folded limestone, shale and continental beds dating to the Permian to Upper Cretaceous eras. These overlie a complex of gneisses and metamorphic rocks with peaks reaching 1,350 m. The eastern ranges are greatly folded on north to south lines and the region is deeply dissected. Lake Inle in the southern Shan State is a remnant of a once larger body of water and during the Pliocene-Pleistocene other lakes may have been found in the region. The soils

Ayeyarwaddy River at Pyay near Phoe-Oo Mountain where the Buddha Gotama is said to have prophesied the founding of Sriksetra.

The dry landscape of Halin, seen inside the walled area.

The arid Lower Chindwin in the village of Nyaunggan to the northwest of the crater where bronze implements amd polished stone rings were excavated.

Light can be seen between the Kyaikhtiyoe boulder and the precipice upon which it rests. The mass and weight of the boulder argue against its balance. This is explained in legends with Thagyamin (Sakka) miraculously carving a hole for the central post of the *stupa* at the correct balancing point.



are commonly red earth and laterite and the landscape karstic. On aerial photographs of these areas, the breaks and joins of the drainage patterns contrast greatly with the meanders of the delta, just as the dense hardwood and bamboo forests contrast to the grassland of the Ayeyarwaddy basin.[8]

There has been little research on early habitation on the Shan Plateau. However, parallels are likely to long-term adaptation to the subtropical evergreen forest that has been found in Northern Thailand, where small groups were able to shift locales if necessary. As Higham has mentioned, temperature and humidity are more stable under the insulation of a thick tree canopy, and different plant and animals foods were generally available year round with no specific methods needed to obtain them. In Northern Thailand, small groups of hunter-gatherers continued to occupy these niches up to 900 AD and are found today in southern Thailand.[9] Much of the lower Eastern Line area is also a likely locale for early habitation, and as we saw in the last chapter, Neolithic tools have been recovered at Dawei and Myeik. Along this southern portion of the Eastern line, the granite and gneiss *yoma* rise sharply from the thin belt of riceland flanking the Gulf of Muttama. In the Mon State, large granite boulders lie along the foothills, the granites being intrusive formations into earlier metamorphosed sedimentary and limestone series. Many are parallel ranges, some reaching over 2,000 m, divided by valleys where rich mineral deposits such as the tin-tungstens of Dawei are found.

Shan Plateau edge and Rakhine Lines

Chhibber's second line is along the western edge of the Shan Plateau and the southern Yomas. The rock shelters and caves of Badah-lin are part of a broad band of limestone, its composition varying from almost a pure calcite to a true dolomite. More than 1,600 stone artefacts were excavated from Badah-lin, predominantly sandstone and limestone worked from river pebbles.[10] The Shan Plateau edge line is associated with sites in Mandalay and Shwebo districts, as well as near Thaton in the Mon State. There, at Mokpalin, evidence of early activity can be seen in a band of siliceous lava extending seven kilometres to the south. The use of these varied stones can be seen in the range of tool materials at the Mayangon and Hsinbyukyun sites by Thaton.The Mayangon tools, for instance, were made of siltstone, indurated mudstone, slate, sandstone (grewackes), quartzite, rhyolite, and microgranite.

In Tanintharyi Division, the outer islands of the Myeik (Mergui) Archipelago are a continuation of the edge line with much of this activity dated to the end of the Tertiary period. The Myeik islands are some of the highest land and part of mountain building movements that formed the Tanintharyi coastline.[11] The Rakhine line is also along the coast, and like the Shan Plateau edge line, this continues south to the Bassein River in the Maungmya district of the Ayeyarwaddy delta. The mountainous folds of Rakhine, which parallel the shore, are thought to have erupted from the sea bottom as a long narrow island during the late Tertiary.[12]

Central Bago Yoma Line

The Central Bago Yoma line is a relatively recent ridge that divides the lower central basin south of the west bend of the Ayeyarwaddy at Mandalay. The mountains of Popa and Phoe-Oo Taung and Singguttara Hill are other natural features of the Central Line associated with ancient sites. The plug-like crater of Mt. Popa (1,518 m) rises high above the plain southeast of Bagan. Stratified ash-beds at the base of Popa suggest that the area was initially under water, common to a number of Tertiary volcanoes that erupted close to water at a time when the edge of the Shan Plateau formed the western shore line. Other peaks such as the isolated Taunggala just south of Popa are also venerated, with a stone artefacts collected by

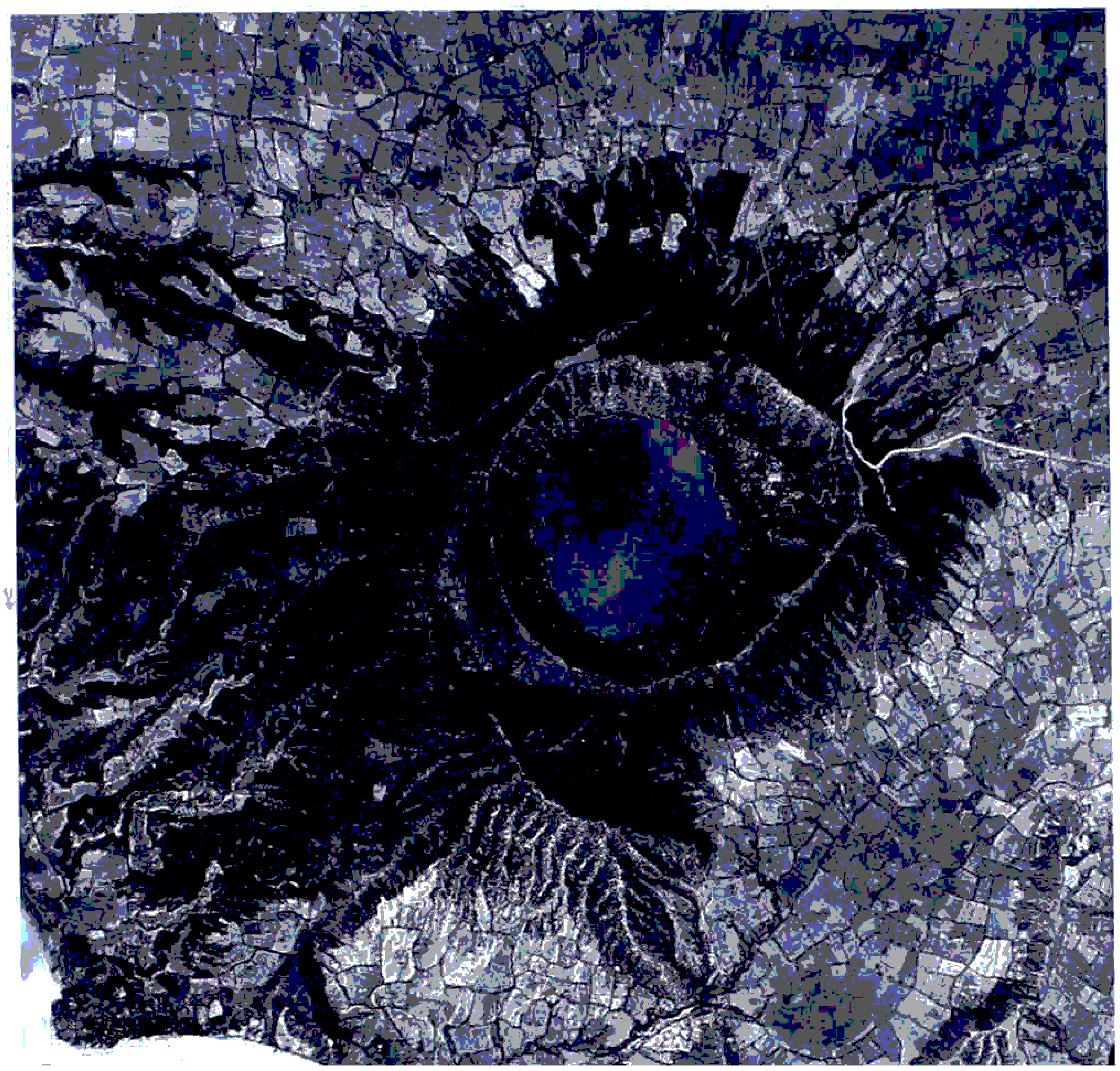
Rice fields flank the rocky foothills of Kelesa Mountain, Bilin Township, Mon State. The ranges are a southern continuation of those crossing the Shan Plateau.

The wide Ayeyarwaddy at Magwe, with areas submerged during the August rains.

Movius and De Terra from the silicified tuff and lavas of the Kyaukpadaung hills. More recently Samon Bronze-iron artefacts have been recorded from Son Gon at the foot of Popa.[13]

Northwest of Popa on the Lower Chindwin, another series of four to five craters is seen, with the narrowing of the river course at this point often related to the volcanic activity. While falling within the Central Line zone, they are described as late Cenozoic.[14] On the rim of one of these craters is the Nyaunggan cemetery. The area is rich in resources, with the Kyisindaung and Letpadaung copper bearing formations found on the opposite bank of the Chindwin River. Further south is Phoe-Oo (270 m) where according to Myanmar chronicles, the Buddha made five prophesies. One was the founding of the Pyu city of Sriksetra, but the others were natural: the emergence of Popa, the rising of the Samon and Samyit, a great lake, and a massive earthquake.[15] Finally, the Shwedagon is built on Singuttara Hill (57 m), a low lateritic spur of the Bago Yoma, making its legendary founding geographically plausible.

There are notable gaps in our understanding of the ecological context for early settlement in the Chin, Kachin and Shan States as well as the Upper Chindwin. A number of polished stone tools, for example, have been found around Homalin close to the border with India, but there has yet to be systematic archaeological exploration of the area. The north to south orientation of ranges in these areas is reflected in the parallel courses the Ayeyarwaddy, Chindwin, Sittaung and Thanlwin. There are a number of other significant streams flowing into these, all of which facilitated the movement of early habitation across the landscape. To date, however, it is along the terraces of the Ayeyarwaddy that most of the archaeological work has been carried out.

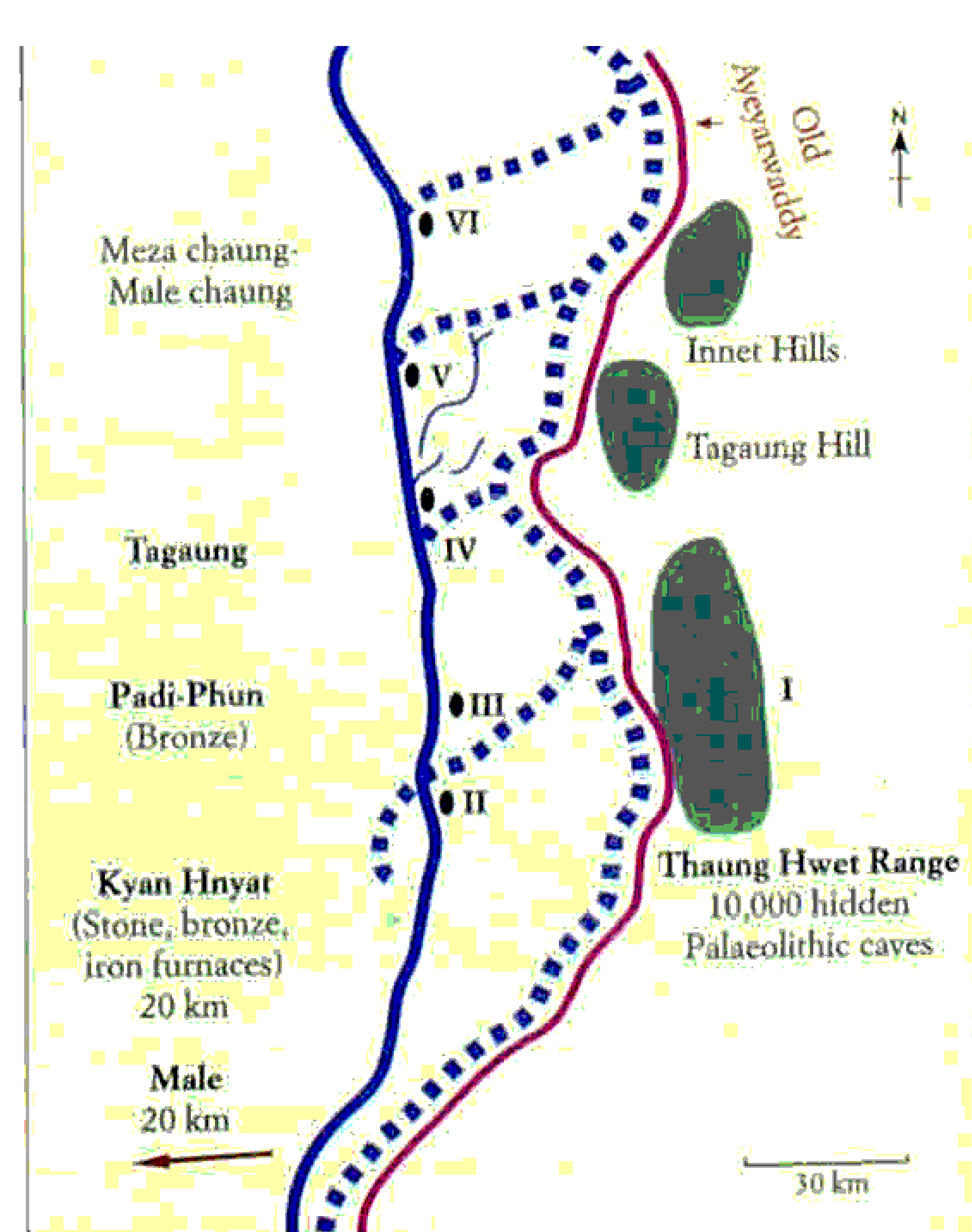


Water fills Twintaung crater, current centre of Spirulina production. Nyaunggan crater lies to the northeast. (1:50,000, 1983)

Ayeyarwaddy terraces and change

The Ayeyarwaddy takes its name from the Sanskrit *erawan* or elephant. The river first rises at the confluence of the Nmai Hka and Mali Hka Rivers north of Myitkyina and south of the Hkaka-bo-razi peak (5,881 m). It turns to the west north of Popa and then flows south to empty into the Gulf of Muttama. Alluvial deposits are thick and fine near the river mouth, with abundant rice grown in this area. In its upper and middle reaches, the Ayeyarwaddy is flanked by the Chindwin and Mu on the west, with bifacial stone axes found along the Mu.[16]

Numerous streams east of the Ayeyarwaddy near Tagaung are thought by some scholars to mark the Old Ayeyarwaddy. These are indicated on the map by dashed lines, with the current course on the west. The centre of habitation (I-VI on map) may have slowly moved north to the area of the walled site (VI). *(Drawing after Win Maung (Tampawaddy))*



Rivers, change and Upper Myanmar stone tool deposition

The Thanlwin has marginally brought Myanmar into recent literature on prehistoric migrations from China into Southeast Asia.[17] The Thanlwin hypothesis links tripod and pedestal pottery forms to a series of sites from Yunnan (Shixia) to the lower Red River valley in Vietnam (Phung Ngyuen), Thailand (Ban Kao) and peninsular Malaysia (Jenderam Hilir). Similar pottery forms have been recovered at sites near the Ayeyarwaddy such as Taungthaman-*in* and in 2005 by San Win west of the Thanlwin at Mayangon, less than five kilometres northwest of Thaton. Geographically, Taungthaman and Mayangon effectively fill in the usual absence of Myanmar in these hypothesis, but Movius and De Terra's 1940s study has until recently been the only one widely circulated. It is likely that further research will see revision of this for a number of rivers in Myanmar offered prime transportation routes and agricultural areas.

In-gyi southeast of Tagaung, Upper Myanmar. Thaung Hwet Taung is ringed by clouds. The name of the mountain ('10,000 hidden') may refer to the caves where Paleolithic tools have been documented, or later tales of troops taking shelter there. It is also linked to the legendary blacksmith, Maung Tin Deh, who later became a *nat* or spirit on Mt. Popa, southeast of Bagan.

There are, however, problems with the very early dates given to some of the stone tools found in the 1940s Ayeyarwaddy study. Given these, and the geological context in which the survey took place, it is useful to review the findings. In the early 20th century AD, surveys to assess the oil and mineral potential of Myanmar were carried out.[18] Some of these yielded stone tools that remain the core collection for the Paleolithic chronology of the country. In the 1890s, Noetling reported the find of a stone tool from Beme that he had recovered from Upper Miocene or Lower Pliocene 'Red Earth' strata.[19] While the tool was clearly manmade, its association with such early strata was questionable, especially since similar surface finds were made as much as 30 metres above the level of Noetling's tool. It was not until the 1930s, with surveys by T. O. Morris, that further finds were reported. This was followed by the American Southeast Asiatic Expedition of 1937-38 under H. L. Movius which collected tools along a 113 km stretch of the Ayeyarwaddy. Aung-Thwin has recently summarised the 30 year debate which followed these discoveries.[20]

The main point of controversy was the association of the tools with the strata deposition, a matter that remains in question today despite the careful documentation of the later larger survey by Movius and De Terra. While geological strata to date Upper Myanmar (*Anya*) stone tools is accepted, the five terraces identified along the Ayeyarwaddy are the result of a complex process of deposition and uplifting. This is particularly true for Terraces 2 & 3 (T2 and T3) of the Upper Pleistocene, a crucial period in relation to Paleolithic and Neolithic settlement. The Ayeyarwaddy terraces reach south to Pyay near Sriksetra, but they are more easily seen north of Magwe. While three of the terraces (T1, T2, T4 and T5) correspond to deposition, T3 was formed by a process of erosion. It is not only the most conspicuous terrace but also where a great many of the stone tools were found.

Three different types of stone tools were found on T3: Early Anyathian-2 in the basal laterite crust, Early Anyathian-3 and Late Anyathian-1 in the mid-layer gravels. These were overlaid by Upper Pleistocene deposits of Bagan silt. As this illustrates, correlating the Anyathian artefacts to the natural processes is complex. Despite the limited survey area and ambiguities in the stratigraphy, the

Anyathian tools appear to be associated with terrace formation during the transition from the Upper Pleistocene to the Post-Pleistocene. As we will see in the next chapter, it is this period of climatic change that is linked to the critical transition from the era of Hunter-gatherers to the Neolithic.

Upper Myanmar river change, *in-aing* and *in-gyi* and habitation sites

The area east of the walled site at Tagaung has many seasonal lakes (*in-gyi*).

In addition to its complex terracing, some scholars argue that the Upper Ayeyarwaddy has shifted its course within the past two millennia. This has been used to suggest that a west wall once existed at Tagaung. At Bagan, Thin Kyi concluded from her study of aerial photography that the west wall had been lost to the Ayeyarwaddy through erosion. Erosion, seismic activity, and movement of the main river bed support an 'Old Ayeyarwaddy'[21] east of the walled area of Tagaung.[22] As we will see in a later chapter, for many years excavations at Tagaung had failed to yield any pre-Pyu evidence, so there was doubt about its legendary status as the birthplace of the country. This view is beginning to change as excavations in 2004 yielded finger-marked bricks and urns. At sites such as Hsin Hnyat and Kyan Hnyat, south of Tagaug, terracotta, stone, bronze and iron implements indicate a succession of locales. These may have moved from south to north, with the last centre being Tagaung.

Change to smaller water courses is another aspect that is a vital part of assessing the first millennium AD site forms. We will see this in Lower Myanmar in relation to the Sittaung, but at Halin and Maingmaw, for instance, the Halin Chaung and Nat Hlyeh Chaung, respectively, although they today cross the walled area, may not have been the same, or even present, fifteen hundred years ago. Constant growth and reduction must also be considered in relation to what is perhaps the most consistent geographical context of Upper Myanmar walled sites, namely lower-lying seasonal bodies of water (*in-gyi* and *in-aing*). The *in-aing* and *in-gyi* were used for fishing by putting up weirs, seasonally dammed and bailed. *In-aing* and *in-gyi*, can be seen for instance, at Halin, Maingmaw, Beikthano and Sriksetra. The walls at these sites were constructed in relation to highs and lows, such as *in-gyi* flanked by streams. These were often paired to naturally circumscribe an area of habitation eventually enclosed by walls. This is an significant point; the over-riding importance of ecology in determining site form is demonstrated by the variation in form, in the integration of the water flow, site and the *in-aing* and *in-gyi*. These seasonal water bodies were adeptly integrated into a range of moats constructed at sites: water moats (*ye kyone*), dry moats (*chauk kyone*), and mud moats (*nyun kyone*). Streams could also be made deeper, to regulate water in arc-like formations.

Several layers of pots, some inhumation urns, were unearthed in the 2004 excavation of Pit T631 at Tagaung. *(Photo: Chit San Win)*

Improvement of these sometimes meant multiplication in cases such as Sriksetra where the combination of higher and lower terrain prompted different constructions. The result was a series of minor arcs, each less than half the eventual total enclosed area. These formed a 'circumference' for a religious and political centre but importantly, the process was not aimed at consummation of an ideal form. Again, the variation in walled site forms in Upper and Lower Myanmar bears out intervention in the landscape relating to the local topography and water sources rather than the construction of symbolic ritual shapes. In this context, the chronicle description of Indra holding the tail of the *Naga* king to delineate a 3 *yojana* perimeter on a 'pleasant level ground' is clearly an apocryphal measurement and terrain description as well, for the walls that remain visible at Sriksetra do not circumscribe level ground,[23] are not a continuos cirde, nor the result of a single act.

The supreme importance of ecological adaptation can be seen also at Beikthano, where the Yanbe and Yin Chaung border the site on the north and south and at Sriksetra, where the Nawin Chaung runs along the north. It is in relation to the seasonal and long-term modification of these and other resources that the step-by-step and repeated construction of walls is best interpreted. Sites such as Halin and Taungthaman incorporate *in-gyi* as natural hydrological regulations were a key factor in site location during earlier periods. A further danger affecting ancient habitation in both Upper and Lower Myanmar was flooding, to which we turn below.

The village of Winka on the northwest flank of Kelasa Mountain. While the degree of shoreline change has not been fully documented along this coast, both Winka and Ayetthema further north were probably once much easier to reach from the shore in the past than they are today.

Sittaung and Thanlwin and Dawei Rivers

Given the danger of flood, walled sites were not located directly on larger streams or rivers. These were used, but generally the smaller and more easily controlled watercourses or *in-aing* were more extensively tapped. The topography and water flow are different in the southern Mon sites and Tanintharyi sites but the general principle remains the same as in Upper Myanmar. The first millennium AD walled site of Thaton, for instance is near but not directly on the sea, and while royal patronage may have included forest monks at the Pa-an caves along the Thanlwin to the east, the walled city is safely located on slightly higher ground at the foot of the Martaban range.

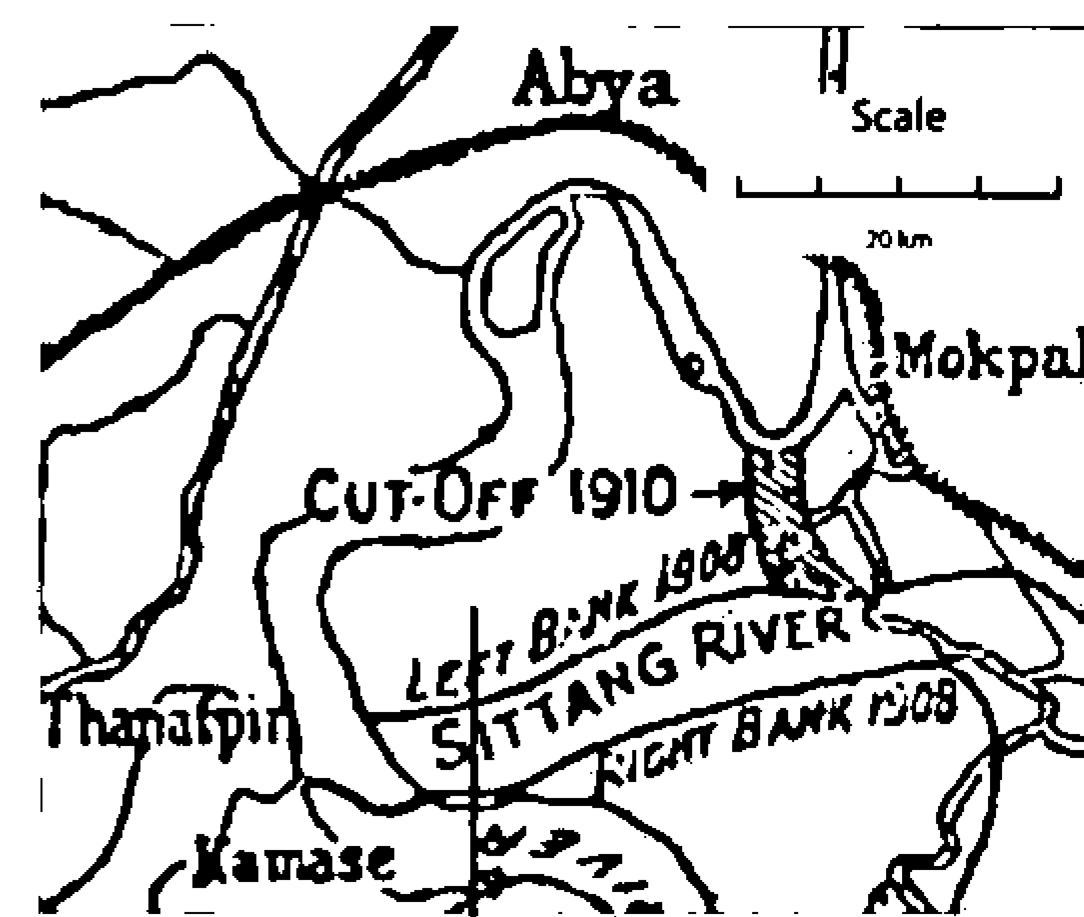
The Thanlwin River rises far to the north on the Tibetan Plateau and its bed has cut deeply along much of its course until emptying into the gulf at Mawlamyine. South of the mouth of the Thanlwin near Mawlamyine and Kyaikkami (Amherst), reefs are found along the coast, whereas further north there are mud flats and mangrove swamps.[24] This suggests the coastline change has been greater to the north of Mawlamyine, in part prompted by the changes to the Lower Sittaung. Chhibber attributes these to the fact that like the Bago River, the Sittaung is no longer a vertically eroding stream. The considerable lateral erosion has resulted in extensive silting and topographic change.

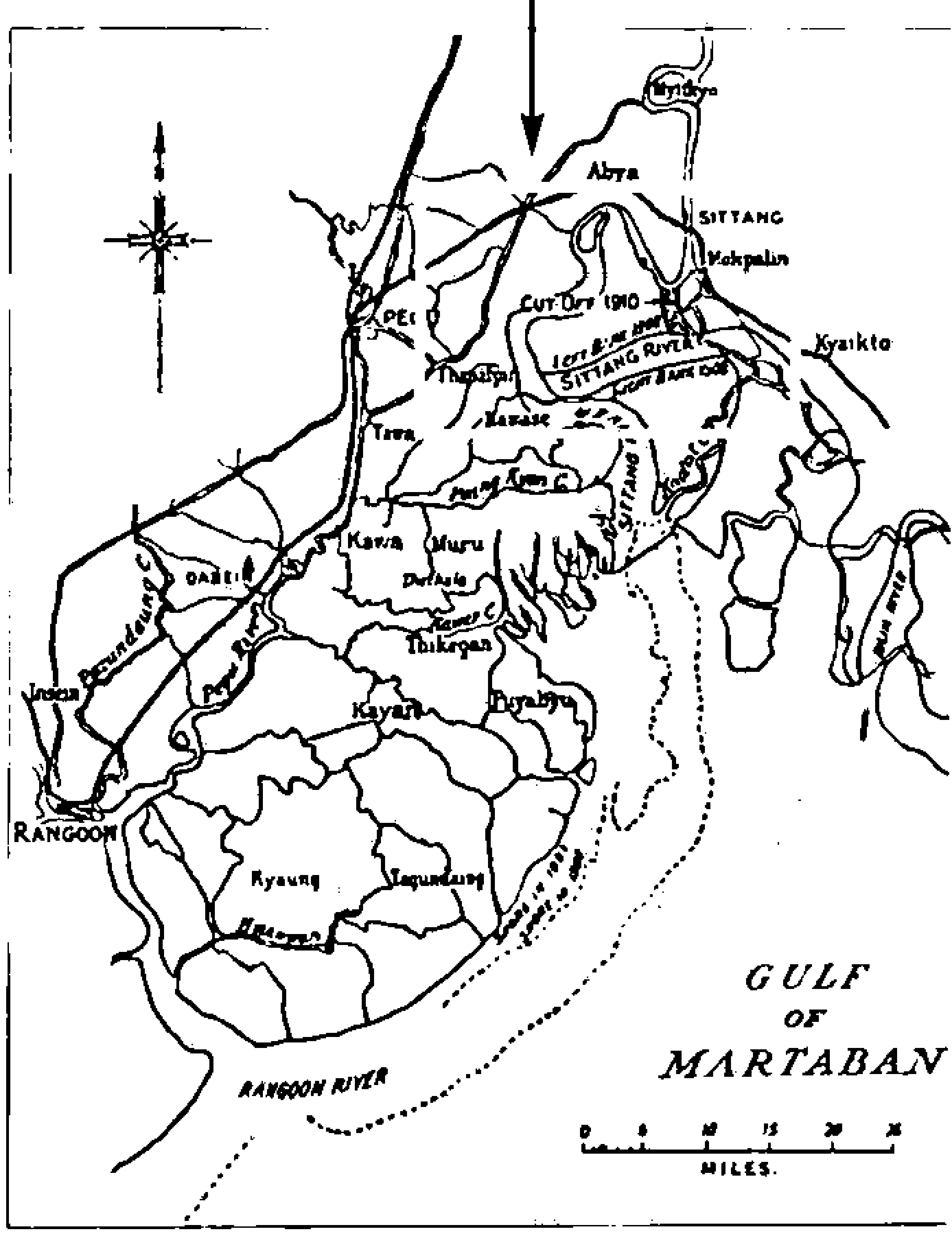
For example, in 1911, the river cut across a long bend northwest of Kyaikto to make a new channel. This brought erosion on the eastern Kyaikto area and additional sedimentation on the Bago side. The river change is significant, so that Kyaikkatha is now virtually on the Sittaung river mouth at the apex of the Gulf of Muttama. Smaller river courses were also affected, so for example, just west of Kelasa mountain, at Winka great amounts of sand have been deposited in the Theh-phyuu-chaung, or 'white sand stream'.

Earlier periods of topographic change around the apex of the Gulf of Muttama are found in epigraphic and chronicle references to *Suvannabhumi*. The fifteenth century AD Kalyani inscription of King Dhammaceti refers to Taikkala (Golamattikanagara) as being half on a hill and half on a plain. U Shwe Naw's chronicle describes Taikkala in detail, being 914 m east to west and 457 m north to south with gates on east, west and north. The town was said to be well fortified: a cliff on the south, boulders on east and west, and earth and rubble structures on the north. Dhammaceti records that Sirimasoka reigned in the time of Asoka when the missionaries Sona and Uttara arrived to *Suvannabhumi*. In U Pyinna's chronicle, after Sirimasoka, half of Taikkala was washed away by the sea. The centre, previously located at the village of Winka by U Pyinna, was then shifted to Thaton.

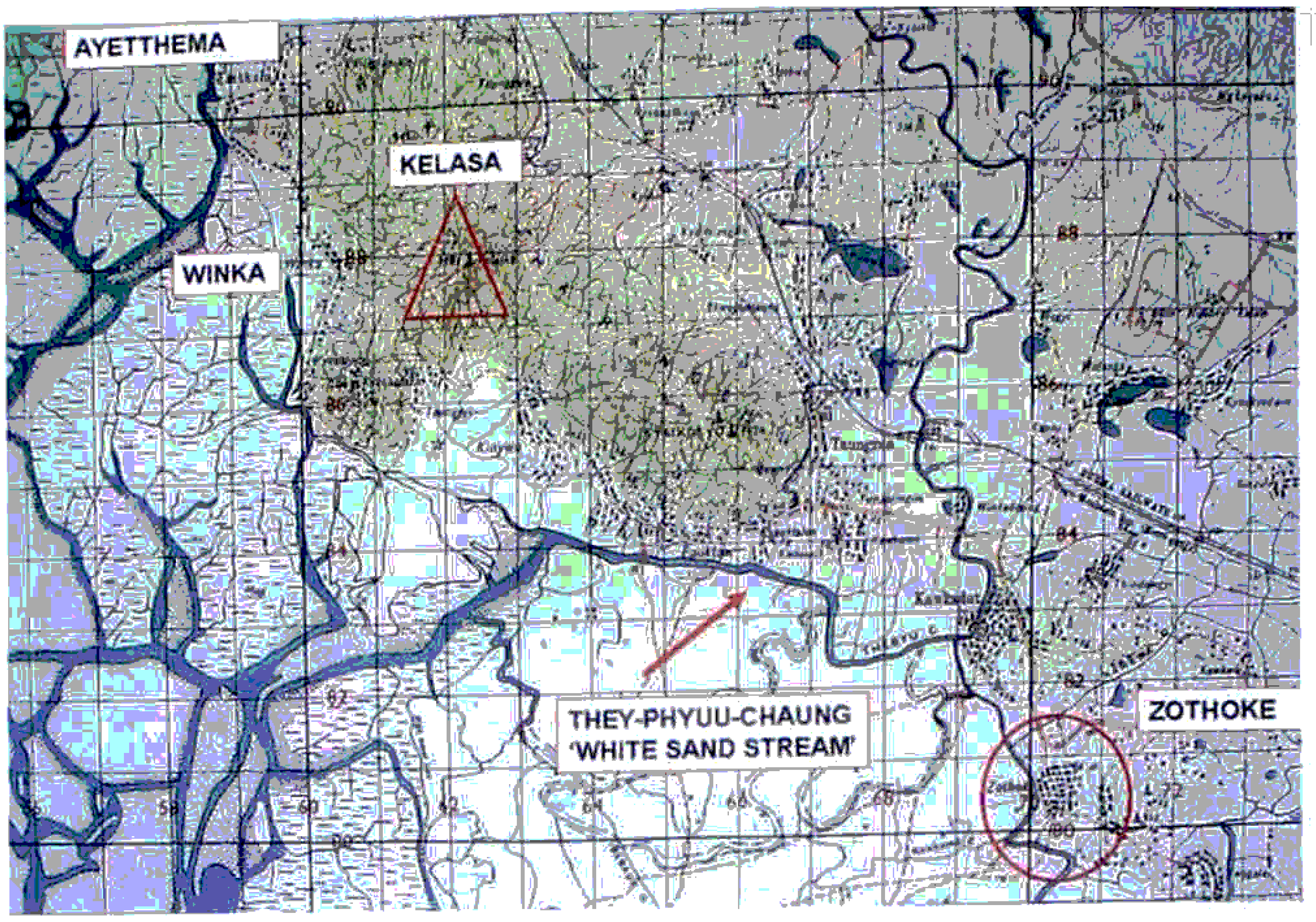
Whatever the exaggerations and inaccuracies of these accounts, they are of interest for landscape elements such as the mountain and boulders as these correspond well to the unusual landscape around Kelasa. Secondly, they bespeak major ecological change of the very sort that would have kept settlements away from the shore. The salinity of the sea flooding would have exacerbated water damage highlighting the need for elevated ground at a distance from major rivers or streams. A final example further south, that of Thagara at Dawei, continues this norm despite numerous topographic differences of Tanintharyi Division.

Dawei is about halfway down the peninsula, nearly the same latitude as Bangkok. Granite mountains flank the city on the east towards Thailand and west in the direction of the Andaman or Kappali (Myanmar for Negrito) Sea. The Dawei River has a short course with a high sedimentation rate. Due to the nature of the underlying rock, it has not formed many tributaries as found around the Lower Sittaung or Ayeyarwaddy. Nonetheless, the river has become considerably more silt-laden over the past one hundred years due to increased mining of its tin and tungsten ores such at Hermingyi, some 40 km northeast of Dawei. The first millennium AD walled site of Thagara, 11.6 km north of Dawei, is set back from the Dawei River with access to the sea over the western mountains. It is flanked by streams on the north and south that provided once provided porterage to the river. These streams are now intermittent or dry as a result of the mining deposition. Thus although in geologically a different setting, Thagara falls within both the location norm of the walled sites to the north as well as the pattern of river change.





Sittaung 1910 cut-off after Chhibber. The area around Bago (Pegu) has been greatly affected by the 1910 cut-off as can be seen by the shoreline change. On the Bilin river bank as well, many small streams are both eroding and depositing sediments.



Kelasa Mountain after One inch map series. The 'White Sand Stream' south of Kelasa and the many smaller watercourses to the west mean this area is now farther inland than it was one thousand years ago.

Summary

Myanmar is characterised by an overall north to south orientation of mountain ranges (*yoma*) and rivers within a landmass twice as long as it is wide. Monsoon winds bring dry cool air from the northeast from October to April, and rain from the southwest from May to September. Due to the southwest Rakhine ranges, little rain reaches the Central Basin. The basin is flanked on the east by the Shan Plateau edge and Eastern Line. Little archaeological work has been carried out in the northern part of the Eastern Line of the Shan Plateau, although Hunter-gatherer forest adaptation akin to that of northern Thailand is likely. Both the Eastern Line and the Shan Plateau edge extend south into the administrative districts of the Mon State and Tanintharyi Division. To the west, the Central Basin is divided by the Bago yoma, a low range associated with a number of archaeological sites and related mountains such as Popa, Phoe-Oo Taung and Singguttara Hill.

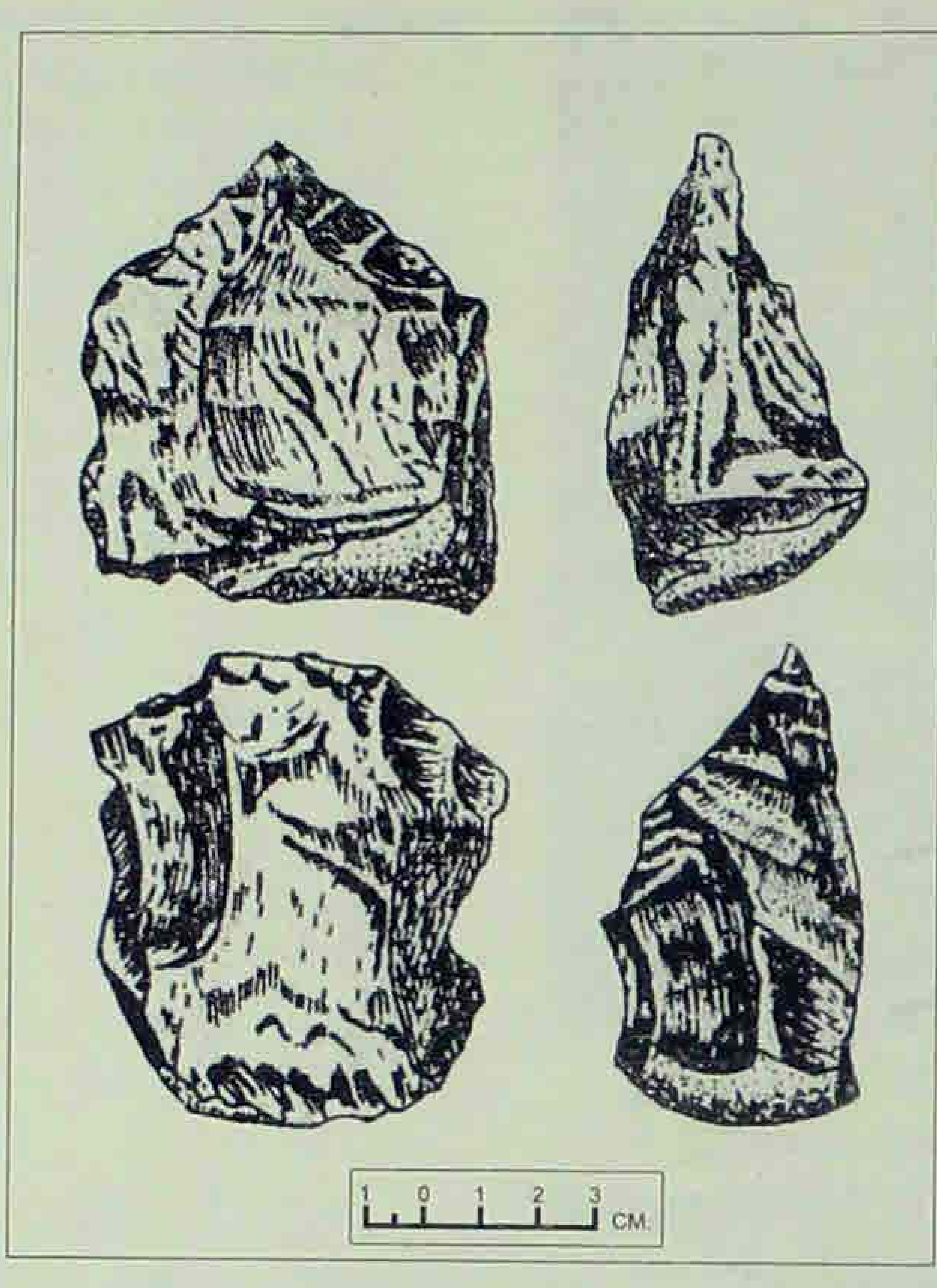
Paleolithic and Neolithic artefacts are abundant in the Central Basin. Anyathian stone tools collected in the 1940s in conjunction with geological survey of the Ayeyarwaddy terraces provide the main data on Paleolithic occupation broadly dated to 30,000-100,000 BP Dates of 6000-12,000 BP have been obtained from caves such as Badah-lin along the edge of the Shan Plateau and also to the south at Wainpola in the Kayin State. In addition to complex terracing, the Ayeyarwaddy has altered its course over the last two millennium. This combined with tectonic activity, erosion and sedimentation may have eroded the west wall of Tagaung and Bagan. If so, they conform to a general norm that due to the danger of flood from major rivers and streams, all first millennium AD sites are located on smaller tributaries. This holds true for the most well documented walled sites of Upper and Lower Myanmar.

The moats and walls of these sites were built over time in relation to the local topography and water sources. These included streams as well as seasonal *in-gyi* and *in-aing* generally tangent to the walled area. The joining of often-reconstructed arc-like segments resulted in the walled forms remaining today, but as we will see in subsequent chapters, the construction of numerous sacred and apotropaic elements flanking the exterior of these walls belies identification as Indic-cosmological symbols rather than survival mechanisms. The walled domains marked the establishment of Hindu and Buddhist communities, but the guiding principles remained those of earlier periods of habitation – ecological adaptation, seen initially in resource exploitation and later augmented with large-scale alteration of the landscape.

Sites further to the south near the coast had the additional problem of flooding from the sea, and are likewise near but not directly on the ocean. However, as with the Upper Myanmar, rivers such as the Sittaung have undergone considerable change even within the last 100 years. This, for example, has affected Kyaikkatha as well as Winka and Ayetthema around Kelasa in the Mon State. The southern coastline has also altered, so that both Kelasa and Thaton may well have been first millennium AD ports of call in a regional trading network. In the southernmost area of Myanmar, Tanintharyi Division, Neolithic and walled sites such as Dawei and Thagara were protected from the Andaman Sea by a range of mountains. However, like sites to the north, they are located away from the Dawei River. Due to differences in the underlying rock and soil, the Dawei River has not meandered to form new channels as seen with the Sittaung and Ayeyarwaddy. However, deposition of sediments from mining activity has meant that some of the few tributaries, such as those flanking Thagara, are now intermittent or dry. As we will see in the next chapter, there has been little exploration of the coastline in relation to hunter-gatherer adaptation. However, like the forest areas of the Shan Plateau, analogies to Thai sites, in this case Lang Rongrien near Krabi suggest that further research on early Hunter-gatherer and Stone Age occupation would be fruitful.

FOOTNOTES

1 MOFA 2004
2 Khine Khine Tun 1993: 8
3 De Terra and Movius 1943: 275
4 Glover and Bellwood 2004: 9
5 Dobby 1950: 154
6 Htin Aung 1967: 3
7 Chhibber 1933: 75-100, 1927: 170
8 De Terra and Movius 1943: 271, 274-5, 278, 387
9 Higham 2002: 54
10 Aung Thaw 1969: 11, Myint Aung 2000: 2; Nitta 1987: 161
11 Chhibber 1933: 85,87
12 Chhibber 1933: 98; Dobby 1950: 148
13 Chhibber 1927: 172-3, 1933: 91, 99; De Terra and Movius 1943: 341-93
14 Hutchison 1989: 225, Stephenson and Marshall 1984
15 Pe Maung Tin and Luce 1960: 7
16 Myint Aung 1981
17 De Terra and Movius 1943; Higham 2002: 110, 2004: 51; Sorenson 1972: 497
18 Chhibber 1927
19 Noetling 1897; Pascoe 1912
20 Aung Thwin 2001: 10-11
21 Thin Kyi 1965
22 Chit San Win 2004; Moore 2005; New Light of Myanmar 2004; Win Maung 2005
23 Pe Maung Tin and Luce 1960: 14
24 Chhibber 1933: 131
25 Chhibber 1933: 32
26 San Win 1986
27 Myint Aung 1999: 21-2
28 Myanmar Language Commission 1993: 23
29 Moore and Than Swe 2007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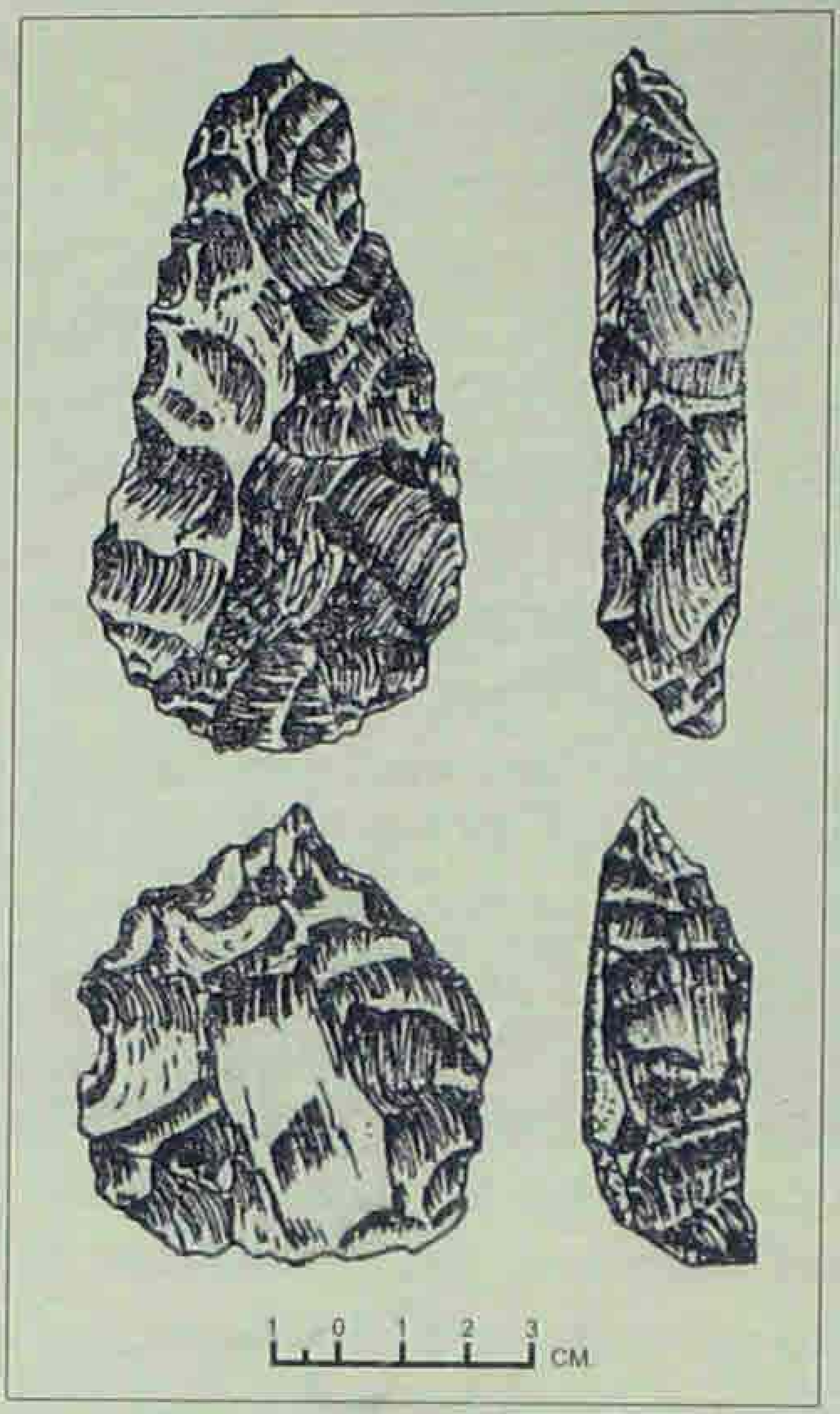
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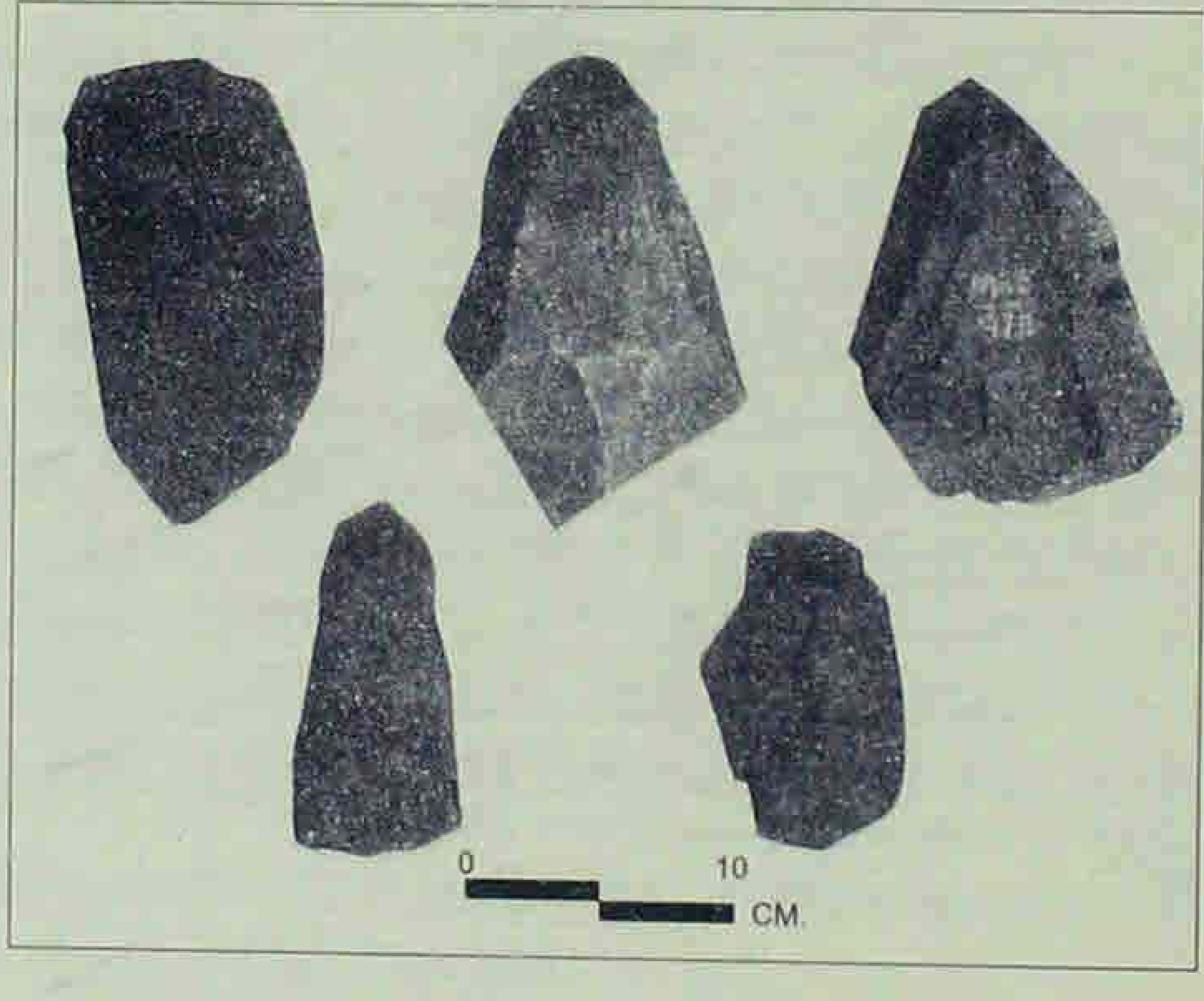
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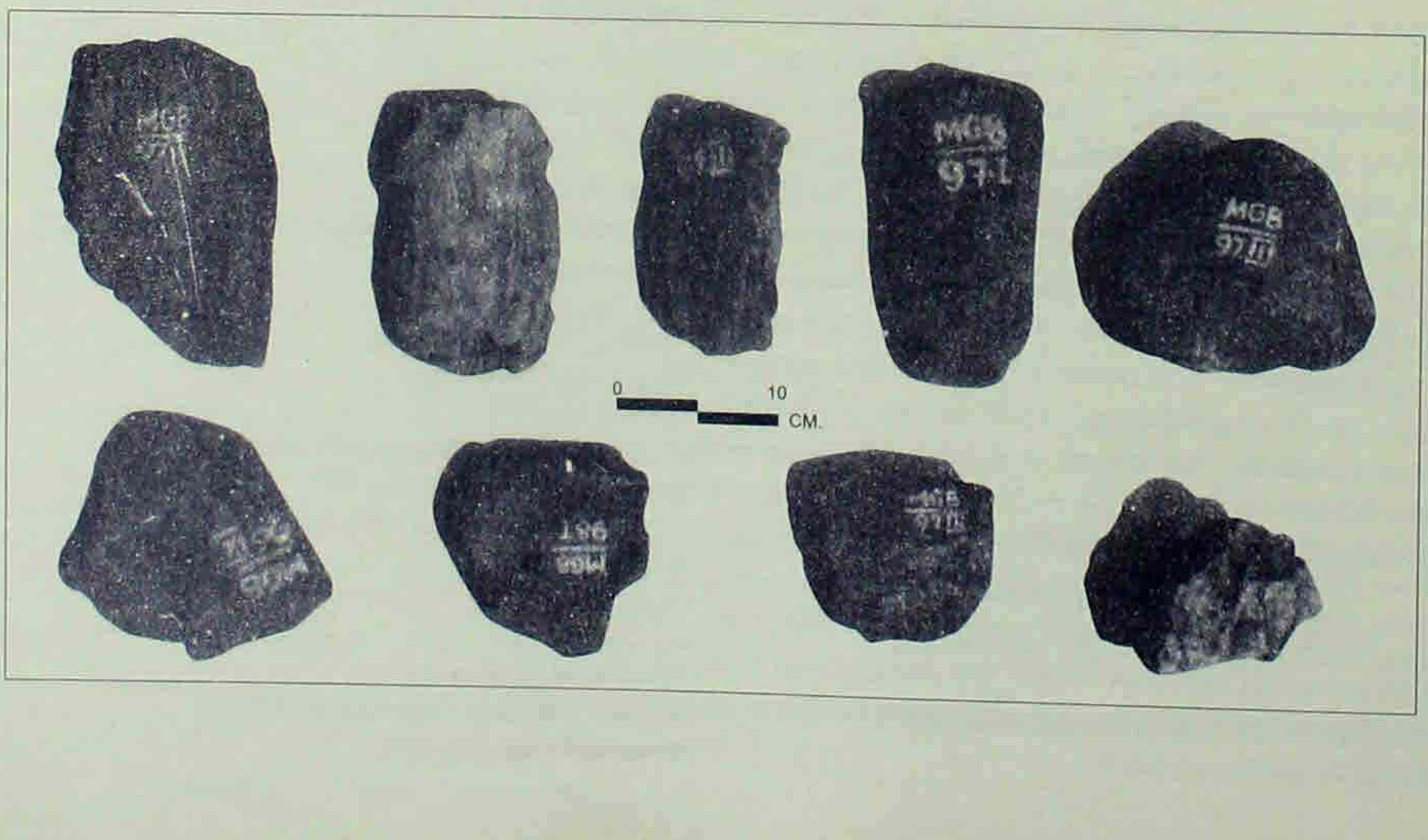
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Chapter Two
HUNTER-GATHERERS

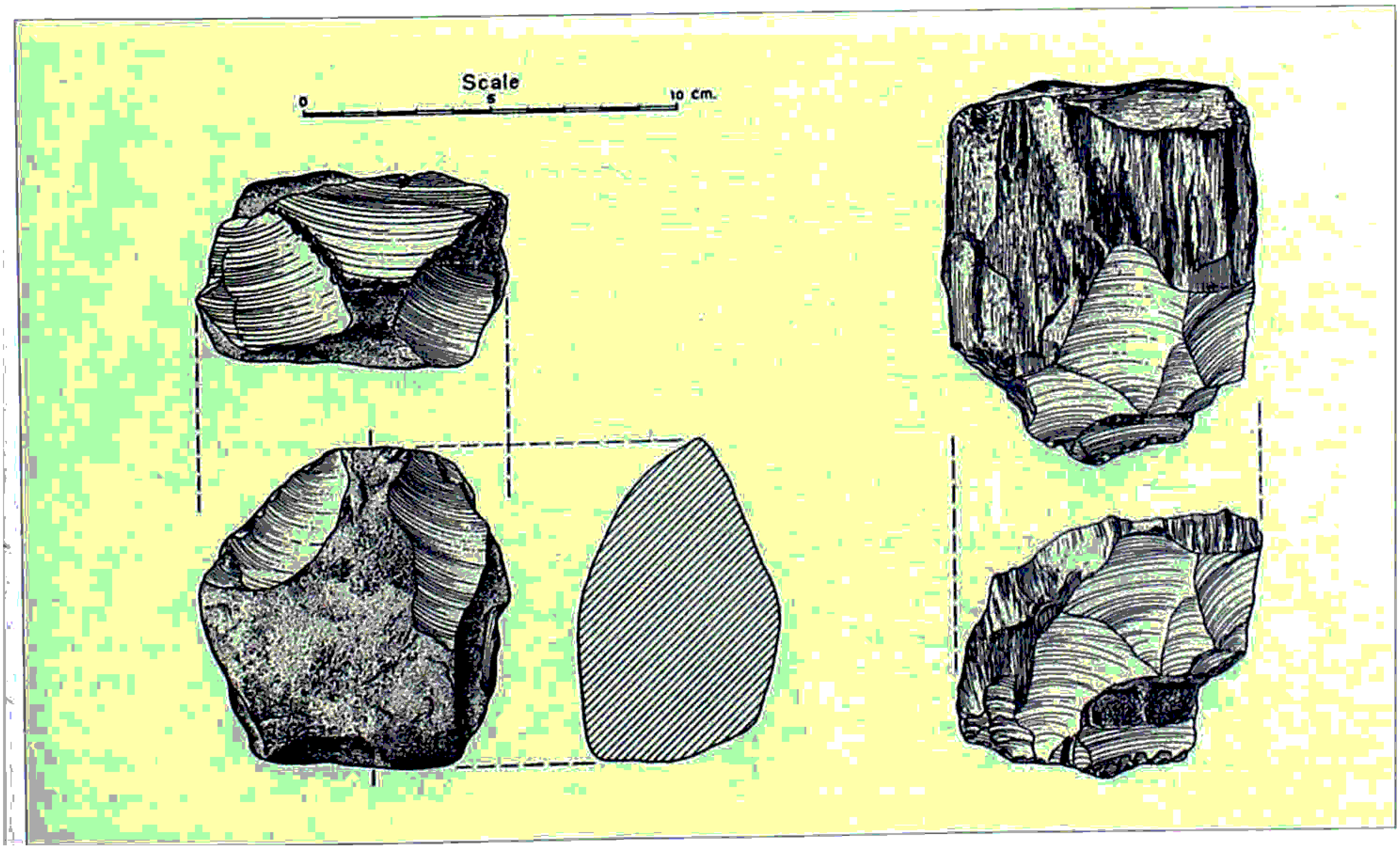
Location sites and pottery

Stone tools of the Anyathian or Upper Myanmar culture introduced in the last chapter, have been dated to 750,000 to 25,000 years before present based on their relationship to the Ayeyarwaddy terraces. While the early dates seems inflated, the Anyathian locations do resemble sites such as Ban Mae The and Ban Don Mun, near Lampang in northern Thailand where the tools also dated by geological strata to *circa* 700,000 years ago.[1] In fact, few open-air hunter-gatherer sites have been detected in Southeast Asia with most material has come from seasonal groups occupying rock shelters and caves.

However, as Higham has noted, even early coastal hunter-gatherer sites have pottery, so it is pottery type rather than occurrence that can be used to distinguish hunter-gatherers from settled communities of the Neolithic. Further complicating the picture, elsewhere in Southeast Asia, pottery and polished stone implements have been found at some late context sites.[2] While inland sites can be difficult to identify all over the region, in Myanmar there is little data on any pottery associated with stone tools. As a result, our discussion here is limited to a hunter-gatherer to Neolithic distinction based on the presence of polished stone tools and rings.

Opposite
Top: Mu Survey Tools.
(After Myint Aung 1981)

Middle and bottom: Moegyobyin choppers and hand axes.
(After Tha Tun Aung 2000)



Stone tools typical of the Anyathian culture of Upper Myanmar.
(After Movius and de Terra 1943)

Another problem in understanding Hunter-gatherer settlements regionally is the loss of coastal evidence due to changing sea levels. Prime coastal hunter-gatherer sites included estuaries and mangrove habitats, the areas most affected by changing sea levels. For instance, some 10,000 years ago these were 40-60 metres below the present levels. Then 2,000-4,000 years later (8,000-6,000 BP), the sea rose relative to the present level, some –12.8 to +1.2 m. Between 5,000-4,000 BP, sea levels appear to have been 2.5-5.8 metres above the present ones, with dates derived from raised beaches formed during this period.[3] Some 4,000 years ago, the sea levels fell again.

Nonetheless, exploration of cave sites at Lang Rongrien (9.13° x 98.53°e) near Krabi on the west coast of Thailand, have yielded material showing habitation over at least 25,000 years. Finds from excavations in this area – just south of Myanmar – included well-made flake and core tools in Pleistocene contexts, as well as material such as pottery and polished adze/axe blades post-dating the post-Pleistocene sea level maximums some 6,000-5,000 years ago.[4] The Myanmar coast on the Gulf of Muttama and the Bay of Bengal may have changed somewhat but the geology of Tanintharyi Division suggests less alteration along this shoreline. Many delta areas in Southeast Asia, however, were inland seas between roughly 7,000-1,000 BP. Other studies have shown that during this period, the deposition of clay in these shallow brackish areas was considerable, with some 14 metres recorded in the area of Bangkok.[5] As we saw in the last chapter, it has been shown in that in a number of areas, such as the Lower Sittaung, change is more recent and involves erosion as well as deposition.[6] However, data is not available to compare the Gulf of Muttama to the Gulf of Bangkok. Indeed, however, all of the southern Myanmar coast, and especially some of the mangrove-lined areas and near-shore islands are viable candidates for hunter-gatherer habitation.

Many polished stone tools such as these from Winka *(top)* and Hsin Byu Kyun *(below)*, Thaton, are from sites probably once closer to the coast.
The different types of stone used for the tools underlines the need for further research on prehistoric settlements in Lower Myanmar.

Hunter-gatherer surveys and sites

	Location	Township	Division	Tools	Dates
Ayeyarwaddy survey	20-21°30' N, 94-96°E		Mandalay, Sagaing, Magwe	Anyathian (Early Paleolithic), Neolithic	750,000 - 25,000 BP
Badah-lin	21°06'N, 96°18'E	Ywangan Taunggyi	Shan	Late Anyathian (Hoabinhian)	12,000 - 6,000 BP
Mu River survey	21°45' - 23°N,95°E	Shwebo	Mandalay	Late Anyathian	30,000 - 20,000 BP
Htaukmagon-Moegyobyin	22°N, 95°04'E	Salingyi	Sagaing	Anyathian, Neolithic	500 BC (?)

Periods and typologies

The stone tool-using cultures of Southeast Asia have been discussed using a number terms.[7] In some cases, the discussion is of Palaeolithic and Neolithic, in others 'Hoabinhian' and 'Basconian' are employed. Inland tools often called Hoabinhian after Colani's type-site in Vietnam are generally flaked rather than polished and are unifacial or bifacial. Myint Aung, for example, uses Hoabinhian to describe the Badah-lin material, noting that Badah-lin, Spirit Cave and Hoabinh are all within a similar latitudinal belt and share upper layers with numerous animal remains. Aung Thwin has defined Late Hoabinhian in relation to cultivation, the domestication of some animals and, where pottery is found, but metal is not yet present.[9] Given the scarcity of data on tool usage or pottery as well as comparative studies, Early and Late Paleolithic are used here to describe Anythian and Hoabinhian implements.

Myanmar archaeologists also use 'Mesolithic', at times to describe a Palaeolithic to Neolithic transition or else the production and use of microliths. This usage was triggered by Movius and De Terra's survey as they found no Middle Palaeolithic material. To show that all stages of lithic production were indeed present, Myanmar scholars have identified Mesolithic tools. These were all discovered after Movius' time but nonetheless the Anyathian finds remain the more widely published reference so this variety is rarely discussed.

A further complication arising from Movius's classification was the absence of hand axes. T. O. Morris, a geologist with Steel Brothers, assembled a collection of some 300 tools, including axes, wedges and chisels. As Aung Thwin has noted, Morris' 1930s publications on these in the *Journal of the Burma Research Society* valuably give names of collectors of the time and where they donated their pieces. In his tools donated to the British Museum, Morris identified hand axes. However, when the British Museum tools were examined by Movius, Helmut de Terra and P. de Chardin Teilhard, they maintained that no hand axes were present.[10] The Mesolithic and hand axe debates were two of the main catalysts for Myint Aung's survey of the Mu River valley in the late 1970s.

Movius also recorded a number of polished tools and stone rings, which he called 'Post-Anyathian'. 'Neolithic' has been used here as polished tools and rings are widespread unlike the Anyathian tools which are principally in the middle Ayeyarwaddy basin. In the next chapter, we discuss the Myanmar Neolithic in relation to Yunnan (*circa* 4,000-1,000 BC) although the Neolithic and early metal chronology can be ambiguous there as well. For example, an initial agricultural phase of the Late Neolithic from a Yunnan site near the Myanmar border has been dated to *circa* 1,000 BC. However, Chalcolithic sites such as Haimenkou in the Lake Er Hai region are somewhat controversially dated to *circa* 3,500-3,000 years before present.

Anyathian tools

In the few survey reports of the Chindwin, most of the materials found along the Ayeyarwaddy also exists along the Chindwin.[12] To date, however, there has been no systematic excavation yielding Anyathian tools. Thus the earliest stone tools in Myanmar have only been found along a limited span of the Ayeyarwaddy. Six types were defined by Movius: Early Anyathian 1, 2 and 3, Late Anyathian 1, 2 and Post-Anyathian (Neolithic).

Early Anyathian 1

Early Anyathian 1 tools are associated with the lateritic gravels of the Middle Pleistocene, found in T1 (Terrace 1) to the east of Sale, at Chauk, and in the Magwe lateritic gravels. Only 23 Early Anyathian implements were recovered, 17 made of fossil wood, five of silicified tuff and one of quartzite. As this suggests, fossil wood was one of the predominant materials used by the Anyathian culture. Most of these had a few flakes removed from one face of chopper-chopping tools and steep ended hand-adzes. There are some additional edge chips although these are attributed to use, with no evidence of retouching.[13]

Early Anyathian 2 & 3

The Early Anyathian 2 tools, also dated to the Middle Pleistocene, typically have a ferringous desert varnish. Both fossil wood and tuff tools were recorded, with those of fossil wood being very similar and so divided into two groups based on stratigraphy. A majority of the Early Anyathian fossil wood tools were single-ended hand-adzes, either steep-ended or double-ended. The ends of 15 pieces were inverse. There were also a variety of scrapers and chopping tools including those with rounded edges, single and double-ended, pointed double-sided, and a 25 cm long pick-like implement. Out of the 261 Early Anyathian tools, 143 were single-ended adzes, 35 single steep-ended hand-adzes, 35 double-ended hand-adzes, 21 chopping-tools with rounded edges, and the remainder a variety of adze and chopping tools.

Like the fossil wood tools, those of tuff were worked on tabular or round pebbles. Choppers included some flaked only on the upper surface and long triangular (23.5 cm) and pick-like (20 cm)

Among the paintings on the upper walls and celing of Badah-lin were bison, a long figure sometimes called a fish skeleton and a pair of hands. The small figures are today faint with additional paintings documented in rcent surveys.

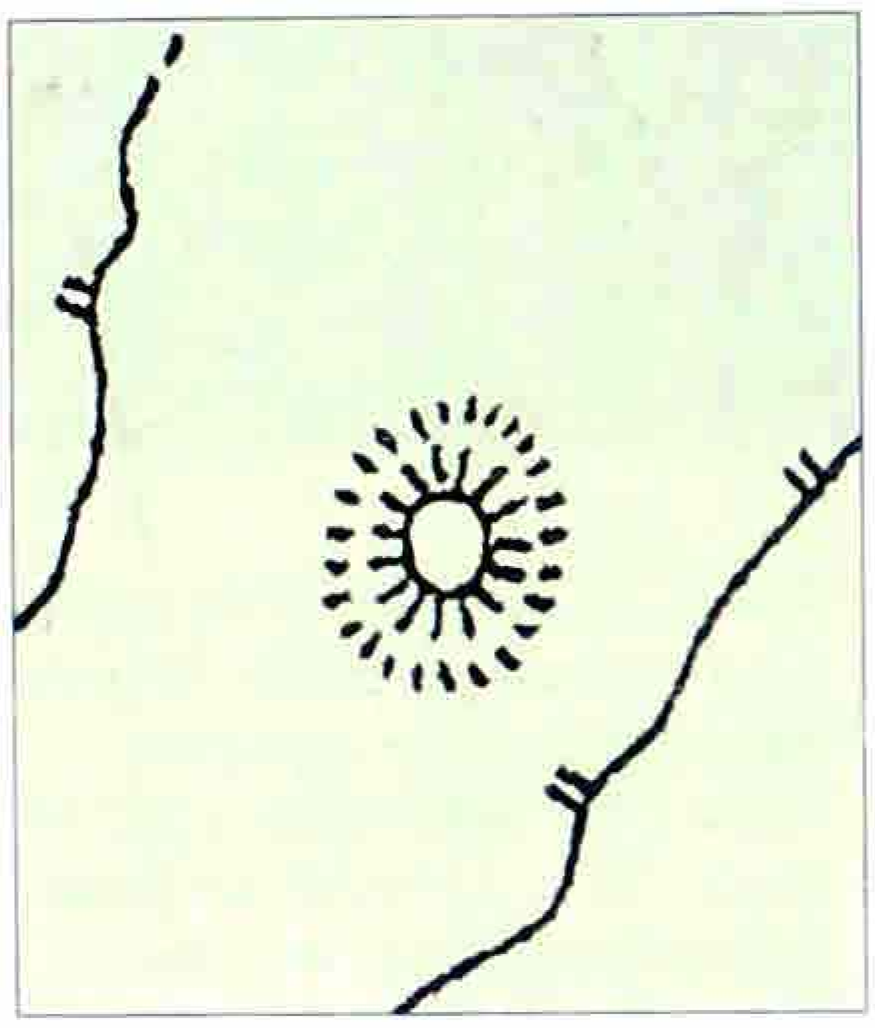
pieces. Out of 220 silicified tools recovered from Yenangyang (191) and Chauk (28), 33 tools were flake implements. Other forms included slight variations in choppers and adzes on tabular or oval cores. Within the Early Anyathian tuff tools, Movius called chopping tools with edges alternately flaked on one side the 'type implement of the Lower Palaeolithic'.[14]

Late Anyathian 1 & 2

Late Anyathian 1 tools were less rolled and with a lighter colour such as tan and light blue, with 14 of the 16 tools collected of silicified tuff, not fossil wood. The 150 Late Anyathian 2 tools collected were limited typologically, a trait attributed to the use of fossil wood. Like the Late Anyathian 1 tools, the Late Anyathian 2 tools were less heavily patinated than Early Anyathian examples. Various types of hand-adzes were distinguished: scalloped edge, small steep-ended, double-ended and side-and-end scrapers, flake tools, and cores. In general, the Late Anyathian finds were differentiated from the Early Anyathian by their smaller size, and often being made from flakes. Although often smaller, they were still dominated by hand-adzes. Certain types disappear in Late Anyathian, such as inverse double-ended hand-adzes. Likewise, some new forms are introduced, such a fossil wood flakes and small, oval, semi-bifacial choppers.[15]

Mu Valley survey

Following a lull during the 1940s and 1950s, De Terra and Movius' survey was followed by excavations at Badah-lin and Letpanchibaw in the late 1960s. However, the material closest chronologically to the Anyathian tools comes from the Mu valley located between the Upper Ayeyarwaddy and the Chindwin. As we noted, Myint Aung



The visible images on the ceiling at Badah-lin are small, with others probably not yet detected.
(Drawing after Aung Thaw 1969, 1971)

undertook survey there in Kawlin-Wuntho Townships, Sagaing District during 1975 partly to address the absence of hand axes and Upper Palaeolithic material in Movius' survey.

More than 100 tools were collected along the Mu terraces from Late Pleistocene gravels dated to approximately 10,000 BP. The finds were generally smaller than those of the Anyathian copper-chopping tools and were worked from flakes rather than cores. The flakes were not rolled, and no evidence of secondary working was detected. Most of the tools were scrapers made from siliceous stone found intermixed with fossil wood chips and gravels. These included scraper-cum-points, possibly used for scraping tree bark, animal skin, or wooden and bamboo shafts. Myint Aung's suggestion of woodworking followed that of Morris in the 1930s, a question also discussed by Bannanurag in relation to tools found in Thailand.[16] Based on the smaller size and more skilful working than the Anyathian tools, Myint Aung placed the Mu bifacial finds in the Upper Palaeolithic. He also posed the as-yet unanswered question of how the different size and finish of the tools reflected environmental differences between the Mu and the Ayeyarwaddy. Chronologically, the Mu tools are close to the Badah-lin material, also the rough time period of Thai sites at Ai-Yok and Spirit Cave as well as surveys around Mae Hong Son.

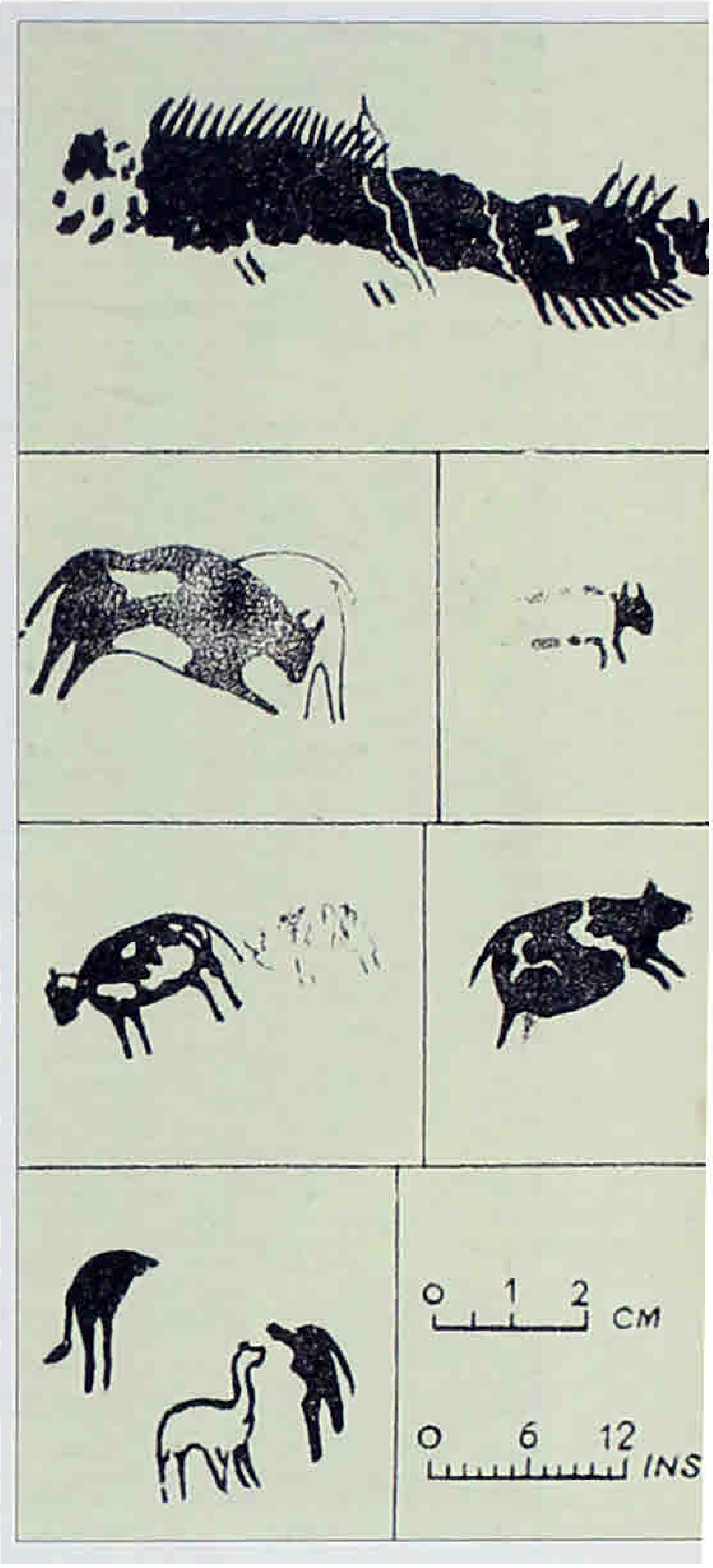
Badah-lin cave and rock shelter

Badah-lin is near Taunggyi, one of a number of caves and rock shelters located in the submontane limestone belt on the Shan Plateau edge. The caves are some 300 m above sea level, within a limestone belt, with peaks to the east rising more than 1,350 m. Over 1,600 tools were recovered during the 1969 excavations by Aung Thaw. Of these 422 were chosen for study, with many of the others buried at the site.[17]

The tools were predominantly limestone, most produced from pebbles. Some were without secondary flaking or retouching, while others had evidence of grinding. Charcoal from the excavations yielded dates of 7,740 ± 125 BP, with even older bone collagen results of 11,250 ± 200 and 13,400 ± 200 years BP.

In the inner part of the cave, a number of mammal teeth and skulls as well as land molluscs were found. Other artefacts included a few cord-impressed shards and pieces of soft haematite, red ochre thought to have provided one of the pigments for the wall paintings within the rock shelter. Among the paintings were outlines and silhouettes of human hands, one drawn with concentric circles on the palm. A design on the upper wall was identified as the rising or setting sun viewed from the cave. Many of the other figures are of animals such as bulls with calves, pigs or boars, a deer and remains of a large fish.

Aung Thaw tentatively identified the site as 'Neolithic' on the premise that some of the tools were used to produce food. While a small amount of pottery was recovered from the site, the tools more closely resemble Late Pleistocene artefacts. Thus it seems more likely that Badah-lin was occupied seasonally with minimal systematic use of the surrounding resources. Parallels to the Badah-lin finds have been made to stages in the Da But to Bau tro cultures in Vietnam, the industry of Laang Spean in Cambodia, and Khao Talu and other caves in Thailand.



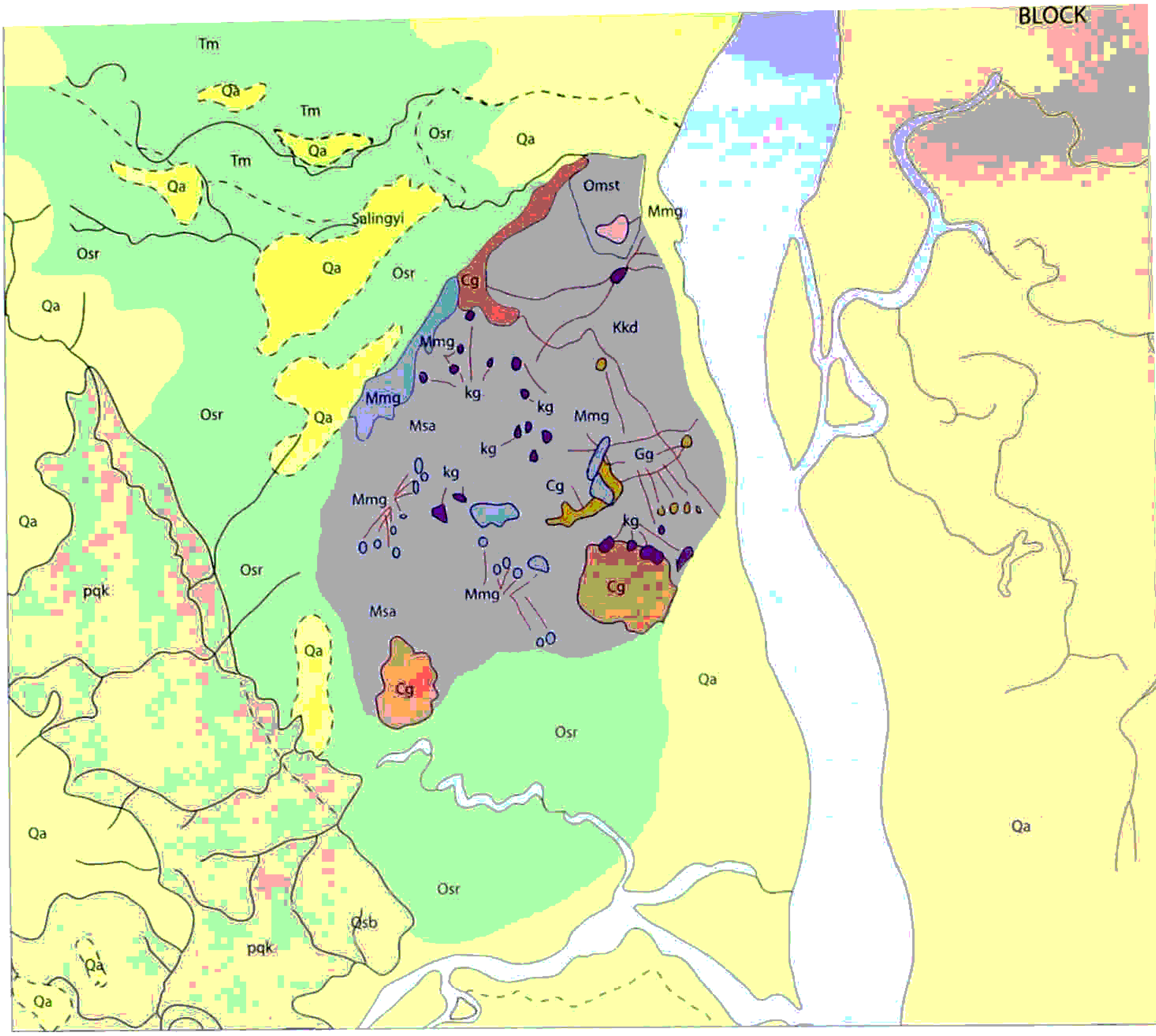
Drawings of painted figures at Badah-lin.
(After Aung Thaw 1969, 1971)

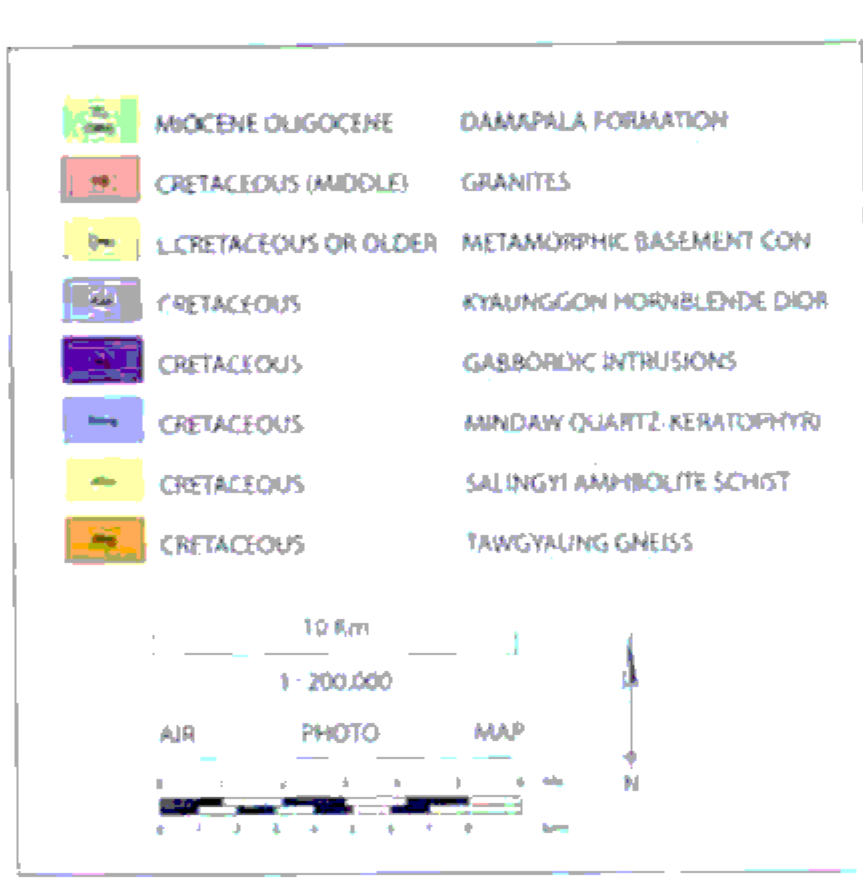
Weiponla Cave

Comparative material has also been found cave sites to the Lower Myanmar, with survey undertaken in May 2000 of a limestone cave beneath Weiponla Stone Hill, Pa-an Township in Kayin State. The cave, with an entrance of some 15 m, has not been excavated although the finds are provisionally dated to 9,000-6,000 BP based on comparison to the Badah-lin dates. Although no human skeletal remains were recovered, numerous animal bones, jaws and teeth were found. Among these were barking deer, deer, sambars, gaurs and wild pigs, turtles, fish and mussels. Stone tools, charcoal and red ochre were also found. A number of other cave sites are known but have yet to be excavated. Areas include the Shan Plateau and its western edge and the Lower Myanmar peninsula. Caves are also found in the Salingyi area on the west bank of the Chindwin where Htaukmagon-Moegyobyin are located.

Htaukmagon-Moegyobyin, Salingyi

Moegyobyin and Htaukmagon, along the Lower Chindwin, are part of the domal Salingyi upland. This contains a rich variety of stone material of probable Miocene-Oligocene and Cretaceous origin such as hornblende, granites, and schist.[21] Stone continues to be used for enclosure walls and feeding troughs for animals.[22] The rich stone resources of the Salingyi area are seen in the presence of a number of megaliths around Moegyobyin. All are natural stone, without apparent carving. Their dating is problematic although given the frequent association in the Lower Chindwin of megaliths and polished tools in the Lower Chindwin, they are provisionally placed with the Neolithic period of the site discussed in the next chapter. While Htaukmagon was excavated by Sein Maung Oo in the late 1970s, the work at Moegyobyin has been surface survey, with Nyein Lwin more recently carrying out further excavation.





The range of stones on the Salindyi domal uplife is unusually rich. The location overlooking the Chindwin River is strategic and also scenic. This combination of resources and location made it a prime site for early habition.
(Adapted courtesy Ivanhoe Myanmar Holdings Ltd. Exploration Map 1995)

The richest area is a mound west of Moegyobyin (Chin Sae Kon) village. Skeletons were reported during dam and canal construction in the 1990s and survey by Sein Myint since 2002 has documented a whole series of skeletal remains.[21] In the 1980s, a succession of Anyathian artefacts spanning the Palaeolithic, Mesolithic and Neolithic was recovered by Toe Hla and a team from Mandalay University in a six-acre tract of tomato fields 100 metres west of the Moegyobyin cemetery. The tools were divided into four categories: Lower Palaeolithic hand-axes, Upper Palaeolithic blades, Mesolithic microliths, and Neolithic polished axes and rings. Hematite ore was also recovered, thought to have been used for polishing, sharpening, and shining artefacts.[24] The Palaeolithic tools were made from fine-grained igneous pebbles and cobbles, the very slightly worked pebbles placed some 40,000 years ago in the mid-Pleistocene.

The Upper Palaeolithic tools were defined based on the abundant flakes and associated cores with the manufacturing technique likened to the Levalloisian of the Interglacial to Last Glacial period. Although no stratigraphy was defined for the site, the Mesolithic finds were reportedly above the Upper Palaeolithic, the tools being smaller and more skilfully chipped.[25] Polished axes dominated the Neolithic finds with other artefacts including rings, spades, blunt-toothed wedges and clubs. There were also axe-like fragments associated with hunting, cutting wood and digging. These were found in red earth and gravel deposits of the Late Pleistocene.

Just north of Moegyobyin, Neolithic artefacts have been found on the craters of Western Twintaung and Leshitaung.

Summary

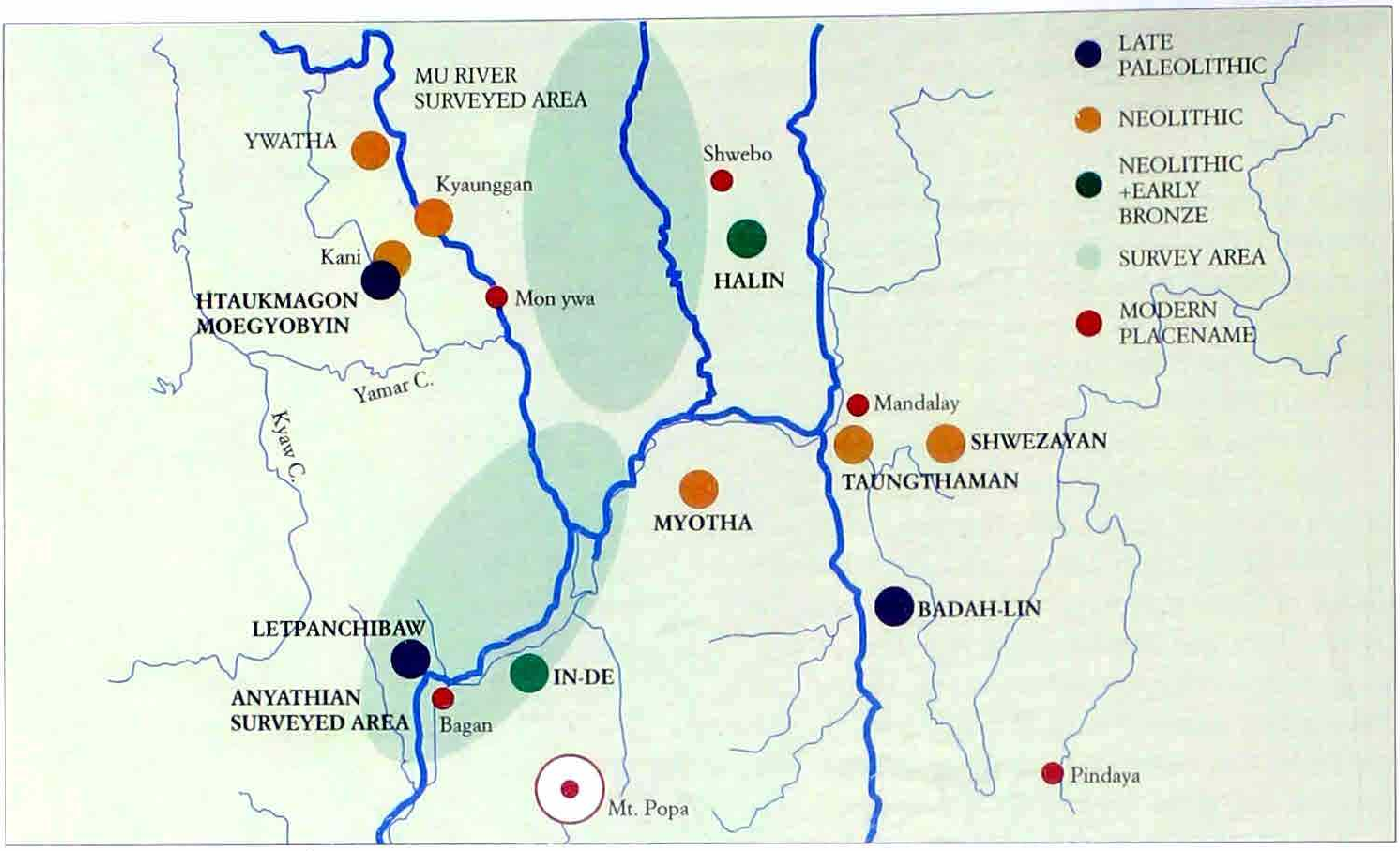
Bands of hunter-gatherers probably lived side by side with comparatively complex societies, each using different techniques to manufacture stone tools. Thus the sequence of stone tools in Myanmar is not a measure of complexity.[26] In addition the absence of tool change seen for instance in the Anyathian tools, is also seen in Thailand. Bannanurag has suggested that it may in fact reflect the manufacture of increasingly specialised wood and bamboo tools.[27]

Early Palaeolithic (Anyathian) 'chopper-chopping' tools come principally from the Middle Ayeyarwaddy and are dated *circa* 750,000-25,000 years ago in relation to the river terraces. While the dating of these is in need of further documentation, their publication by De Terra and Movius along with that of T. O. Morris, continues to provide a reference for stone tool identification. Additional Palaeolithic material from Moegyobyin on the Lower Chindwin merits further research to clarify questions raised about whether some of the 'tools' are not natural stones.

Late Anyathian tools have been recovered from the Mu valley and Badah-lin, the latter being at present the sole excavation of a Stone Age cave site in Myanmar. While some exploration has been undertaken at caves in Kayin State, there are many areas in Lower Myanmar yet to be surveyed for Paleolithic habitation. This is also the case with open air sites, for Palaeolithic material has been found for instance near Tagaung. As we noted, these have been used by Tin Thein as one factor to support suggest a sudden change in the course of the Ayeyarwaddy between the Paleolithic and Neolithic.[28] In contrast with the Paleolithic material, to date only from Upper Myanmar, polished stone tool finds are seen throughout the country. It is to these that we turn in the next chapter.

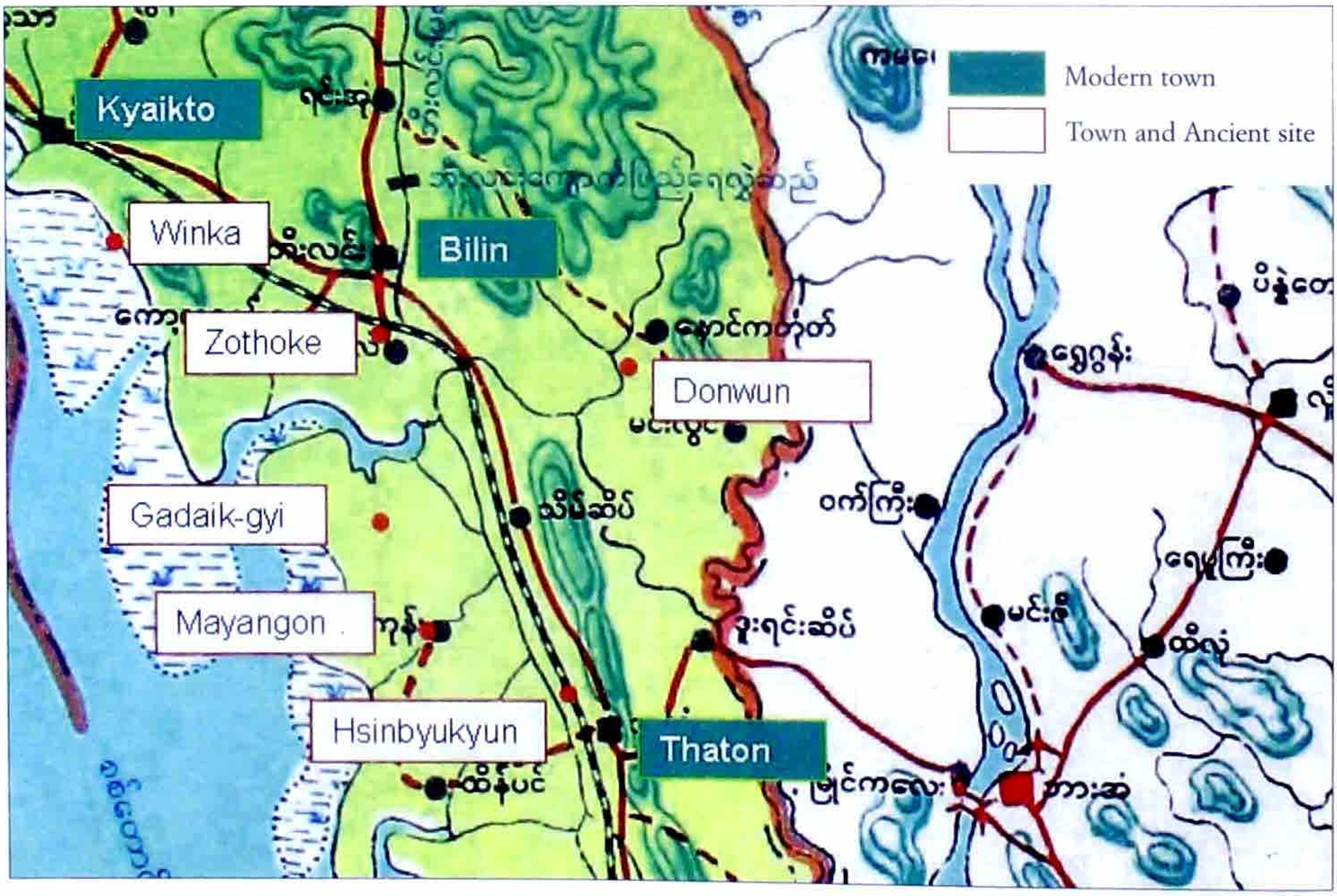
FOOTNOTES

1 Higham and Thosarat 1998: 24
2 Higham 2002: 26, 81
3 Geyh, Kudrass and Streif 1979; Higham 2002: 8
4 Anderson 1988: 43, 56
5 Takaya 1969
6 San Win 1986
7 Charoenwongsa and Bronson 1988: 21
8 Myint Aung 2002
9 Aung-Thwin 2001: 21
10 Aung Thwin 2001: 10, Morris 1932
11 Kan Yong 1985a: 36; Murowchick 2002: 135; Wang Renxiang 2004
12 Ba Maw 1999; Chhibber 1933: 30; Thaw Tint and Sein Tun 1985
13 De Terra and Movius 1943: 353
14 De Terra and Movius 1943: 362
15 De Terra and Movius 1943: 374
16 Bannanurag 1988: 76; Morris 1935; Myint Aung 1981: 7
17 Aung Thwin 2001: 25
18 Aung Thwin 2001: 25
19 Nitta 1987
20 Tin Thein and others 2001
21 Ivanhoe Myanmar Holdings Ltd Exploration Map 1995
22 Sein Myint 1999: 81
23 Sein Myint 2005a
24 Ba Maw et al 1999: 13-4; Than Tun Aung 2000
25 Ba Maw et al 1999: 12, 102, 12
26 Bronson and Natapintu 1988: 105
27 Bannanurag 1988: 61, 64
28 Chit San Win 2004: 97-106



Documentation of Late Paleolithic and Neolithic habitation in Upper Myanmar has been sporadic. No sites were excavated in the Anyathian and Mu River survey areas.

Finds from excavations at Letpanchibaw, Badah-lin, Shwezayan and Htaukmagon-Moegyobyin point to longterm occupation of Upper Myanmar.



In contrast to Upper Myanmar, no Late Palaeolithic sites have been identified in Lower Myanmar. There are, however, a number of probable Neolithic sites where polished stone tools, and in one case stone rings, have been recorded.

Pottery from these sites includes incised blackwares and other types of pottery incised with distinctive patterns variously identified with Bronze and Iron Age settlements in central Thailand.

Chapter Three
NEOLITHIC

Distribution

Man's relationships with the environment widened significantly during the Neolithic era in Myanmar. Regular cultivation around the Taungthaman-*in* meant new opportunities for birds, insects and mammals, as well as increased wealth through the production of a disposable agricultural surplus.[1] It is within this context that we describe the so-called Neolithic era in Myanmar. There is, however, no well dated chronology and many ambiguities in distinguishing Neolithic from early metal-using sites. So while we have used a provisional timeframe of *circa* 3,500/2,500-300 BC, there is no clear sequence of stone tool forms or dates. There is also evidence for Neolithic occupation of first millennium AD walled sites such as Tagaung (Kyan Hnyat), Halin, Beikthano, Sriksetra, Kyaikkatha, Winka, Donwun, Gadaik-gyi, Thaton, Mayangon, Hsinbyukyun and Dawei.

Polished stone tools have been collected in ethnographic contexts, such as Naga villages in northern Sagaing Division. Many finds have

Stone tools from Thagara, Dawei and Thayetchaung (10-14 cm). The first millennium AD walled site of Thagara is located north of Dawei midway between the river and the coast. *(Collection Pe Nyan)*

Top left: Stone tools from Tagaung, Upper Myanmar. *(Collection Chit San Win)*

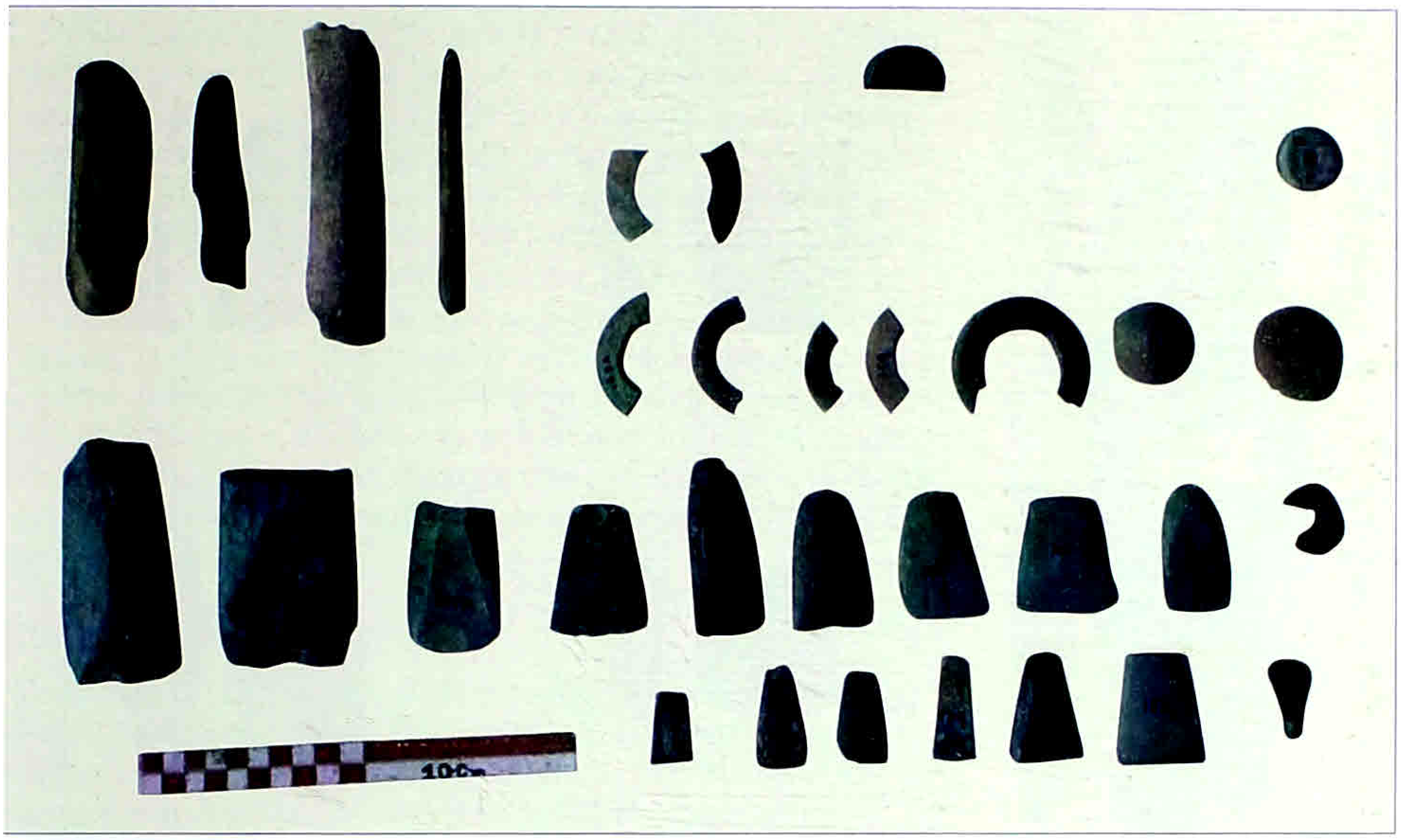
Middle Left: Neolithic tools from Mindon north of Sriksetra. *(Collection Chit San Win)*

Lower left: Stone tools found during construction of a new hospital in central Dawei. These were among basketfuls of stone implements documented during the construction. Hpaya Gyi Museum, Dawei.

Upper right: Tools from Halin, Shwebo, Mandaly Division. *(Collection Chit San Win)*

Middle: Stone tools from Winka village at the foot of Mount Kelasa, Mon State in Lower Myanmar. Neolithic implements were also found during excavations carried out at Winka in the mid-1970s. *(Collection Chit San Win)*

Lower Right: Stone implement from Thayetchaung, south of Dawei. Tanintharyi Division. *(Collection Pe Nyan)*

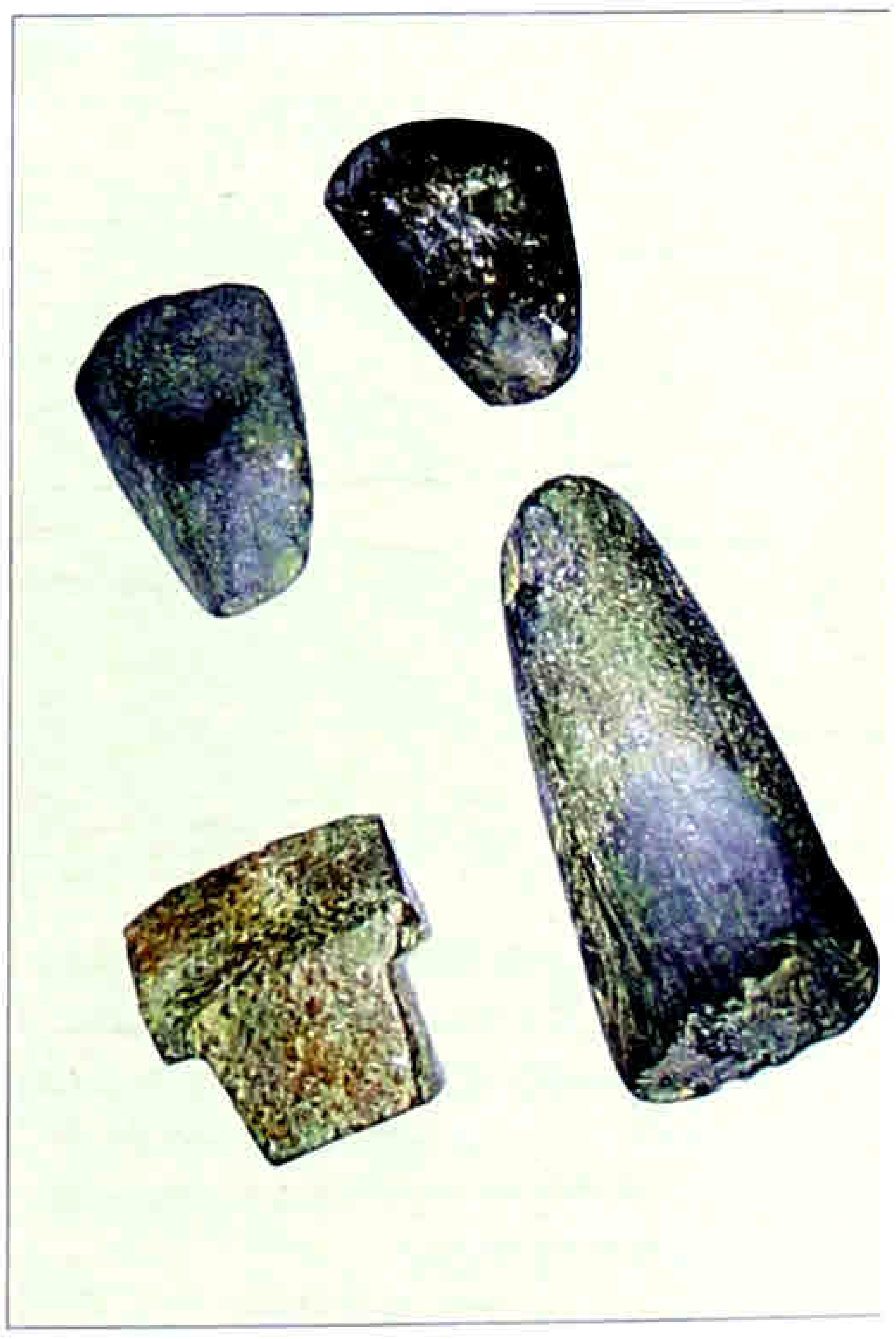


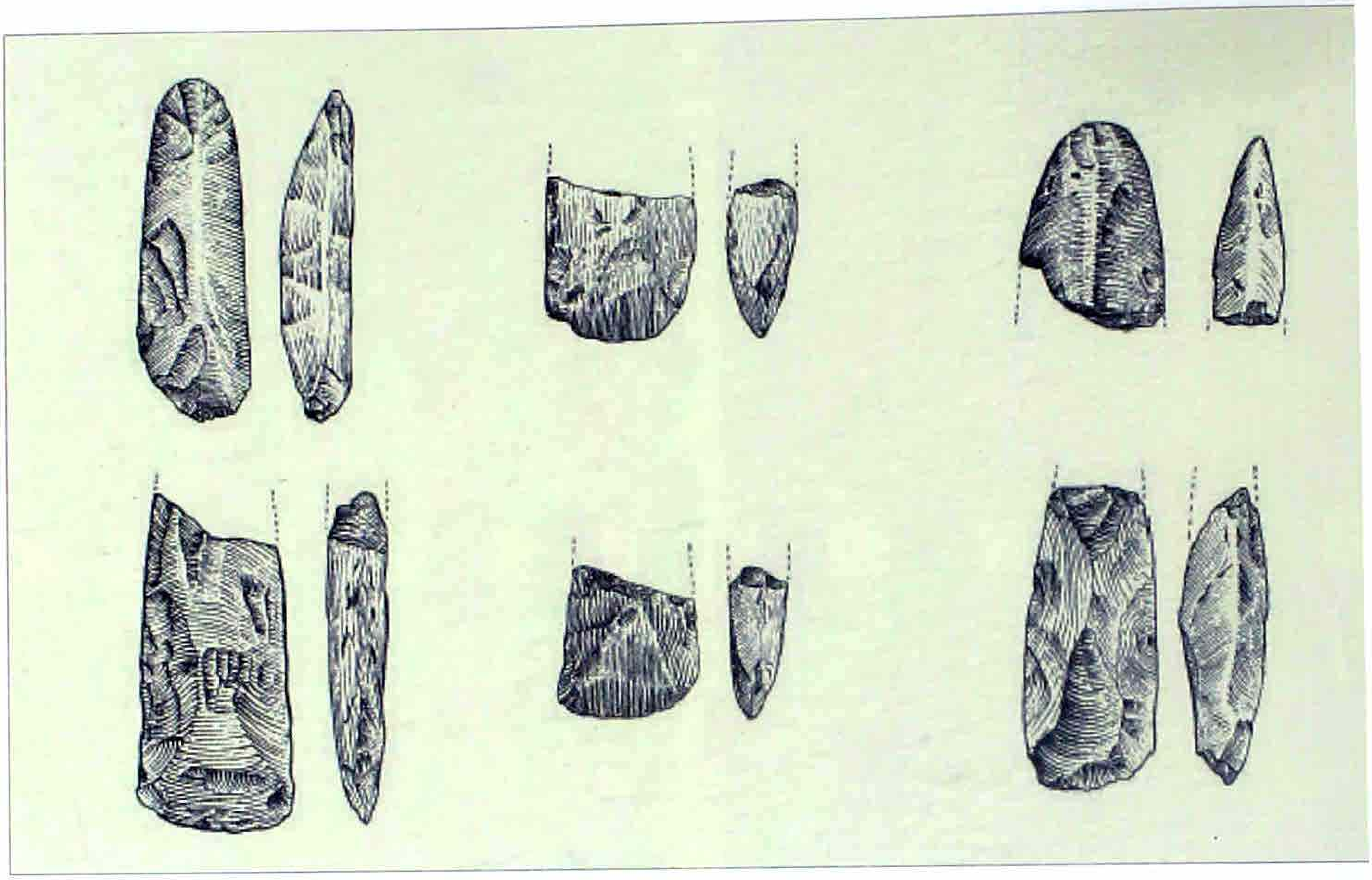
been made during field cultivation or construction, such as rich finds in central Dawei during hospital construction and during canal repair at Mayangon near Thaton, Mon State. Chance finds have also been made in the course of fieldwork checks on chronicle accounts, one example being shouldered stone tools collected north of Sriksetra at Mindon, one of several place names in the 2nd century AD migration of King Thamoddarit up the Ayeyarwaddy from Sriksetra to Bagan.[2] In addition, due to the medicinal and protective values attributed to them, polished stone implements often are kept by villagers, a problem noted by Pautreau in excavations within the Samon valley.[3] A comparative study of the incised patterns seen on sherds and vessel forms is not available. The scarce research on the Neolithic in Myanmar and the variable sources and means of typing tools, consequently mean that our attempt here to define this crucial period more raises questions than being able to cite a well documented sequence of data on excavated artefacts and ecological changes. There are artefacts from Upper and Lower Myanmar called Neolithic but similar to ones from sites elsewhere in the region associated with both the Neolithic and Bronze Ages finds. Links in pottery and stone artefacts are seen also to Ban Kao, Kok Pleb and Nong Nor in Thailand as well as further south at Jenderam Hilar, Selangor in Malaysia. Given all these lacunae, it can only be hoped that research now underway will help to revise the data included here on sites in five different regions:

Moegyobyin-Htaukmagon (22°N 95°04'E), Lower Chindwin
Letpanchibaw (21°17'N 94°55'E), Middle Ayeyarwaddy
Taungthaman (21°54'N 96°03'E), junction of the Ayeyarwaddy and Myit Nge rivers
Shwezayan (22°N 96°09'E), east of Mandalay, Myit Nge (Dhotawaddy)

Artefacts from Letpanchibaw. *(Photograph by Win Maung (Tampawaddy))*

Neolithic tools from Homalin, Sagaing Division. These tools, collected during ethnographic study, highlight the many regions of Myanmar where further documentation of early habitation is yet to be completed. *(Collection Kyaw Win (Manotha))*

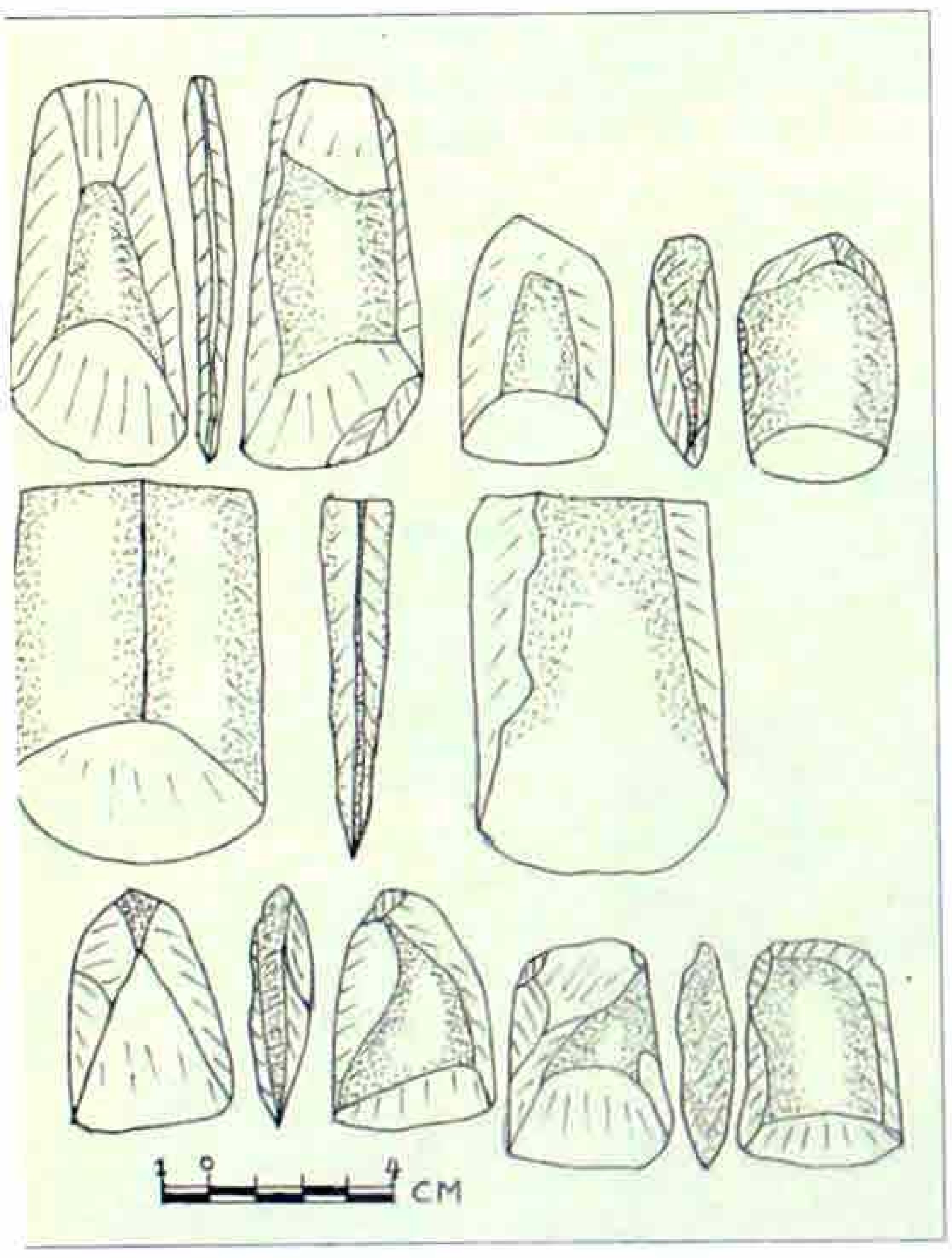




Tools from Shwezayan.
(After drawing by Hla Gyi Maung Maung)

Mayangon-Hsinbyukyun (16°58'N 97°16'E), Thaton, Lower Myanmar.

Moegyobyin-Htaukmagon is notable for the range of granite, quartz, gneiss, schist and other stones as well as the presence of megaliths, which are often associated with Neolithic sites. Letpanchibaw, its artefacts revealed by a cutting on the bank of the Middle Ayeyarwaddy, is important for its occupational continuity and location just north of Bagan. Many finds exist along the Upper Ayeyarwaddy, such as at Tagaung and some twenty kilometres south at Kyan Hnyat. Taungthaman's location is also significant, both for its proximity to Amarapura and Mandalay and its position on the edge of a large *in-gyi* or seasonal lake. Artefacts from Taungthaman suggest its use both as a Neolithic workshop and a cemetery with inhumations, some including iron artefacts. Shwezayan is solely lithic, but also a manufacturing site, strategically located on a bluff high above the Myit Nge with its river-borne stones from the Shan Plateau exploited for tools. From Mayangon-Hsinbyukyun at Thaton, the range adzes, axes and sickles, were manufactured from local stones found in the varied terrain along the coast. Polished tools have also found along deep-sea coves such as Nyaw Byin on the seaward side of the Dawei peninsula. From *circa* 50 cm below ground level, in caves south of the ancient city of Tanintharyi near Myeik, orange pottery incised with alternating patterns of crosses are similar to black sherds from Hsinbyukyun and other black sherds from Donwun north of Thaton. Many of these may well have come from metal-using contexts but research in the south has been very minimal.



Stone tools from Kyaikkatha, Mon State. The location of Kyaikkatha, at the mouth of the Sittaung, and finds such as these support a profile of longterm occupation and trade in Lower Myanmar.
(Drawing after San Win)

In Upper Myanmar, where more research has been carried out, a general contrast can be seen in the materials and proportions of tools from west and eastern regions. For example, those from the

Chindwin are commonly of fine grained basaltic rock with a thicker sometimes wedge-like profile. Stout pounding implements are also frequent, tools bevelled on one end with a flattened round bottom. In comparison, tools along the Samon or Myit Nge are more slender and flat, generally made from sedimentary or metamorphic rocks.[4] These forms and materials, along with a number of others, are also found in Lower Myanmar but data is too scarce to make even a general regional typology. Two other important typical artefacts are rings and pottery. The rings range from serrated bangles and pinions at Letpanchibaw to finely polished triangles, ovals and rectangles from Chindwin sites, to circular rings with prominent inner flanges or t-shapes from Mayangon. Rings are also found at sites with bronze and bronze-iron artefacts, another issue we return to in both this and the subsequent chapter.

Along with stone rings, a number of pot sherds and stone implements have been documented at Mayangon. Several of the stone tools were fashioned into sickle-like pieces, the one seen here (13 cm in length) having small serrations on the inner rim.

Htaukmagon-Moegyobyin

We discussed the Paleolithic finds from Moegyobyin in the previous chapter, with the nearby site of Htaukmagon excavated from February 20-27, 1970. This work was done by Sein Maung U who reported a thermo-luminescence date of 470 BC obtained from pottery, although there is little documentation about the dated piece.[5] The excavations reached a depth of 1.8 metres with most of the cultural material found in the lowest of the four layers, a reddish brown sandy soil. The stone tools included axes, adzes, wedges, chisels and shouldered adzes as well as sections of flat ring stones. In the same layer were pots, beads (earthen, bone, stone), animal bones and carbonised rice grains.[6]

While the majority of the tools were polished, some were larger cores and possibly flakes, worked but not finished. Of note also were a number of fragments of terracotta rings. These have been found at Shwezayan east of Mandalay and during more recent excavations at Letpanchibaw. The bangle-like rings themselves are about two centimetres in width and serrated on the outer rim like clock or watch wheels. The inner diameter, some seven centimetres, is larger in proportion to the ring than is seen in larger stone or glass rings. Given these differences in material, proportions and size, it is not clear how or if they are related to the other types of rings.

Okaing and other Lower Chindwin sites

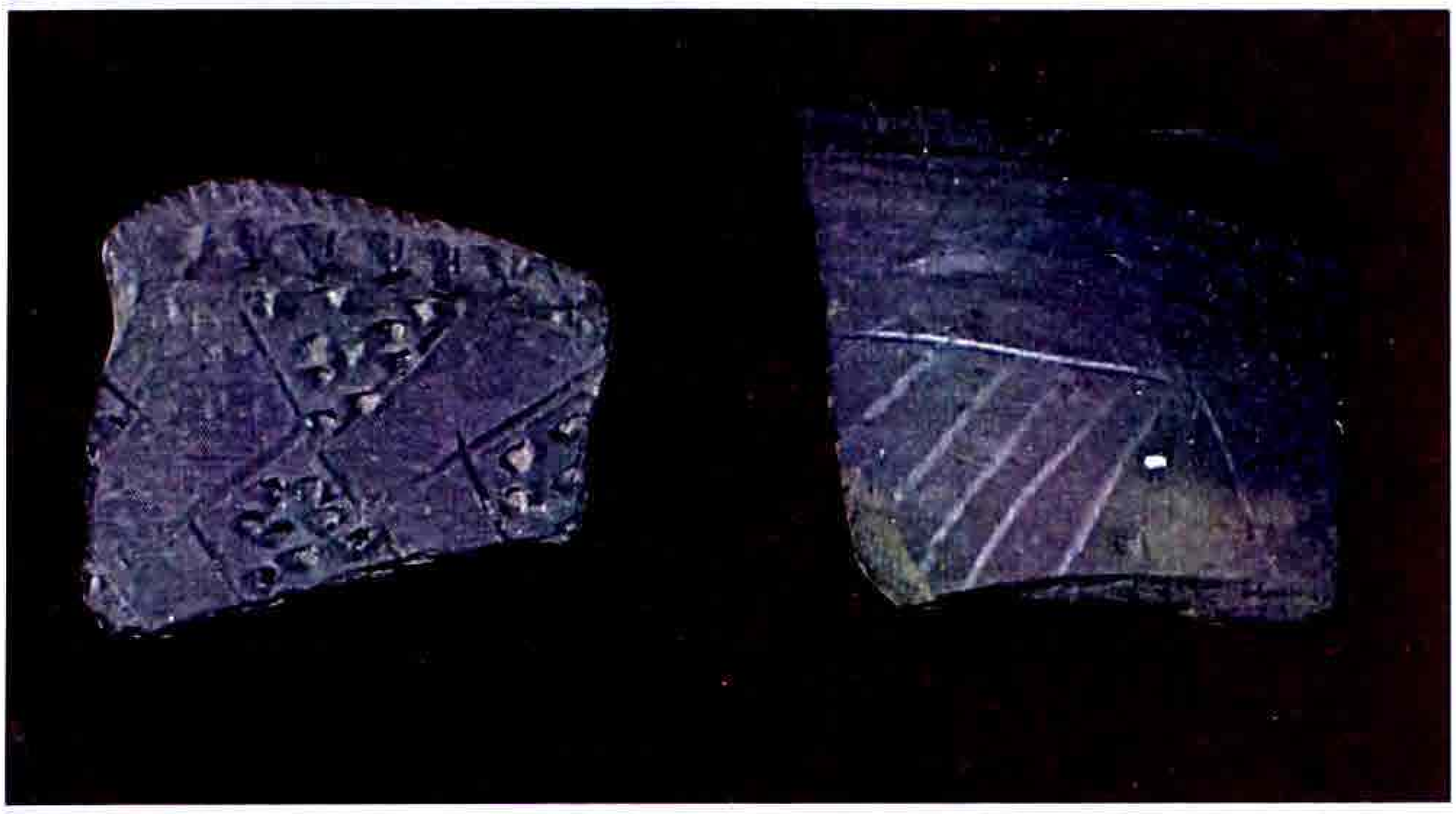
North of Monywa, a number of other sites have been identified along the Chindwin. We will return to one cluster around Mingwedaung, Ywatha, Moktaw and Aingdaung in describing the distribution of stone rings. Somewhat to the south, finds have also been made at Okaing east of Twintaung and Dingakon at NweGwe hill (22'N 95°30'E) east of Monywa. Just north of NweGwe, Win Maung (Tampawaddy) has recorded bronze at Taunggya, Kyaukka, east at Mondu (23°24'N 22°35'E) and also at Thapan. This last site also yielded stone finds.[7] Given the abundant stone tools and rings around Okaing as well as copper droplets, it appears to be a manufacturing and habitation site, perhaps the source of the bronze tools from the Nyaunggan cemetery. On NweGwe hill, blades with crude, slightly polished teeth and cobble tools made from hard and fine-grained siltstone river pebbles were found. There has yet to be comparative analysis of associated pottery from these sites, and as the recurrent mention of bronze and the finds from Nyaunggan described in the next chapter suggest, this is an important area in defining the Neolithic to metal-using transition.

Letpanchibaw

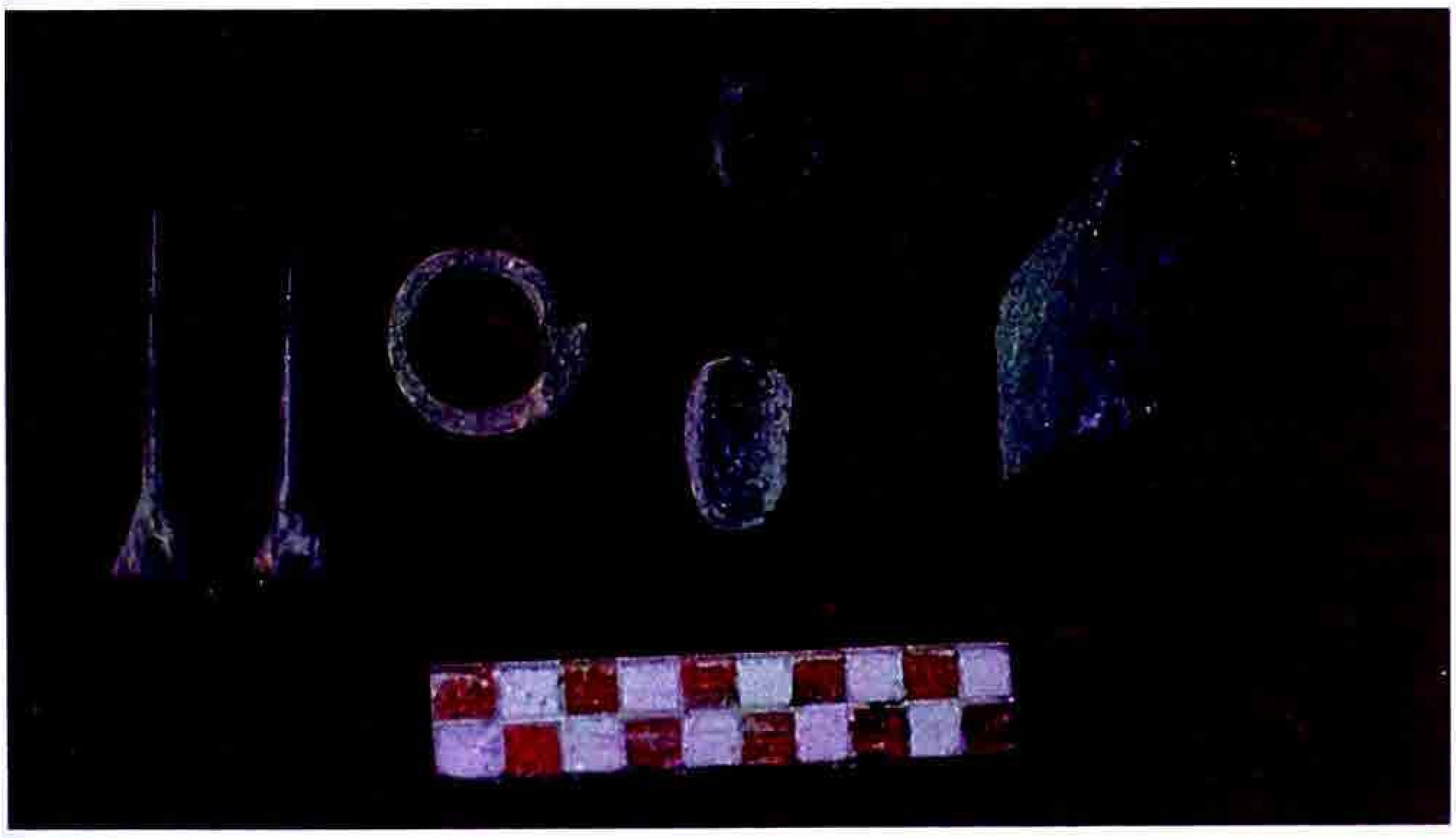
Letpanchibaw occupies a small tongue of land (350 x 187 m) at the junction of the Chindwin and Ayeyarwaddy, about 21 km north of Nyaung-U. Traditionally known as Ywa Mon, it is one of the 19 founding villages of Bagan.[8] Excavations by Myint Aung were conducted in the early 1970 on the north face of a later brick wall and ditches enclosing the site. From the soil stratigraphy revealed by the section, Myint Aung has proposed a change from a humid sub-tropical climate to a semi-arid environment during the formation of the upper part in the Post-Pleistocene. This is worth summarising here, given the Middle Ayeyarwaddy evidence for earlier habitation with the Anyathian tools and how this possible ecological change might have affected Neolithic settlement.

The uppermost Layer 2 was 5.32 m thick, a siliceous fine grey silt with both aluminium and silica. It was from this horizon that the Neolithic material and a human skull were recovered. Layer 2A was 2.47 m thick with a high percentage of aluminium. Layer 3, 1.42 m thick, was lateritic highly cemented soil overlying the Irrawaddian sandstone formation. *Stegodon elephantoid* fossils were recovered from this layer, animals dated to the mid-Pleistocene about 600,000 years ago. The climate at this time was likened by Myint Aung to that of the southern coastal regions with annual precipitation of more than 250 cm and a night temperature of 30 degrees Celsius. This is in contrast with current annual precipitation of some 61 cm and night temperatures sometimes reaching 13 degrees Celsius.[9]

Some 140 Neolithic tools were recovered, 30 from excavation and the rest surface finds. All but four found in Layer 2 were from the topmost layer, a distribution correlated to increased settlement after the end of the Pleistocene. The stone materials were predominantly metamorphic (67%) including quartzite, schist, chlorite phyllite and chlorite schist. None of these occur locally suggesting trade with other areas, perhaps along the river. Igneous stones (25%) such as basalt, serpentine, trachyte, dolerite, as well as sedimentary (4.3%) limestone and fossil wood (3.5%) were also present. The tools were adzes (75%), faceted adzes (2.86%), shouldered adzes (1.43%), axes (3.57%), chisels (9.2%), ring stones (5.71%), shouldered axes and hammer stones (0.71%) and querns. From the abundance of adzes, a woodworking culture was suggested but Myint Aung concluded that the evidence was too meagre to call it an agricultural society.[10] Further excavations have been carried out by Nyein Lwin since 2001 to a depth of 3.6 m on a central rather than northern section of the stratigraphy. Given this difference in location from Myint Aung's excavations, not only Neolithic material but artefacts of the Pyu, Bronze, Bagan, Inwa and more recent periods were recovered.



Pottery from Letpanchibaw has patterns enclosed within lines, impressed with dots and incised with linear patterns.
(Photograph by Win Maung (Tampawaddy))



Artefacts from Letpanchibaw.
(Photograph by Win Maung (Tampawaddy))

Neolithic tools from surface survey around Nyaunggan crater, Budalin Township, Sagaing Division. While bronze implements were excavated from the Nyaunggan cemetery site, with survey south of the site suggests local production.
The region also supported many Neolithic sites with similar stone artefacts.

Side view incised sherd from Donwun showing inner perforated lip around rim, possibly for hanging.
(Collection San Win)

Incised sherd Donwun. Donwun, one of a number of walled sites in the Mon State, is located east of the Bilin River. The site has been surveyed yielding a number of typical first millennium AD artefacts such as finger-marked bricks.
(Collection San Win)

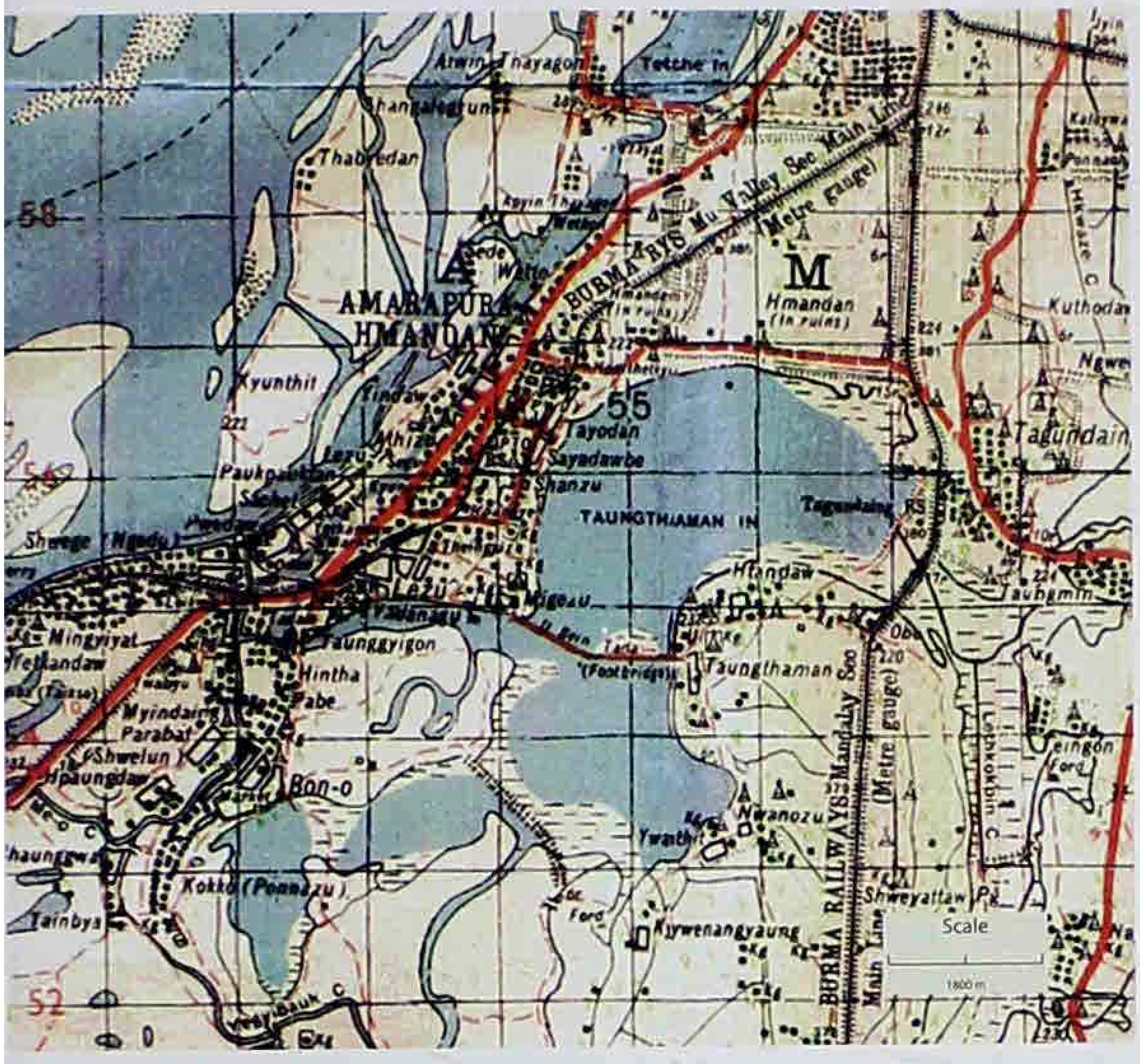
Stone tools from Hsin Byu Kyun, Thaton, Mon State recorded during surface survey. The tools are kept by villagers for their medicinal and protective properties.

Pottery from Letpanchibaw included blackwares incised with lines or impressed with dots enclosed between lines, at times curvilinear ones. Some vessels have sharply angled shoulders, others with broad incised bands at times painted red.[12] These are not identical, but are very similar to patterning on Neolithic wares ranging from Phung Nguyen in Vietnam to Ban Kao, Kanchanburi Province where dates indicate a chronology between 2,300-1,500 BC.[13] To the south, a comparable profile is recorded at Jenderam Hilar, Selangor in Malaysia. In addition to Letpanchibaw, these wares have been found in Upper Myanmar at Taungthaman. In Lower Myanmar at Donwun, Mayangon-Hsinbyukyun and south of Tanintharyi, a common pattern of distinctive pottery designs is also found. These include black and orange wares, with incised and impressed patterns also enclosed between incised lines, sometimes multiple curvilinear motifs or 'X'-motifs. Given the lack of exploration of the Neolithic or early metal-using periods in Lower Myanmar, it is premature to assign these to a single distinct era. These designs recall probable Neolithic pottery from Taungthaman described below, although other artefacts from these sites are analogous to Bronze Age material from Thailand. Pottery from the walled site of Sanpannagon has similar patterns of multiple waves.[14] Incised waves and rows of 'X'-motifs are also seen on sherds from Inburi, Singburi Province.[15] Another significant type of pottery found at Letpanchibaw highlighting its occupation in various technological contexts, are 'distillation' pots. Four of these were recorded at Letpanchibaw, all were three perforated cylinders fixed on a shallow pedestal bowl. Two were of the functional variety with holes in the support cylinders and two of the non-functional variety.[16] These vessels, more fully discussed in the next chapter, were excavated at Nyaunggan, and in addition recorded at Halin and various sites in the Samon valley.[17]

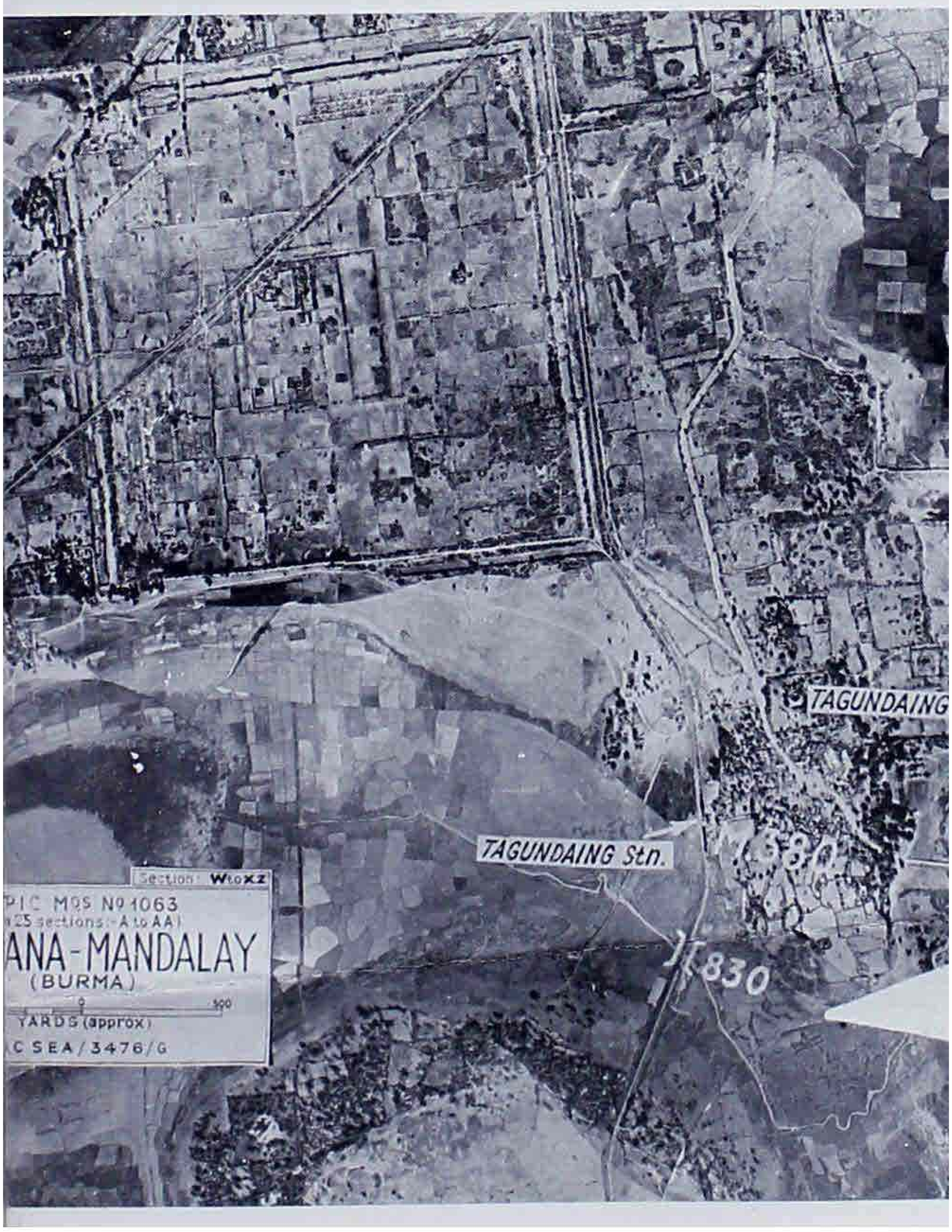
Letpanchibaw's location highlights the need for more exploration along the Middle Ayeyarwaddy, in the area from Myingyan to Magwe. The Middle Ayeyarwaddy links to the Lower Chindwin to the west and Myit Nge areas to the east are vital if we are to be able to identify regional variations during stone and metal-using eras. The 19 Pyu villages from which Bagan emerged are also within this stretch of the Middle Ayeyarwaddy, where it is within the context of prehistoric resource exploitation that Bagan's early first millennium AD founding can best be validated. For instance, an ability to exploit the iron resources around Popa was possibly a factor in the selection of the 19 Pyu villages that formed Bagan from the 1,000+ villages around Bagan mentioned in chronicles.[18]

Taungthaman

Taungthaman, like Letpanchibaw, has yielded artefacts from a number of different periods, although the few iron pieces from one part of the site are often the only material mentioned with an 'Iron Age' label given to Taungthaman. However, just as Letpanchibaw testifies to the rich prehistoric record around Bagan, Taungthaman underlies the long term occupation of the Amarapura-Mandalay



Taungthaman-*in* is seen in the centre of this map, just east of the present town of Amarapura and south of the later walled city. The lake is well sited for agriculture with its location midway between streams entering from the east and the Ayeyarwaddy River on the west.



The seasonal changes to the lake at Taungthaman-*in* (photo CPIC MOSAIC PYINMANA-MANDALAY No. 1063 ACSEA/3476/G) are apparent on this aerial photograph, taken in 1944. The picture is part of the World War II Williams-Hunt Collection, SOAS (London). The excavated areas where Neolithic and Iron Age material were found are located along the western bank, just above the top left-hand corner of the 'Pyinmana-Mandalay' label on the photograph. This area continues to be occupied today, by small villages and a number of monasteries.

Stone rings from Taungthaman. Although the glossy black volcanic stone may have been traded from the Lower Chindwin, the presence of inner discs indicates that the polished stone rings were at least finished locally. Their shapes have been linked to veneration of the sun and other planets in the Neolithic and early bronze-using cultures of Upper Myanmar. *(Collection U Pyinna)*

Terracotta dice about 5 cm high from Taungthaman. The piece, thought locally to be contemporary with the stone rings above, suggests fertility veneration. *(Collection U Pyinna)*

area. The site is located just west of the junction of the Myit Nge (Dhotawaddy) and the Ayeyarwaddy 27 km south of Mandalay. The Myit Nge geographically would have been a conduit for interchange with Yunnan giving economic and cultural stimulus to the bronze-iron culture of the Samon. Three sites along the Myit Nge – Taungthaman, Taung-gaing and Shwezayan – were excavated in 1981-1982 by Sein Maung U.

The area exposed at Taungthaman was along the edge of a large seasonal lake, the Taungthaman-*in*. The excavation unearthed 44 inhumation burials. Thermo-luminescence tests on pottery from the site yielded dates of 710 ±200, 620 ±200, 460 ±220 and 410 ±200 BC. An iron fishhook found on the chest of a skeleton in the burial from which the 460 ±220 thermo-luminescence date came has been used to suggest local iron exploitation at this time.[19] The iron artefacts from Taungthaman were smelted at only 1,000 degrees centigrade rather than the 1,500 degrees needed to remove impurities. This may indicate an early stage of cultivation, supported also by rice remains in clay-lined hearths.[20] However, the iron pieces support expansion rather than the beginning of cultivation on the *in-gyi* shore.

Aung Thaw called Taungthaman Neolithic, based on the abundant stone implements, ring stones and pottery.[21] We have followed his opinion, for the many flaked cores, edge-ground and fully polished tools all support Neolithic settlement. This would have exploited the rise and fall of the *in-gyi* in a manner analogous to naturally moated mounds of Northeast Thailand and the shores of the Tonle Sap at Angkor. The local production of iron tools would have offered many new opportunities to widen agricultural output around Taungthaman-*in* and the many other sites located adjacent to seasonal water bodies.

Incised black bead, carnelian beads and later period finds from Taungthaman. The bead has been incised in preparation for later filling with a white feldspar material, one of several methods used to produce line-decorated beads. These are most commonly associated with the Samon bronze-iron and Pyu cultures but varieties are also found in Lower Myanmar and Thailand. *(Collection U Pyinna)*

Pedestal pots from Taungthaman. The function of the cube, incised with a front-facing female, a horse and other figures, remains unclear, with some scholars linking it to the bronze 'mother-goddess' figures of the Samon valley. *(Collection U Pyinna)*

Incised pottery and other terracotta and stone artefacts from surface survey at Taungthaman-*in*. Like some of the stone implements from Taungthaman, these ring sections and pottery indicate habitation around the *in-gyi* from at least the Neolithic. *(Collection U Pyinna)*

Pedestal pots from Taungthaman. Although only single pedestal pots have been found at Taungthaman, pots with multiple stems have been found elsewhere in Upper Myanmar. *(Collection U Pyinna)*

Taungthaman ring stones include egg-shaped ones of black stone as well a pinion shape with nine equally spaced pointing radiating spikes. A number of inner disks were also found, a mark of localised manufacture but some were probably from adjacent regions. The stone finds were concentrated in an area of monasteries west of the lake shore cemetery. A range of beads was also found at Taungthaman, including black and white beads with line designs and tubular carnelian beads. The black and white beads had previously been linked to Pyu walled site cultures but they are also found at bronze-iron sites in the Samon. Affinities to Samon bronze-iron sites are likewise seen in the Taungthaman pottery.

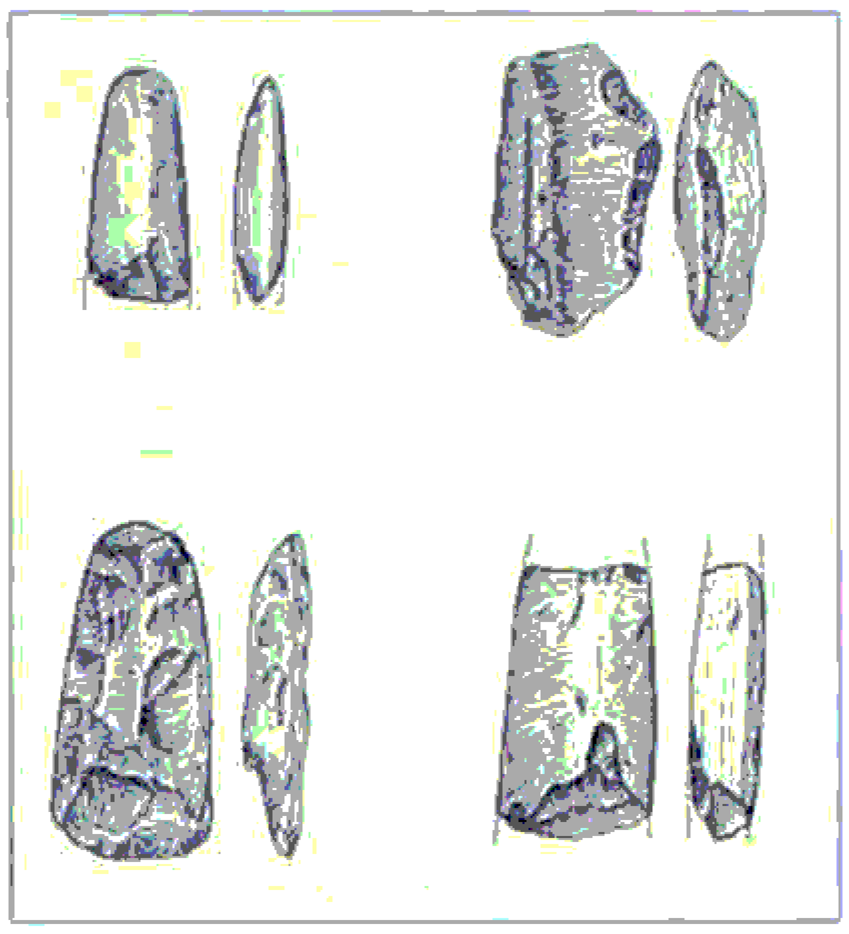
Grave vessels included some mounted on pedestals and small bowls with rounded bottoms. The Taungthaman type with a single stem has been found at sites such as Kyut-kan in the Samon and pedestal pots with multiple stems bearing cups have been found at Halin as well as Myin u Hle and Kok-ko-Kha-hla in the northern part of the Samon valley. The Myin u Hle vessel had a long slender neck (20 cm) with three shallow cups (9 cm in diameter) mounted on separate stems.[22] A range of other pottery was recovered, including buff-coloured wares and dark grey and black incised shards. Black sherds in the collection of the monk U Pyinnya have incised curvilinear designs filled with impressed dots similar to those from Letpanchibaw and Ban Kao. In its location adjacent an important *in-gyi,* Taungthaman is also analogous to Ban Kao and other sites with this type of pottery, described by Higham as small inland settlements on floodplains where aquatic resources and marshland suited to rice cultivation was available.[23]

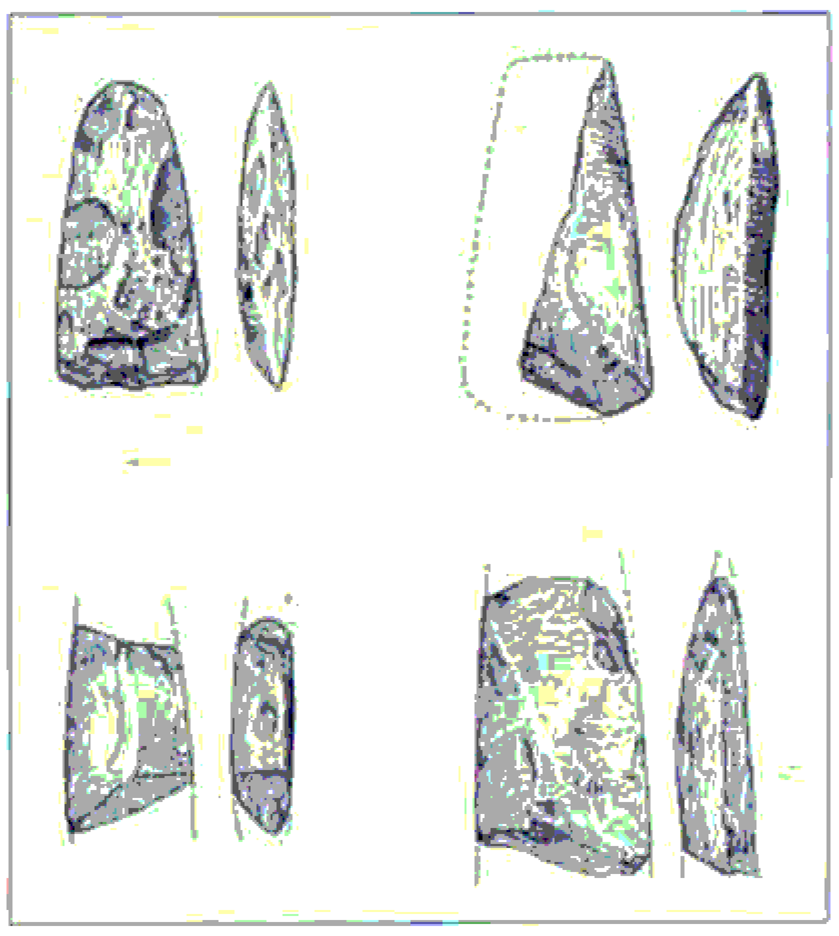
The arid region around Shwezayan is sparsely occupied today although several monasteries are supported. The excavated workshop area, west of the monastery shown here, is today used for banana cultivation.

Shwezayan

Like Taungthaman, Shwezayan appears to have been a production site, one easily defended due to its location on a high flat escarpment overlooking the Myit Nge River. Another site illustrating the rich stone resources in this area is Hmet kaya, one of the 11 *Ledwin* or rice fields, known later for supplying rice to Bagan. Also in this area, midway between Taungthaman and Shwezayan, Win Maung (Tampawaddy) has recorded piles of stone chippings piled to the height of a man.[24]

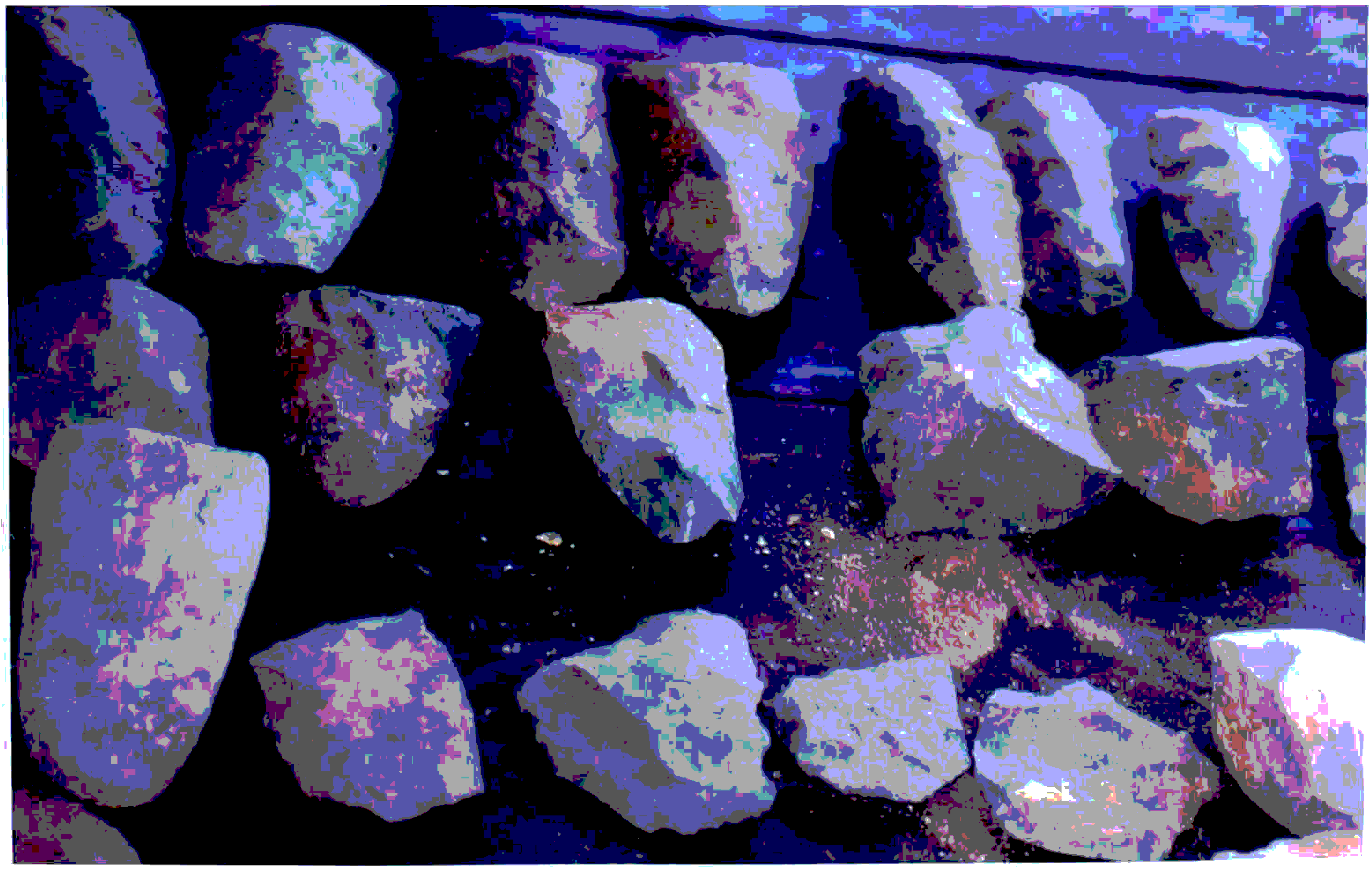
The manufacturing area of Shwezayan is located north of the river, west of a small monastery established in recent years. The excavation by Sein Maung U was carried out in a large field now planted with banana palms. Over 900 stone tools were excavated and collected from the surface during work at Shwezayan with a little-documented date of 900 BC reported. Both flaked and polished tools as well as some partially worked cores were found. A number of circular, oval and triangular stone rings were mixed with the tool finds. Some of these were a narrow 'bangle' variety but other types may have been traded from the Chindwin. Sherds were also recovered, including cord marked and incised patterns. Some iron was found during surface survey by the author, Win Maung (Tampawaddy) and Yee Yee Aung in 2003 but surface finds of pipes also indicate *circa* 17th century AD Inwa period occupation.





Tools from Shwezayan.
(After drawing by Hla Gyi Maung Maung)

Tools from surface collection at Shwezayan. The area is thought to have been a workshop, for while some implements were fully polished, others have only been roughly shaped.



The Hsinbyukyun mound off the northwest side of Thaton is seen on the upper left of the picture, north of the parallel river and railway. The mound, like Thaton,is aligned north to south along the fault line running through this area. *(Williams-Hunt Collection, SOAS)*

Thaton Region

Hsinbyukyun

Multiple habitation phases also apparent at Mayangon-Hsinbyukyun in Lower Myanmar draw attention to the wide distribution and the ambiguities about clearly separating stone, metal-using and first millennium AD eras. The sites both oval-shaped mounds are approximately the same size, *circa* 450 x 365 metres north-south and east-west respectively. Mayangon is 11.6 km northwest of Thaton and Hsinbyukyun is adjacent to Leik-*in*, the northwest corner of the walled enclosure at Thaton. Neither site has been excavated although first millennium habitation has been established with presence of abundant finger-marked bricks, an important marker of pre-Bagan habitation throughout the country that we mentioned in the Introduction and will return to in a later chapter. At Hsinbyukyun, the bricks are abundant in the two ramparts surrounding the mound, with a circular enclosure at Mayangon around the central village pagoda. Both mounds are surrounded by a number of small streams, extensively altered since the Neolithic due to natural processes and the construction of the rail line on the west edge of Thaton.

Hsinbyukyun or 'white elephant' island, was surveyed by the author with San Win and his team in 2004 and Mayangon by San Win's group in 2005. Due to limited time, the Hsinbyukyun stone and pottery artefacts recovered were few but significant. Among these were several thick and highly polished stone tools, such as a bluish-white triangular (3 x 3 cm) piece, a longer wedge-like brownish-orange (5 x 3 cm) and a rectangular black (6 x 3 cm) tool. There were also thick black pottery sherds with designs separated by horizontal lines. One sherd (5 x 7 cm) had three horizontal rows of different designs: X-patterns impressed with a pointed tool, wider star-like incised X's, and a deeply incised row of horizontally arranged flared V-shaped motifs. The X-patterning is seen also on black sherds from Donwun (17°08'N x 97°01'E) on the east bank of the Bilin River *circa* 22 km north of Hsinbyukyun, where the incised X's are bordered by multiple horizontally incised bands. Other black as well as orange sherds from Donwun have incised undulating patterns of multiple lines enclosed by several straight horizontal lines. Donwun's multi-period occupation is also seen in a number of finger-marked bricks, and particularly a crowned figure carve in relief on a stone slab (47 cm in height) from the central part of the site. In the southern sector of Donwun is an octagonal *stupa* made of laterite. However, the relationship of the *stupa*, stele and pottery to the different sections is not certain yet.

The X's and horizontal ordering of motifs are similar to two orange sherds recovered *circa* 50 cm below ground level from a cave just south of the walled city of Tanintharyi south of Myeik. On the Tanintharyi pieces, however, each incised 'X' motif is enclosed by an incised square line with the row of X's flanked above and below by rows of triangular impressions. A stone mould (8 x 10 cm), probably for casting a metal ornament, was found from the same cave. The mask-like oblong design (5 x 8 cm) inscribed on the piece is framed with a row of dots, with the two large circular eyes and mouth somewhat reminiscent of the face on the large bronze drum from Pejeng in Indonesia. The faces on this drum are set within bands of triangular patterns likewise akin to those on the Tanintharyi sherds. These Tanintharyi pieces, undated and from further south, nonetheless provide an important reminder that Malaysia and Indonesia were part of Lower Myanmar trade networks during the Neolithic and metal-using eras.

A rectangular stone mould, possibly for production of a metal ornament, from the same Tanintharyi cave as the adjacent pot sherds. *(Dawei University Collection)*

Other finds from Hsinbyukyun include carnelian and crystal beads. Additional first millennium AD object have been found south of Thaton along the Gawt River, notably thick silver coins bearing a *Srivatsa* and a conch. The same motifs are seen in coins of a horde from Kyaikkatha as well as on the other side of the Pa-an pass at U Thong, Central Thailand. The coins are one of many links between Thaton and Central Thailand sites such as U Thong and Ku Bua.[25] The crowned image from Donwun noted above, for example, bears the same graceful curves and proportions as Ku Bua reliefs. These are worth recalling here in light of the similarities of the Hsinbyukyun and Mayangon finds to artefacts from Ban Kao, Kok Pleb and Nong Nor in the same area around the Gulf of Thailand. We discuss these connections in a later section of this chapter on one of the important finds from Mayangon, the stone rings.

The piece, noted in the text in relation to the 6th to 11th century AD Dvaravati reliefs at Ku Bua, may also be compared to reliefs at the 11th century AD Ananda of Bagan.

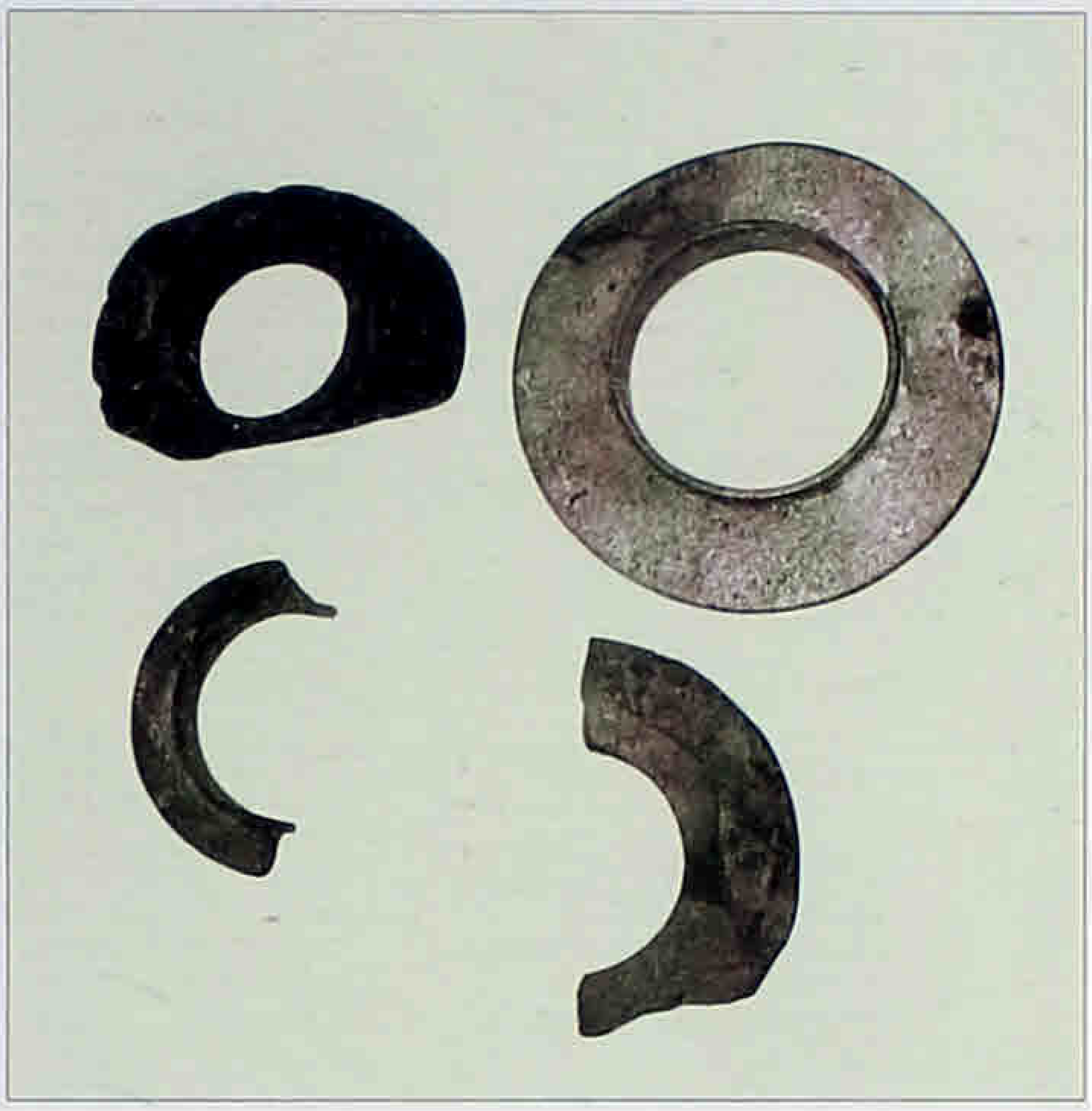
Opposite: These sherds, with horizontal bands of motifs, were recovered half a metre below ground in a cave south of Tanintharyi. *(Dawei University Collection)*

Assembled finds of pottery and stone implements from Mayangon, located northwest of Thaton.

Mayangon

Mayangon is one of a north-south line of mounds located on the edge of an underlying laterite bed. These parallel the linear fault-line escarpment at the foot which Thaton is located. The few kilometres between Mayangon and the escarpment are a mosaic of low-lying rice fields and slightly elevated terrain. Just north of Mayangon are Gadaik-gyi (17°03'N, 97°10'E) and Gadaik-leh (17°03'N, 97°12'E), two footprint shaped sites documented by San Win.[26] During late 2005 survey, more than 100 tools of limestone, granite, slate and a few igneous pieces were collected during drainage canal repair along a 1 km span of a creek just west of the mound. The tools have been roughly classified into axe/adzes (77), chisels (6), sickles (10), flakes (2) and spearheads (1). The adze/axes were variable in length (3.1-15.5 cm), width (2.8-5 cm) and thickness (0.5-1.5 cm). The sickles were crescent-shaped, some slightly curved triangular pieces. All were sharpened on the inner edge, some having small serrations some 1-2 mm in height. All the sickles were thin (0.3-0.5 cm) anywhere from 10-16 cm in length and 3.5-5 cm wide.

In addition, four stone rings were found. Two of these were complete, one made of a greenish white stone, the other a black stone, with outer diameters of 8.5 and 10.5 cm respectively and a common collar width of 2 cm. The inner holes of the four rings ranged from 4-6 cm, with the t-section of the largest ring having a



height of 2 cm. Six inner discs from ring manufacture *circa* 3 cm in diameter and 3 cm in height were also found. Due to limited survey time, only a few pottery finds were recorded. Particularly notable were the base of a pedestal pot (7 cm in height and base diameter), a heavy-bottomed cylindrical vessel (7 cm high and 6 cm in diameter) and a broken finial (6 cm in length). The pedestal recalls the numerous examples we noted earlier at Letpanchibaw and other sites in Myanmar and Thailand, while the heavy-bottomed pot may be analogous to cylindrical vessels with lugs that are common in the Samon region. When considered together with Hsinbyukyun, the Mayangon finds are significant indicators of the role played by the Thaton region of Lower Myanmar in exchange with Upper Myanmar as well as to Thailand and possibly Indonesia.

Among the stone tools from Mayangon were several sickle-shaped implements (10-16 cm in length).

Right: Circular stone rings found at Mayangon near Thaton, Lower Myanmar. The rings are similar in style to those found in Central Thailand, accessible from Thaton via Pa-an and the Three Pagodas Pass.

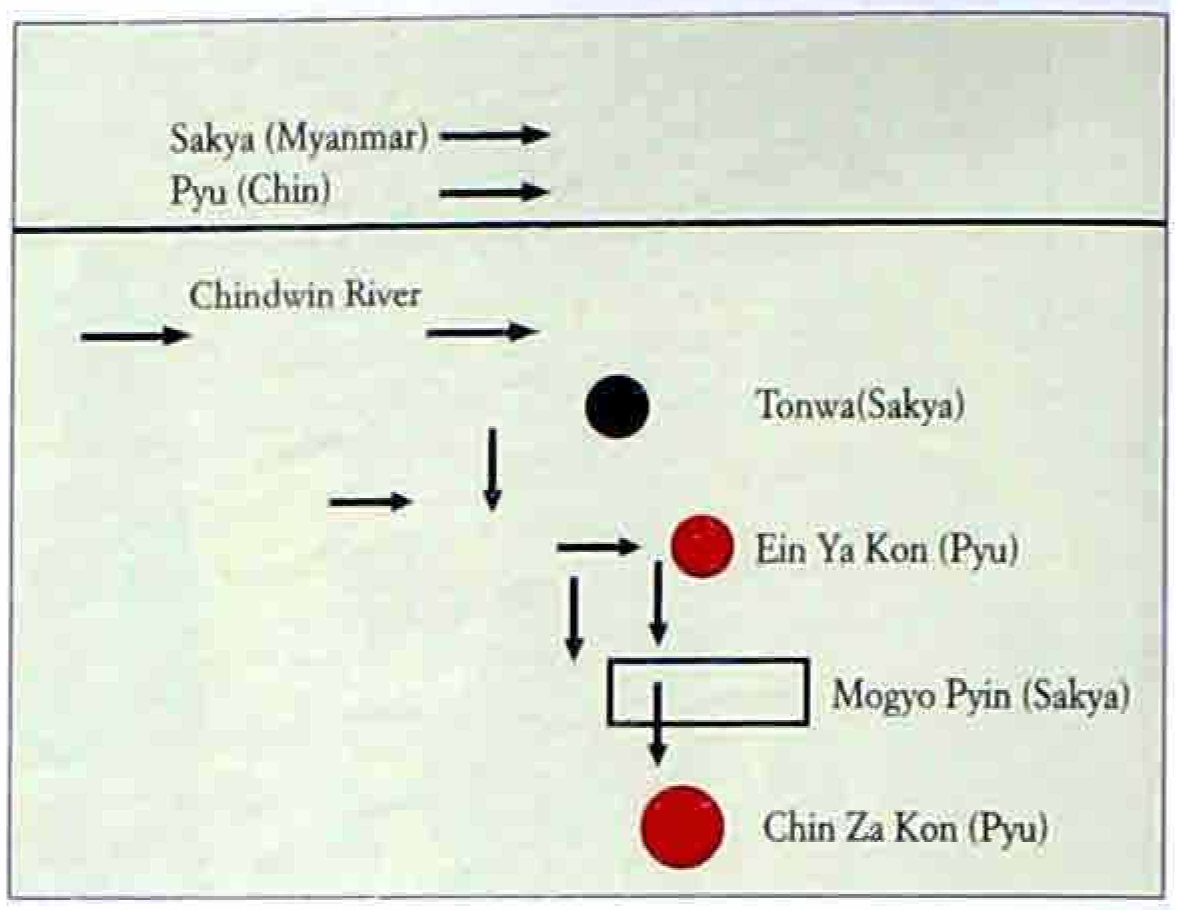
Stone-related beliefs

Polished stone tools from the sites throughout Myanmar that we have described above are called *moegyo thwa* or thunderbolts.[27] The tools are commonly thought to protect against illness, fire and other calamities, with a similar medicinal and protective power attributed to stone tools found at prehistoric sites near Angkor in Cambodia.[28] During a late 19th century expedition to Yunnan via Bhamo, Anderson commented on a parallel belief in bronze tools:

"I was informed at Momein that stone implements turned up in ploughing the fields and that they were occasionally found lying exposed on the surface soil. The belief prevails that they and also bronze implements are thunderbolts, which after they fall and penetrate the earth take nine years to find their way up to the surface."[29]

The record, possibly of peoples preceding the Kachin, is a reminder of how little is known of the prehistory of the many groups inhabiting the upland areas of Myanmar, apparent in the absence of such data here. This gap is considerable given that some 50 years ago 'hill tribes' occupied over 40% of the geographical area of the

Left: The inner rim of a sickle from Mayangon, carved with small teeth-like serrations.



A legend of the Chin at Moegyibyin seen in this sketch, may retain memory of several Tibeto-Burman groups. After information collected by Win Maung *(Tampawaddy)*.

Pottery from Mayangon included a heavy cylindral vessel and part of a pedestal pot. The pottery, stone implements and rings were all found during repairs to a short span of along a canal on the west edge of the village.

Large carved 'megaliths' at Moegyobyin.

country.[30] Luce's study of chronicle references to the Sak-Kantu (Thet, Kadu, Sakya), the Kyan (Chin) and the Pyu (P'iao, Tircul) noted that the Kyan followed the Sak. Luce primarily considered migration down the Ayeyarwaddy, but during the Neolithic if not earlier, different 'tribes' also moved down the Chindwin and Mu. That there were either many more groups or multiple sub-units within these, is suggested by the many Tibeto-Burman groups such as Marhu, Azi, Lashi, Rawan, Phun and others in the Mehkha-Malikha valley of Upper Myanmar.[31] There are also Tibeto-Burman language speaking groups further west with the Mru and Kumi of north Rakhine and the Chittagong Hills.[32] The places and groups in a legend about the Chin at Moegyobyin, while certainly apocryphal in many respects, may retain memory of the intermixing of these many different groups and the potential of ethno-archaeological research. This is particularly the case in relation to the use of large and thus not easily moved pieces of stone.

Amongst the early 20th century Chin, beliefs linked to the efficacy of stone included the erection of a stone and the planting of a tree to denote the founding of a new village.[33] In several villages, grave vaults were marked by large upright stones and carved posts. And while the origin story of many Chin groups is connected to a cave or hole in the earth, some Falam groups speak of emerging from the rock.[34] Legend links the Chin to the site of Moegyobyin (Chin Sa Kon) we discussed earlier, one of several villages founded after Sakya descended from Tagaung to the Chindwin. Following an episode where they angered the gods, Chin of one village buried all the treasure in a well covered by a massive stone lid and sacrificed

In the Samon Valley, the abundunt carnelian was used to make beads in the Bronze-Iron Age. *(T&Q collection)*

Neolithic tool from the walled site of Kawparan, Mudon Township, Mon State. This region, south of Mawlamyine, has a number of walled sites with documentation of surface finds underway.
(Photo San Win)

themselves.[35] Easily dismissed as legend, the allusion to multiple Tibeto-Burman language-speaking groups and the stone lid are worth noting given Chin ethnographic customs and the presence of a number of megalithic stones at Moegyobyin. Three pieces (33 x 62 cm, 45 x 205 cm and 32 x 94 cm) kept at Monywa University were found together at the site and many others were seen *in situ* by the author in 1999. Some appear to have been arranged in pairs, one piece laid flat on the ground and the other erected vertically to form a backing for what is regarded locally as a 'seat.'

The Myogyobyin finds are not the only ones in the Lower Chindwin. For example, at Myotha, 70 km to the southeast, some 40 sites with slabs and pillars were recorded in 2003 by Win Maung (Tampawaddy) and later Hla Gyi Maung Maung of the Department of Archaeology. The square structures some 1.5 metres in height, were found adjacent to upright slabs and a layer of pebble stones. Another site has been provisionally identified in the same region, at Nabu-aing (Pinle) where a series of upright stone pillars surround a horizontally placed slab.[36] A similar cemetery arrangement is seen at Kyauk Saga, one of the traditional 19 Pyu villages of Bagan.[37] Near Okaing, at the foot of the Twintaung crater, a flat barren area of with an arrangement of massive boulders are known as *Yatheit Kon* or 'hermit hill.' Also near Monywa, by Kyaukka, is a circle of stones (3.0-3.5 m high) associated with bronze implements, and at Mingwedaung, a systematic arrangement of some 60 blocks of stone laid horizontally at a burial ground.[38]

Heaps of stones and slabs mark the landscape around Myotha in the Lower Chindwin.
(Photo Win Maung (Tampawaddy))

These finds suggests several important points. One is the potential role of megaliths in defining the Neolithic at least in the Lower Chindwin and Middle Ayeyarwaddy, something we return to later when discussing 'megalithic' examples at the walled sites of Upper and Lower Myanmar. Another is the transporting of often massive stones for what appears to be ritual purposes. And although the practice was clearly made feasible by the availability of suitable local stone, its use may have been linked to particular groups. For instance, there may have been, earlier habitation of the central plains by multiple 'indigenous' groups possibly mixing with Thet and Chin moving down the Chindwin and the Pyu tribes coming down the Ayeyarwaddy.[39] In this context, the ethnographic use of what may have been perceived as 'supernatural' qualities of the large stones, perhaps an ability to possess such permanence through implantation with the deceased, conceivably derives from earlier rituals. The implied belief in the efficacy of stone, seen as well in the values attributed to *moegyo thwa* could also have been a factor in the range of ring types to which we turn below.

Opposite: The Myotha site is one of a number in the Lower Chindwin where use has been made of local stone for what may be burial sites.
(Photo Win Maung (Tampawaddy))

The stone rings found in Upper Myanmar vary, from round bangles to a range of geometric shapes. *(T&Q collection)*

Rings of stone and other materials

Rings made of terracotta, stone, bronze or glass have been recorded at sites in many different regions of Myanmar:

Chindwin Neolithic and bronze-using sites such as Nyaunggan.

Samon bronze-iron sites around Beinnaka.

Myit Nge (Dhotawaddy) Neolithic/iron-using sites such as Taungthaman.

Mu valley Neolithic/bronze-iron areas of the walled site of Halin.

Lower Myanmar coastal sites such as Mayangon by Thaton.

Although we have been concerned with the Neolithic in this chapter, it important to discuss the variety of rings at this point for several reasons. For one, different ring types are often lumped together as 'rings.' In literature about rings in Thailand, references to Myanmar examples are taken to mean that they are similar to the circular t-section bracelets found in Central and Northeast Thailand. Within Myanmar, literature referring to rings often stems from ring stone (*Kyauk gwin*) sections that were among the finds Movius called 'Post-Anyathian.' These were recovered along with small scrapers, points, blades, celts and choppers. They were mostly made from basalt, slate, fine-grained schist or fossil wood, or silicified tuff of the Popa region.[40] The resources around Popa were exploited along the Samon, for as we will see in the next chapter, the fossil wood and semi-precious stones were used for beads of the bronze-iron as well as walled sites.

Another reason for including later rings in our discussion of the Neolithic is to again emphasise the many outstanding problems about the categorization commonly in use. Discrete cultural entities are implied by not only the term Neolithic, but bronze, bronze-iron, iron and so-called Pyu and Mon cultures. Based on data presently available, there does seem to be a distinction between artefacts found in different valley regions such as the Samon, Mu and Chindwin. While a geographical nomenclature is appropriate given our focus on the landscape, it is obvious throughout this book that these are fluid and provisional cultural zones. Many hypotheses presented here may change with further research, for there has been minimal exploration of many sites called 'Neolithic' simply based on the absence of metal finds. In Lower Myanmar, the exploration of the Neolithic has been even less than in Upper Myanmar. Adults from Mayangon near Thaton, for example, recall playing games during their childhood with the stone artefacts from the site but always selling any bronze objects found.[41]

Polished stone tools from Taungthaman.

Chindwin-type ring stones

Ring stones from the Lower Chindwin are all are made of stone and distinctive for their range of shapes. They may be round, oval, egg-shaped, triangular, square, rectangular, or round with multiple points.[42] Some rings have small holes drilled in adjoining sections, allowing repair, possibly with bronze wire.[43] Although sometimes called bracelets, a rings excavated at Nyaunggan were found on the various parts of the body.[44] For instance, one burial (NW7/NKII) had three rings, one under the upper left shoulder, one on the pelvic area, and a third underneath the left arm.[45] Many of the Chindwin rings are made from serpentite or silicified tuff, although sandstone is occasionally seen. The stones range in colour from black, grey or green to brown or white. The variety of shapes, their placement on different parts of skeletons, and a tendency for a find to contain a number of shapes all indicate ritual use. The inner hole rim of most Chindwin rings is bevelled although a group of rings from Ywatha and nearby villages such as Mingwedaung, Moktaw and Aingdaung have a t-section and are circular. In general, the Chindwin-type rings are more restricted in their distribution than the circular t-section ones in the Samon valley. This is also the case with the small but important sample of rings described earlier from Mayangon, Lower Myanmar. These are akin to rings at Thai Bronze Age sites such as Ban Lum Kao and Nong Nor, the latter with dates of 1,100-600 BC. The outer diameter of 11 cm for many of the Nong Nor rings is also similar to two of the Mayangon rings having an outer diameter of 8-10 cm.[46]

The t-shaped rings may be smaller than the Chindwin-type, although more data is needed to confirm this. For instance, the outer diameter of a sample of 47 rings from Nyaunggan and Halin ranges from 4.9-23 cm although the variation of the inner hole diameter is less (3-7 cm). The ring hole is always a circle, but not always centred. The holes were probably made with bamboo, similar to traditional methods documented by Win Maung (Tampwaddy) that employ a section of bamboo with a sharp bevel on one end. The bamboo is kept steady by wood brackets and then turned with a rope or strap twisted around the midsection. Sand and water are used as grinding materials. As the bamboo becomes dull, it is replaced by another section. Stone was most likely used with the t-section rings to obtain the smooth finish of the inner circle, which Win Maung (Tampawaddy) suggests possibly was a later development.[47]

The many shapes of the Chindwin bevelled rings and the usually circular Samon-Lower Myanmar-Thai t-section rings thus may imply different or sequential traditions of manufacture if not ritual. Although more data is needed to verify this hypothesis, the technical distinction is also supported by a height of *circa* 3 cm for the inner discs from Mayangon versus 0.4-1.5 cm for inner discs measured by the author around Okaing in Lower Chindwin. While the Mayangon sample is admittedly small, there is a gap of *circa* 3-5 mm between the inner discs and the inside rim of the collar, something not found in the Chindwin where discs sit comfortably within the rings. If further research sustains this observation, it supports the sequential hypothesis, with the gap being the result of grinding with stone once holes were cut with bamboo. Inter-regional trade at different periods is also suggested by the finds of some Chindwin stone rings and glass 'imitations' in the Samon, as well as the t-section rings found near Ywatha along the Lower Chindwin.[48] The location of villages such as Aingdaung (22°21'N, 94°59'E), at the junction of Chindwin and the Chaungmagyi stream, would have been favourable for the development of exchange networks. Rings may well have been traded to Thailand as well, where they would have been among the 'exotic' stones found in similar rings at Nong Nor and Kok Pleb.[49]

There are also 'agricultural' rings, which are thick (5-10 cm) donut-like shapes *circa* 10-15 cm in overall diameter. To date, these have only been found in Upper Myanmar. The central holes are small, about 2-5 cm. Sankalia and others have suggested that these were used as weights for digging, citing an analogous case in ancient Russia, where such weights were used for fishing nets.[50] Unfinished stone rings from the southern Shan States seen by the author, however, indicate that in Myanmar at least, thick rings in some cases may be pre-forms for later polished stone rings.

Morris suggested Chindwin-type ring stones were used as grinding wheels for making Neolithic stone tools.[51] Myint Aung, doubtful given the many shapes, cited a proposal by Than Tun linking multi-pointed pinion rings with solar veneration. This was based on the finding of pinion rings at Halin, Taungthaman and Letpanchibaw. The Letpanchibaw ring was broken with only two points left, but the others each had nine points, the one from Taungthaman being 18 cm overall diameter. These are long spiked points, while a white stone ring from Kha Bo, Wundwin, in the Samon, has two rows of eight points, the outer ones rounded and the inner ones triangular.[52] Taking the solar hypothesis further, it is possible that ring shapes were related to planetary veneration. Objects connected to the forces of nature and the spirits of departed ancestors are seen, for instance in shamanistic ritual practices noted in Nanchao.[53] The black and white line designs on fossil wood that we consider in the following chapter may likewise be related to traditional alchemy formulas and ritual practices.[54]

White stone rings from Samon region. Lower ring from Myauk Mee Kon (10 cm). *(T&O collection)*

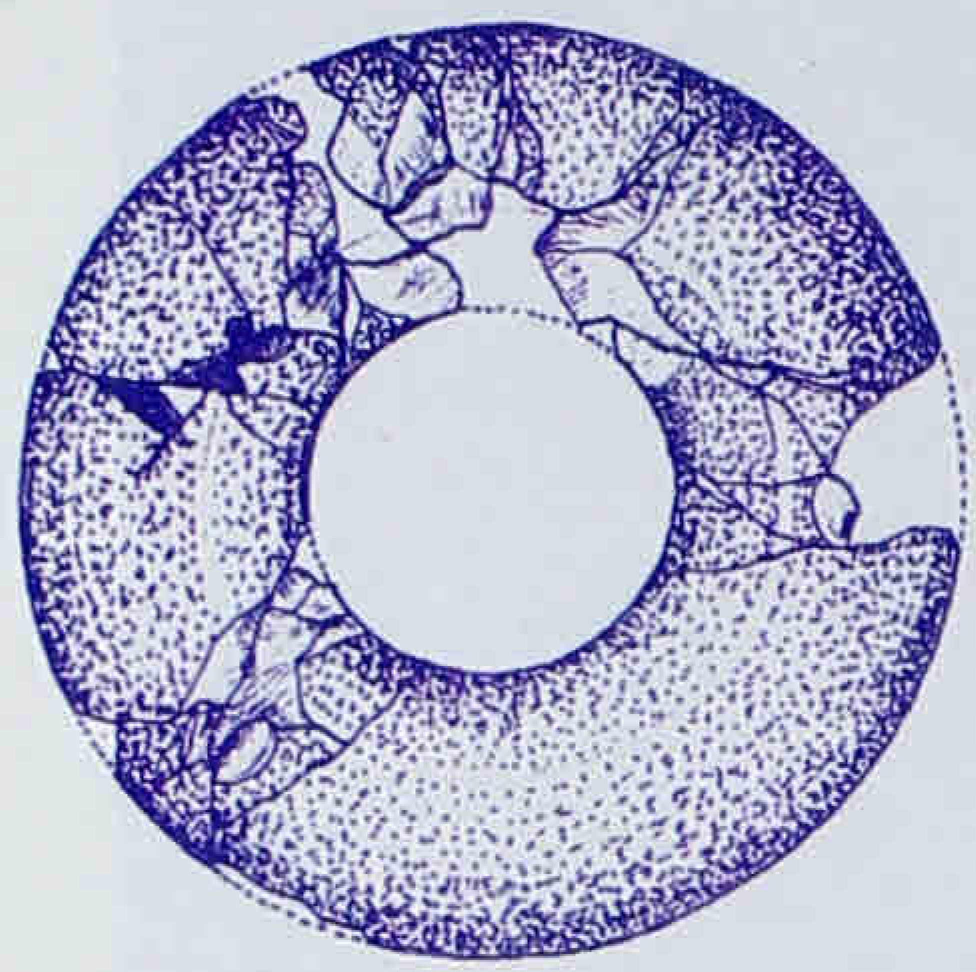
Stone implements from Upper Myanmar including thick donut-like rings. *(T&Q collection)*

Samon to Halin - stone, glass and bronze rings

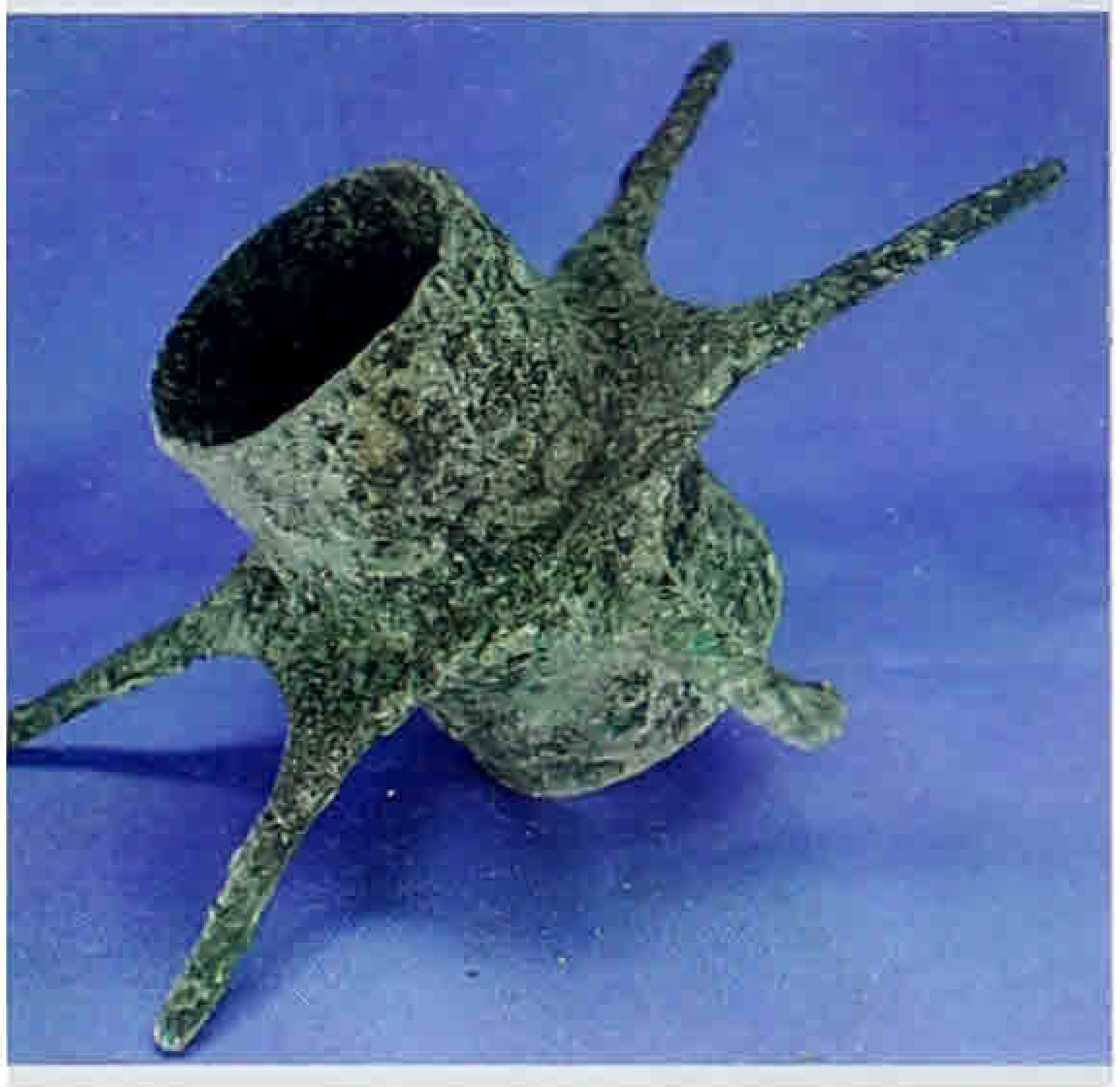
Samon-type rings are distinctive for their range of materials including stone, glass or bronze. There are a number of bangles, with one blue glass ring having six bangles fused together. While some smaller round rings are also found in the Chindwin, the bangles, glass rings and the few unusual bronze examples of the Samon have not been found in the Chindwin. In addition, the few egg-shaped and triangular rings in the Samon region, as we suggested earlier, may have been traded from the Popa or Chindwin regions. Both the Chindwin and Samon ring types are found at Halin.

Geographically, Halin's artefacts should be closely linked to those of Tagaung, but this is not the case, suggesting a Chindwin-centred origin for Halin, later widened east up the Myit Nge River, and Yunnan influence for Tagaung. The only roughly parallel rings to the Chindwin are to the north, but those seen by the author to date are only square with rounded corners. While some are from Yunnan sites such as Lijiashan and polished stone circles with t-sections were found at Shizhaishan, others are from northwest China.[35] At Sha Fu (T'uong) or 'Buddha's cave,' in southwest Yunnan some 40 km from the Myanmar border, six stone rings with points, and other ring fragments were excavated. Other artefacts from this cave site in the face of a cliff included burnished pottery with curvilinear designs with the site associated with an incipient agricultural phase of the Late Neolithic *circa* 1,000 BC.[36] One

Stone ring from Samon with bones embedded in soil. *(T&Q collection)*



Blue glass ring from the Samon Valley culture.
(Win Maung (Tampawaddy))



Bronze spiked ring from Halin region.
(T&Q collection)

circular grey speckled stone ring (15 cm diameter with a 4.5 cm hole) from Taungthaman has been likened to *bi* shapes, with a round blue glass ring of similar dimensions found recently in the Samon.[57] Various affinities are seen also to rings from Kok Pleb, Ratchaburi. Rings of stone, shell, bone were recorded at Kok Pleb as well as bronze bracelets and stone ear pendants.[58] One of these is a long tubular bronze ring with multiple spikes, akin to a bronze spiked ring from Halin having a 10 cm-long tubular section bearing spikes *circa* 7 cm in length.[59]

In summary, there are many more shapes and materials for rings found in the Samon to Halin region than in the Chindwin. Indeed, our discussion of similarities in rings from Halin, Lower Myanmar and Thailand highlights the limitation of our use of the term 'Samon' to describe these. Of these disparate regions, the greatest chronological span exists in the artefacts from Halin but in light of the affinities to Thai artefacts, an equally early and expansive Neolithic to bronze-using transition is likewise credible in Lower Myanmar. As we stated in the introduction, the contention here is not for a cultural nucleus from which all others emanated, but for development in river valleys branching out across all regions of the country. There are many other artefacts that typify the Neolithic in Myanmar, that we mentioned in the site summaries above. However, we have focused in this discussion on the 'megalithic' pieces and the ring stones as best expressing the correlation between local ecologies and earth-oriented belief systems for it is a theme we return to in the final chapter.

Summary

The ecological adaptations of the Neolithic are illustrated in Upper Myanmar by Moegyobyin-Htaukmagon in the Lower Chindwin, Letpanchibaw on the Middle Ayeyarwaddy, Taungthaman-Shwezayan on the Myit Nge and in Lower Myanmar by artefacts from Donwun, and Mayangon-Hsinbyukyun near Thaton. The results of man's changing relationship to the environment can be seen in growing wealth from varied cultivation modes and exchange of valued exotic stone types and forms. Interchange is also apparent in similar designs on pottery from diverse sites such as Letpanchibaw, Taungthaman, Donwun and Hsinbyukyun to wares from Vietnam, Thailand and Malaysia.

Lower Chindwin sites like Moegyobyin-Htaukmagon are notable for their use of local volcanic stones for adze/axes, pounders and ring stones. There has been no excavation of a Neolithic cemetery to compare to Nyaunggan where stone artefacts typical of so-called Neolithic sites were excavated together with bronze weapons. Droplets from copper manufacturing at Okaing suggest small-scale exploitation of local resources, a development probably accompanying expanded cultivation of cereal crops in the fertile volcanic soils in this region.[60] At Shwezayan and Taungthaman, as well as Letpanchibaw, igneous stone tools are replaced by limestone and metamorphic materials. In the Samon valley, tools no longer include pounders and tend to have more elongated proportions. Within a regional exchange context, the Neolithic timeframe of *circa* 4,000-300 BC and *circa* 2,500-700 BC may both prove to be somewhat too early. However, dates such as 1,100-600 BC from Nong Nor suggest that with more data, the Bronze-iron dates of *circa* 700 BC-400 AD may be too late and that the Samon was only one of a number of regions exploiting local resource bases to participate in growing trade networks.

Much remains to be learned about the transition from the Neolithic to the early metal-using cultures throughout the country. This is a vital area of future research given the occupational continuity seen for instance, Moegyobyin-Htaukmagon. Artefacts there probably span the Late Palaeolithic to Neolithic, although controversy remains as to whether the early tools are not simply naturally weathered stones. But also at Letpanchibaw, Taungthaman, Shwezayan, Donwun, Mayangon-Hsinbyukyun and Tanintharyi, there is evidence of not only Neolithic but much later occupation. Similarities in rings and pottery from these sites to other regions highlights the need to revise existing definitions not only of the Neolithic, but bronze (or chalcolithic), bronze-iron and iron periods and begin to define localised ecological adaptation and exchange networks.

FOOTNOTES

[1] Higham and Thosarat 1998: 67
[2] Pe Maung Tin and Luce 1960: 28-43; Win Maung (Tampawaddy) pers. comm. January 2006
[3] Pautreau 2006
[4] Thaw Tint and Sein Tun 1985: 24
[5] Aung Thaw 1976
[6] Than Than Thein 2004
[7] Moore and Win Maung 2006
[8] Hudson, Nyein Lwin and Win Maung 2002: 18; Win Maung (Tampwaddy) 2000-2001
[9] Myint Aung 1974
[10] Myint Aung 1974
[11] Gutman and Hudson 2004: 152
[12] Win Maung (Tampawaddy) 2000-2001: 112, Fig. 4
[13] Higham and Thosarat 1998: 77-78
[14] San Win 1986, Drawing 15
[15] Phasook Indrawooth, 1985, Figs 17, 19/2
[16] Win Maung (Tampawaddy) 2003: 77
[17] Hudson 2004: 63; Higham & Thosarat 1998: 67, 80, 83; Higham 2002: 83-105
[18] Win Maung Tampawaddy 2006
[19] Stargardt 1990: 16
[20] Stargardt 1990
[21] Aung Thaw 1976
[22] Ko Ko Kyaing 2003: 53, 59
[23] Higham and Thosarat 1998: 78
[24] Win Maung (Tampawaddy), pers. comm. 2003
[25] Phasook Indrawooth 2004: 130
[26] San Win 2002; San Win pers. comm. 2006
[27] Myanmar Language Commission 1993: 346
[28] Moore 2006
[29] Anderson 1871: 410
[30] Stevenson 1945: 4
[31] Moore and Win Maung (Tampawaddy) 2006
[32] Gutman and Hudson 2004: 151: Luce 1985
[33] Sakhong 2003: 25
[34] Carey and Tuck 1896: 142, 148, 193, 199; Lehman 1963: 192
[35] Recorded by Win Maung (Tampawaddy) in 1999 from U Po Sa, 84 years old, Moegyobyin
[36] Win Maung (Tampawaddy), pers. comm. August 2005
[37] Win Maung (Tampawaddy) 2006
[38] Thaw Tint and Sein Tun 1985: 30, 47-49
[39] Moore and Win Maung (Tampawaddy) 2006
[40] Movius 1943: 378-382
[41] San Win, pers. comm. 2006
[42] Moore & Pauk Pauk 2001; Nyunt Han, Win Maung and Moore 2002
[43] Nyunt Han 1999
[44] Tha Tun Maung 2002
[45] Moore and Pauk Pauk 2001
[46] Higham and Thosarat 1998: 119, 121, Figure 180-183; 127, Figure 96
[47] Win Maung (Tampawaddy) pers. comm. January 2006
[48] Win Maung (Tampawaddy) pers. comm. July 2004, December 2005
[49] Higham and Thosarat 1998: 125
[50] Sankalia 1964: 85-6
[51] Morris 1935
[52] Win Maung (Tampawaddy) 2003
[53] Backus 1978: 209
[54] Tan 2006
[55] Kansu Archaeological Team 1975; Yunnan Province 1975; Palazzo Venezia 1987: 93
[56] Wang Renxiang 2004
[57] Gutman and Hudson 2004: 155; Tan 2006a
[58] Daieng-iet 1978
[59] Higham and Thosarat 1998: 125, Figure 192; Tan 2006a
[60] Ba Maw et al 1999: 10

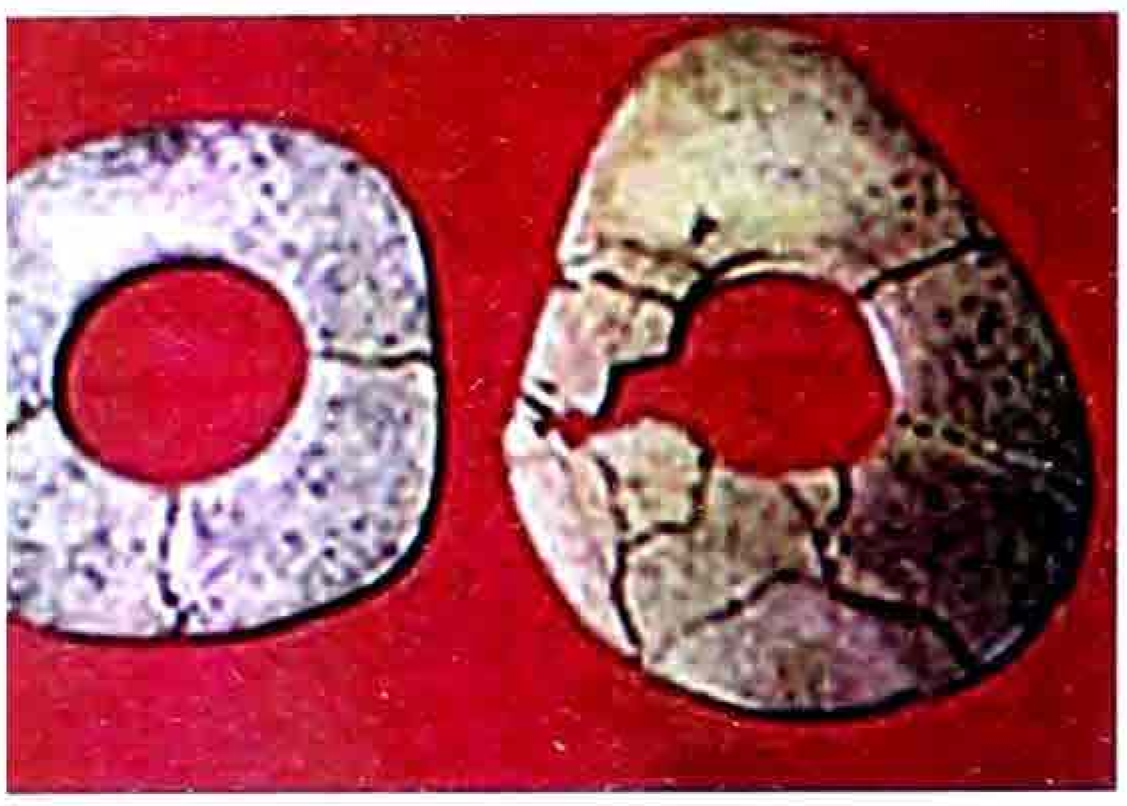
Chapter Four
CHINDWIN AND SAMON CHIEFDOMS

Distribution and dating

Opposite: Climbing Mya Thabeik, Bilin Township, Mon State. The ocean, to the west across rice fields, is visible from the summit.

Bronze artefacts appear to have been made in Upper Myanmar from *circa* 1,500-1,000 BC, dating based on comparison with artefacts elsewhere in the region rather than absolute dates from associated material in excavated contexts. As we discussed in the previous chapter, the separation of the Neolithic from these early metal-using sites is only beginning to be documented. In addition, the provisional era *circa* 1,500-300 BC that we refer to here as the Chindwin bronze-using culture is based mainly on a small sample of bronze weapons excavated in 1998 from a cemetery near Nyaunggan in the Lower Chindwin. These implements appear to precede the more varied bronze-iron artefacts we call the Samon Bronze-iron era and date to *circa* 700 BC-400 AD that are found in the Samon valley and at Halin, located south and north of Mandalay. Several AMS dates from Ywa-din-gon date to 400-200 BC, which fit well with dates from the Dian area where the most well known finely made bronzes are *circa* 400 BC-100 AD.[1] Relative to the number of finds, however, few datable materials have been recovered from the Samon, leading Pautreau to simply date the sites of Hnaw Kan to the Iron Age, Ywa-din-gon to the Bronze to Late Iron Age and Myo Hla to the Neolithic to recent period.[2]

Within the Nyaunggan crater. The landscape is typical of the arid zone; Budalin Township, Sagaing Division.



Rings from 1998 Nyaunggan excavation. Stone square (height 5.8 cm, width 13.5 cm, thickness 1.1 cm, ring hole diameter 7 cm) and oval (height 22 cm, width 14.8 cm, thickness 1.2 cm, ring hole diameter 6.5 cm).
(National Museum, Yangon)

Stone triangle (height 9.7 cm, width 7.5 cm, thickness 1 cm, ring hole diameter 3.6 cm) and section of ring (1.3 cm thick) with holes for wiring together. From 1998 Nyaunggan excavations.
(National Museum, Yangon)

The closest counterpart to some of the later Samon artefacts are those found in at Dian sites such as Lijiashan and Shizhaishan. These similarities are not surprising given the closeness of Upper Ayeyarwaddy to the upper Red River and the Lancang that becomes the Mekong. However, for the most part, exact parallels for distinctive Samon artefacts have not been found in neighbouring regions. When compared to the material from the Chindwin Nyaunggan cemetery, the Samon burials and artefacts exhibit a striking increase in economic and social complexity with wealth concentrated in the hands of a ruling class. While much research is yet to be undertaken, the data indicates that a series of oscillating Samon chiefdoms operated within kinship systems, possibly matrilineal, and mutual obligations.[3]

These varied in hierarchical complexity and with little documentation of their spatial extent, more data is needed before defining settlement size, the habitation-mortuary zone relationships and the extent to which some chiefs exercised authority over smaller dependent settlements. For instance, one of the unique artefacts of the Samon, bronze 'mother-goddess' figures, have so far only been recorded at a relatively small percentage of the many sites where typical artefacts have been found. The quantity of Samon goods at the walled site of Halin is particularly significant, for these finds begin to document the prehistory of the walled site cultures and also questions about the Samon and Pyu that we return to later in this chapter and the next.

Bronze: research and dating

As we noted in the last chapter, Anderson wrote of stone and bronze 'thunderbolts' in 1896 after his trip to Yunnan via Bhamo, In the 1930, T. O. Morris collected a number of bronze celts now held in the British Museum.[4] During the 1826-1948 period of colonial rule, however, there was little archaeological attention given to bronze artefacts. As with the investigation of stone, most finds were made during geological exploration for exportable resources. In the excavations of the 1950s through the 1980s, no prehistoric bronzes were recorded. When iron artefacts were found by Sein Maung U at Taungthaman, there was speculation that there had been no bronze-using phase in Myanmar. Even given the few finds, the wealth of bronze material discovered in Upper Myanmar since the 1990 is striking. Much of this has come about as a result of construction projects aimed at increasing agricultural productivity in the central dry zone. As we noted in the last chapter, the distribution of bronze artefacts in large areas of the country remain little documented and if the material from the Chindwin and Samon valleys is any indication, there is indeed much yet to be discovered.

1988 excavations at Nyaunggan, Budalin Township, Sagaing Division, showing baulks with material left *in situ*.

Twintaung crater is partly filled with water. It is currently a centre of *Spirulina* production.

Nyaunggan and the Lower Chindwin

The main body of data for a provisional early phase of bronze working comes from the excavations of the Nyaunggan cemetery. No charcoal was recovered and testing of bone samples by the author and others failed to yield dates due to lack of remaining collagen. Thus the site has been dated comparatively to *circa* 1,500-1,000 BC, a time span given to the establishment of bronze-working traditions in Southeast Asia. If the Nyaunggan bronzes do signal the beginnings of bronze technology, in the Chindwin at least this did not herald a radical period of change, analaogous to Higham's conclusion on the absence of a sweeping social transformation with the emergence of bronze-using culture in much of the rest of mainland Southeast Asia.[5]

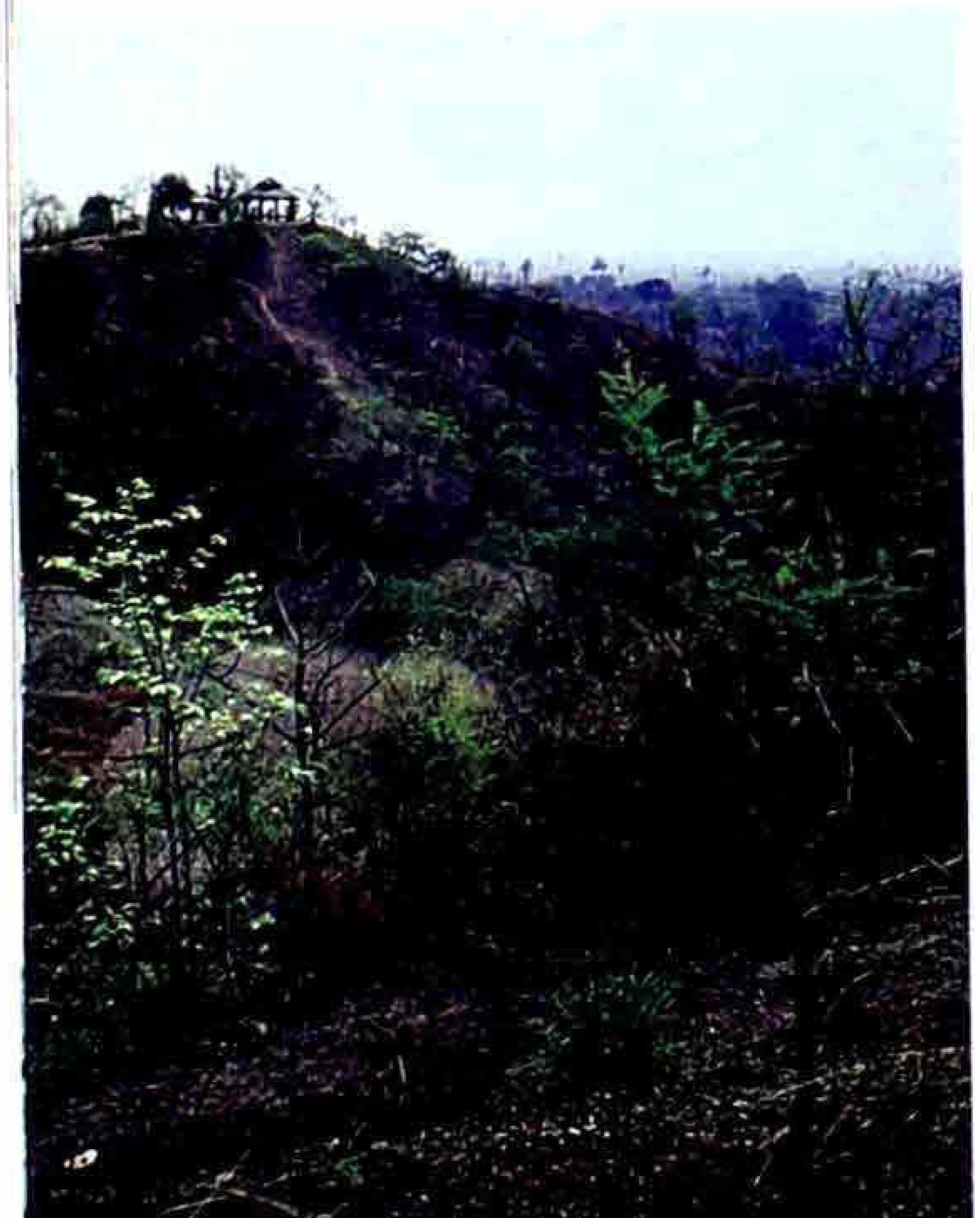
After 1998, when more and more bronzes began to surface, excavations were carried out by the Department of Archaeology at other sites with Chindwin-type artefacts. Several periods of work were undertaken at Nyaunggan, with preliminary pits dug at Monhtoo, In-de and Halin. The principal grave goods at all three sites were pottery, polished stone tools and rings and bronze weapons, mostly axes and swords.[6]

Pottery was the most abundant artefact excavated in the Nyaunggan cemetery, with some graves containing bronze implements as well as the stone tools and rings. As we discussed in the previous chapter, rings and 'distillation' pots similar to those from Nyaunggan are found in the Halin-Samon distribution. The form, however, differs in the two regions, as do double-pointed bronze axes, another Chindwin artefact that appears to have been imitated or appropriated in the Samon.

Village	Township	Division	Latitude x Longitude
Nyaunggan	Budalin	Sagaing	22°24'N, 95°04'E
Monhtoo	Budalin	Sagaing	22°19'N, 95°14'E
In-de	Taungtha	Mandalay	21°15'N, 95°22'E
Halin	Wetlet	Mandalay	22°27'N, 95°49'E

Traditional smelting of copper near Kyesintaung, Lower Chindwin.

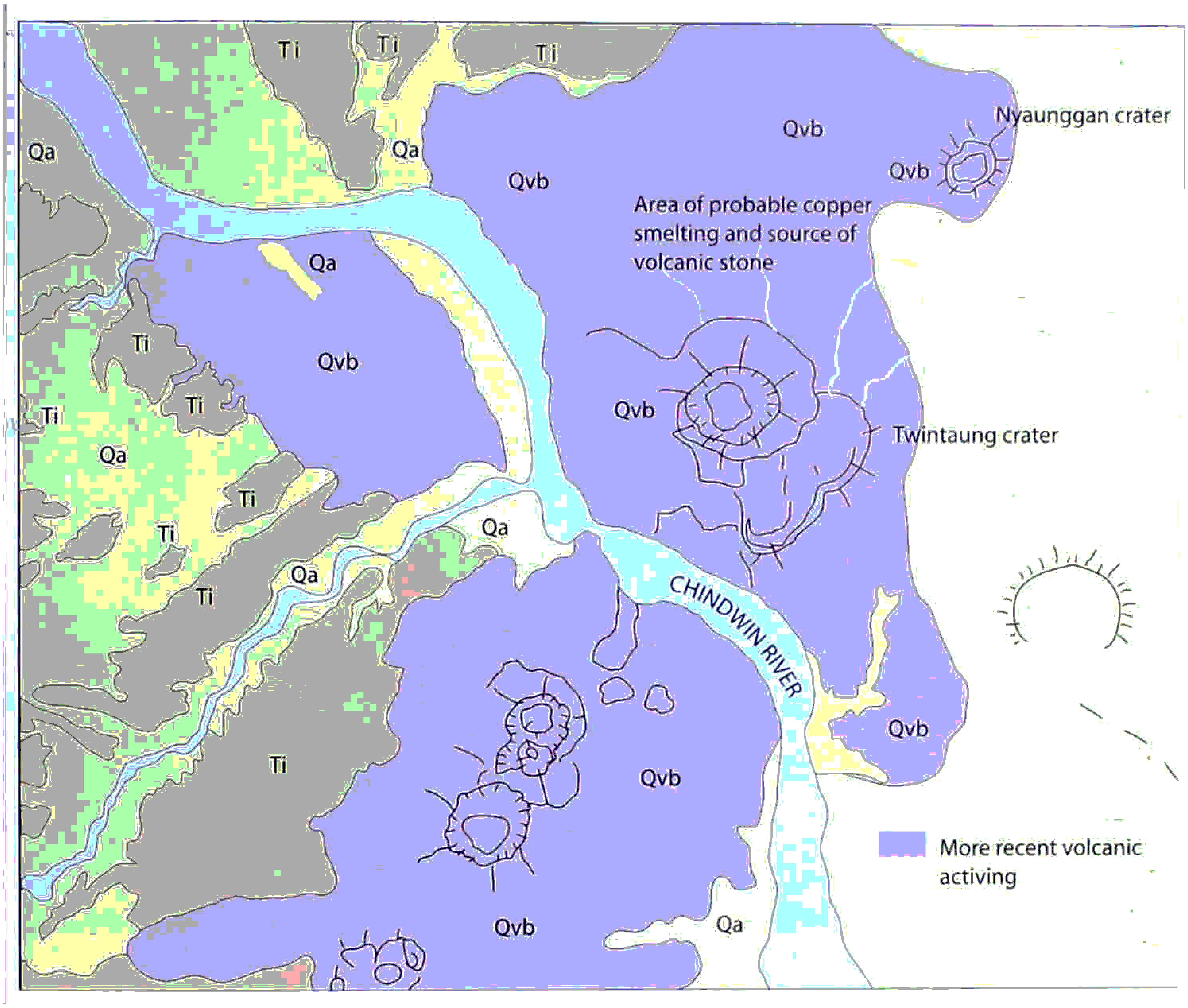
Shin Ma Chauk, small wooden pavilion on tip of crest, at Nyaunggan, opposite excavated area.



Setting

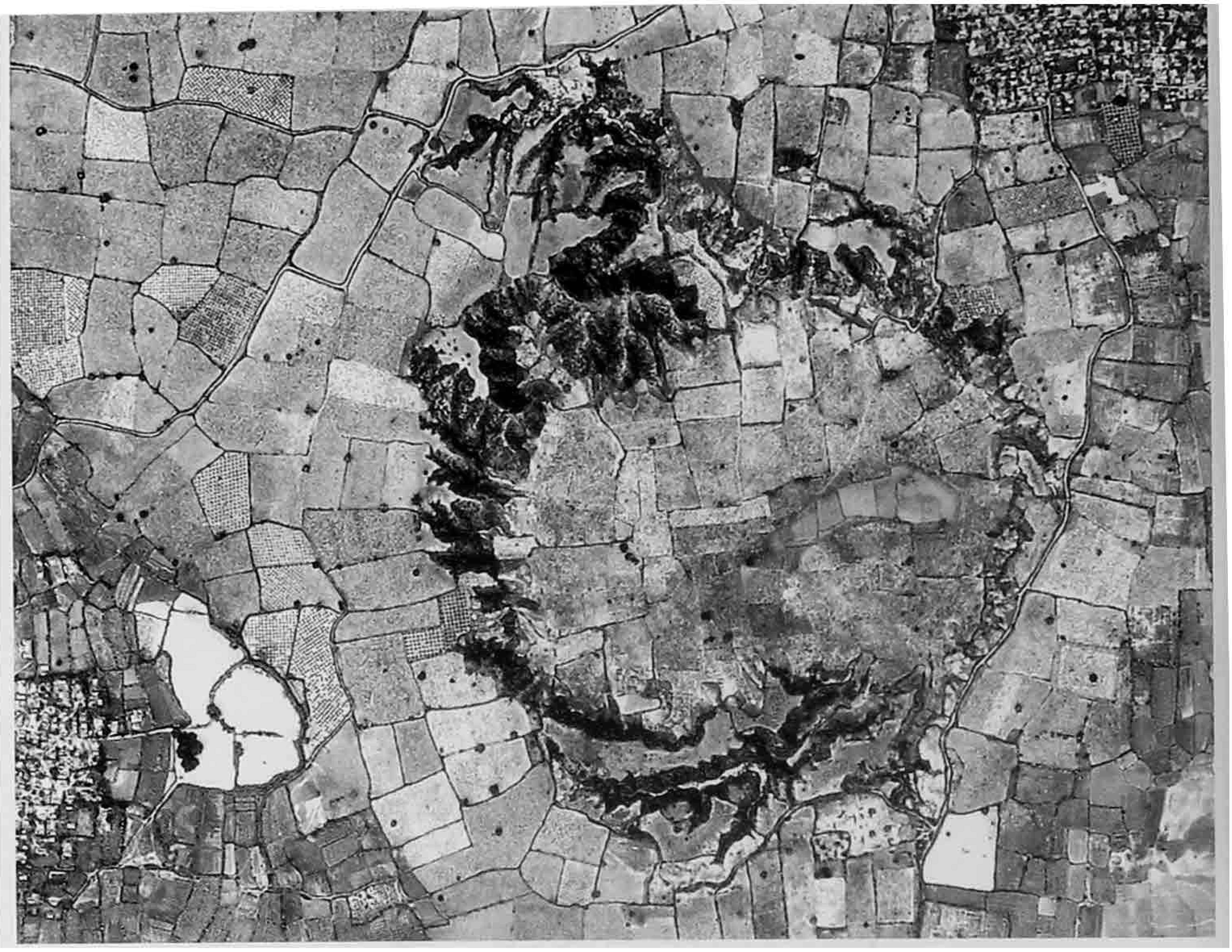
The Nyaunggan cemetery is located on the northwest rim of an low volcanic crater (107 m), 2.4 km southwest of Ywatha village in the Nyaunggan village tract.[7] The taller Twindaung crater (229 m) is located to the southwest of Nyaunggan, part of an line of craters on both sides of the Chindwin that we discussed earlier in relation to volcanic activity in Myanmar. The main rock types in the area are olivine basalt, hornblende-augite andesite, with some quartz diorite, and, especially at Twindaung, pyroxenite. It is a dry region with an average precipitation of 675 mm per annum falling mostly between May and October. Local produce includes millet, groundnuts, sesame and sunflower.[8]

Three large porphyry copper deposits, at Sabedaung, Kyesindaung and Letpadaung are located on the opposite bank of the Chindwin. Ancient smelting here perhaps used methods still seen in the Tampawaddy quarter of Mandalay. In these, copper-bearing rocks are placed on top of a chamber with charcoal. Bellows force air in and the melted ore drips into a pit dug below ground level. Alternatively, the stone may have been crushed, panned, and placed in a solution. Crystals that form on the surface are then baked, more than tripling the natural copper level, which is then easily smelted.[9]



Geological sketch of Nyaunggan and Twintaung showing Holocene and Pleistocene Quaternary deposits (Qa), Holocene Basaltic rocks (Qvb) in area of Pliocene Irrawaddy Formation (Ti). After Ivanhoe Exploration draft map.

The Nyaunggan cemetery spur (75 x 180 m) is part of a U-shaped ridge on the northwest part of the crater rim. On the opposite tip is a small stupa, Nan U Hpaya, with an adjacent is a *zayat* or pavilion dedicated to Shin Ma Chauk (Lady of the precipice), a tutelary guardian. The local name for the crater is Shin Ma Chauk, venerated by a number of surrounding villages and said to have never been occupied due to this *nat*, the 'super-natural' reputation either prompting its earlier use as a cemetery or in part accounting for the reputed presence of Shin Ma Chauk.[10] To some degree this legend was supported by excavations of a brick walled (107 x 122 m) area called Thein Yin Yazagyo between the stupa and *zayat*, for although thought to be a habitation site for the bronze-using cemetery, test pits yielded only 18th-19th century AD Konbaung pottery. In fact, the cemetery area had not been cultivated as local people were aware of the *nat* associations. The land was first farmed by an outsider, Chit Hlaing who began to find prehistoric tools,and in the mid-1990s Win Maung (Tampawaddy) reported the site to local authorities. Chit Hlaing's clearing of the land increased natural erosion and slope, so that the short cemetery spur rises seven metres from the outer edge of the crater to the inner rim. Another consequence of the cultivation was that many burials were nearly at surface level even prior to excavation.

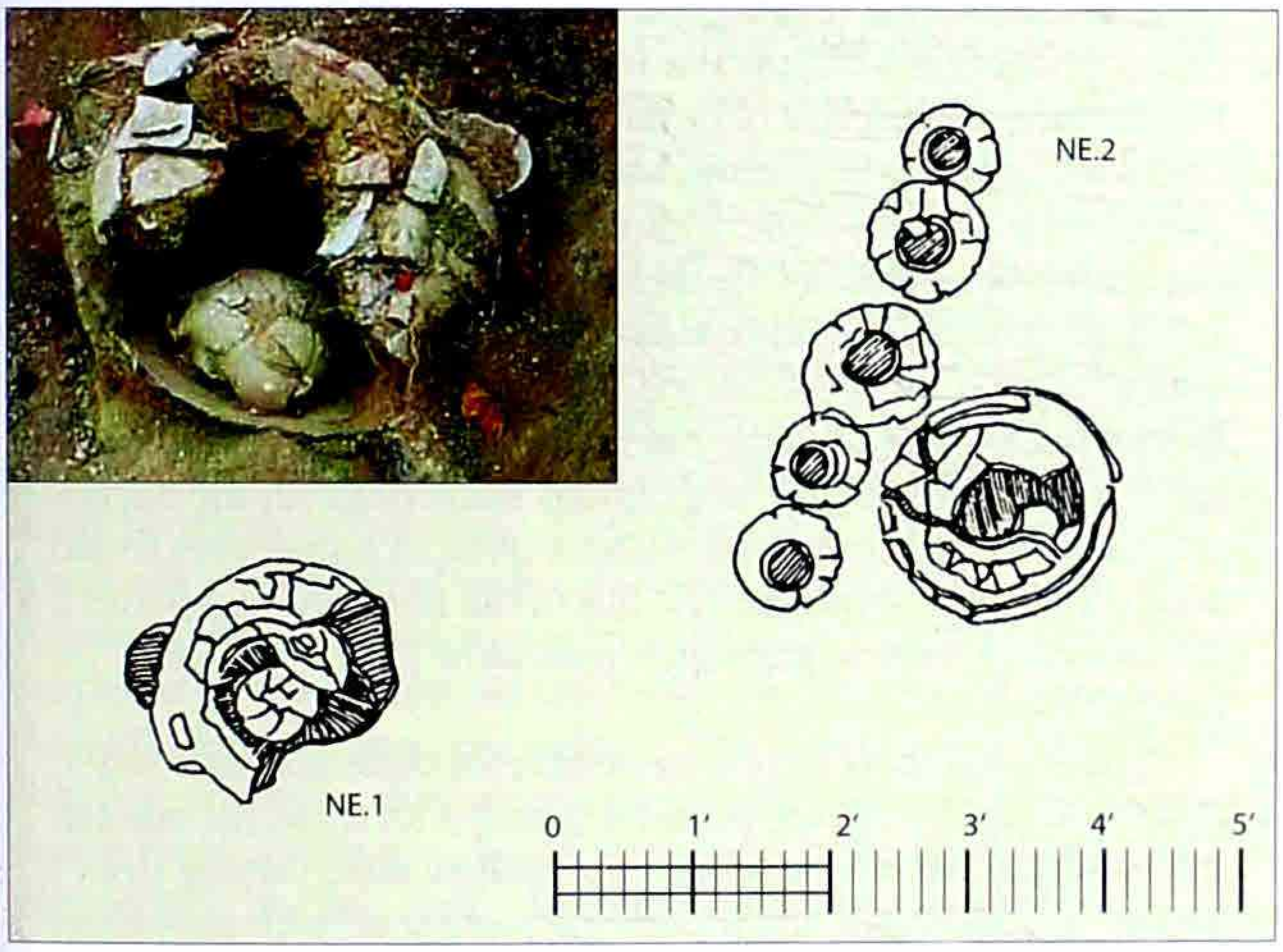


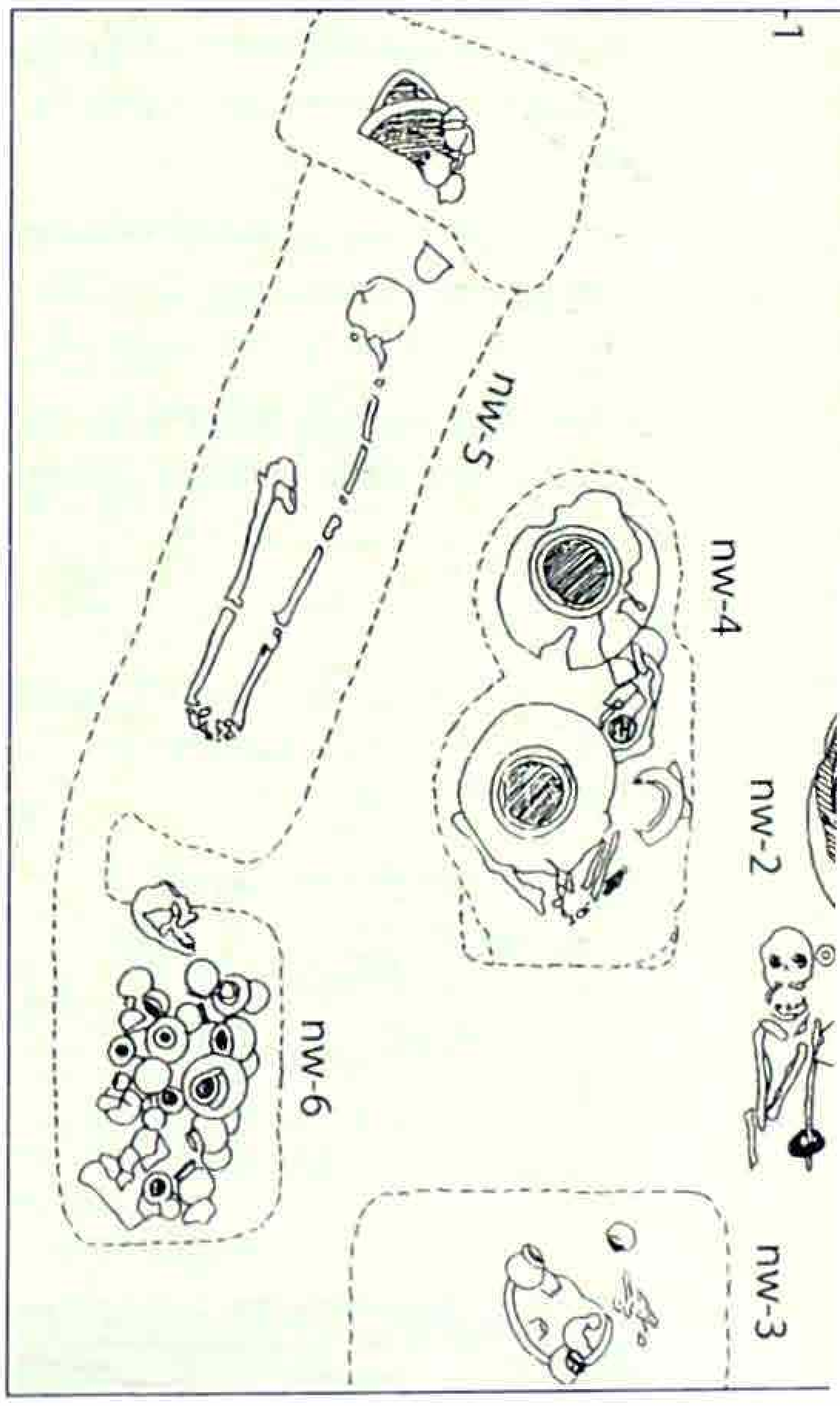
Nyaunggan crater (1:25,000, 1983) wtih excavated cemetery located on northwest rim (triangular white area spotted with trees). Both the Nyaunggan are Twintaung craters have a diameter of just over one kilometre, but Twintaung is higher in elevation.

Excavation pits

Of the four pits excavated in 1998, the largest was the southeast (SE, 8.2 x 24.3 m) where 23 burial features were identified. The majority of bronzes came from this pit, particularly in the middle section. The other pits were of variable size, named in relation to their location on the cemetery spur: northwest (NW, 5.5 x 10.7 m), middle (M, 7.3 x 12.1 m) and northeast (NE, 4.6 x 7.0 m). Four further pits (I-4, I-5, J-4 and J-5), all three metre squares, were excavated in 1999 northwest of the 1998 pits. Forty-four burial features were identified from the four original pits. Most were extended and supine primary burials, 10 cm to 1.5 m below the surface. All but one faced north with the south-facing skeleton popularly thought to have been a stranger to the village. One obvious secondary burial was found, a skull in a large pot but a number of large jars were excavated. Although the contents have not been checked due to site preservation, burial custom in Thailand suggests some may infant burials. Only 23 burial features were complete skeletons, the other 21 being partial remains.[11]

In the 1999 pits, one feature in I-5 yielded a skeleton clearly superimposed on another, separated by almost a metre. However, due to site preservation it is not clear whether the multiple skeletons were buried at the same or different times, with multiple burial phases indicated by finds on the excavated at other parts of the crater rim.





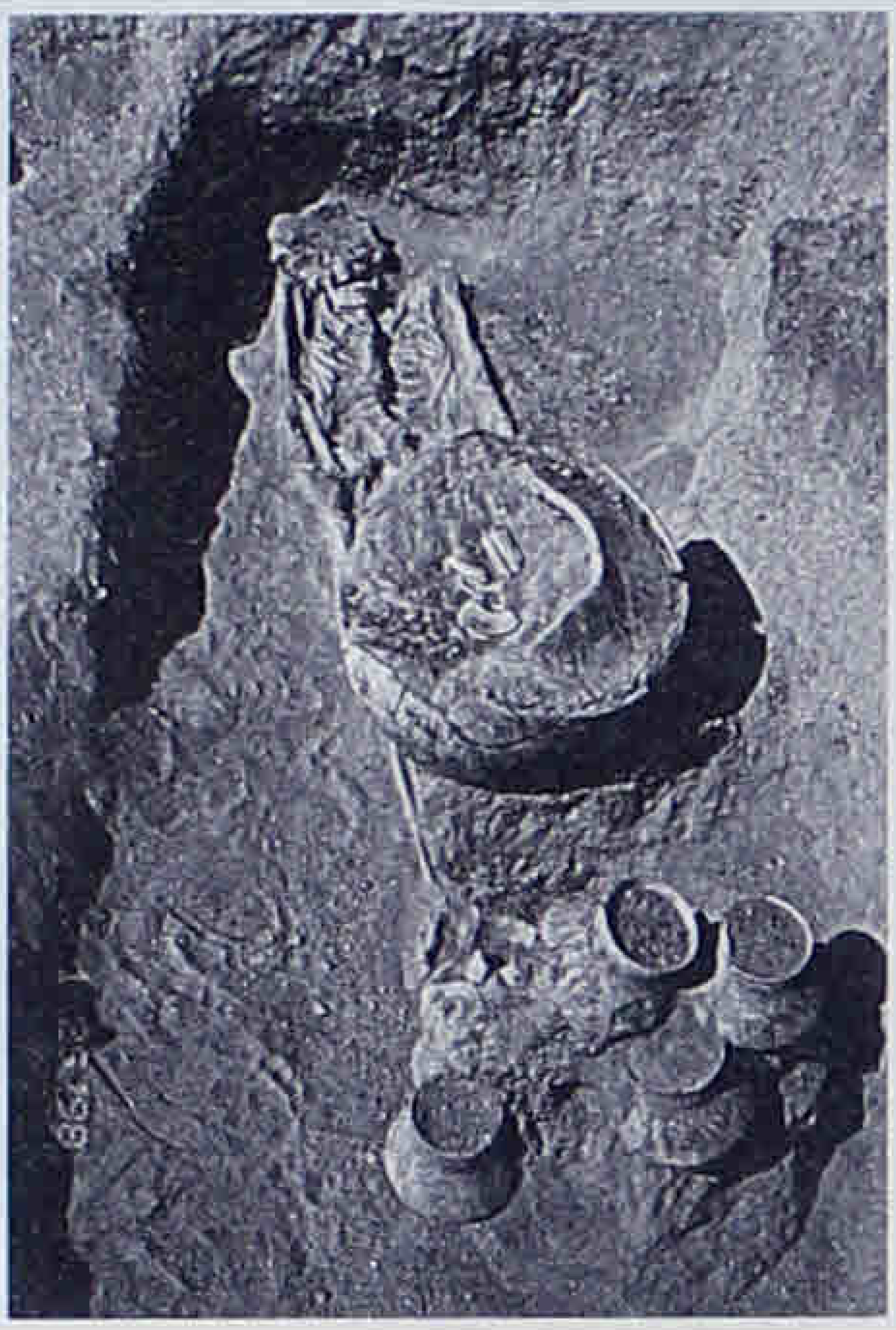
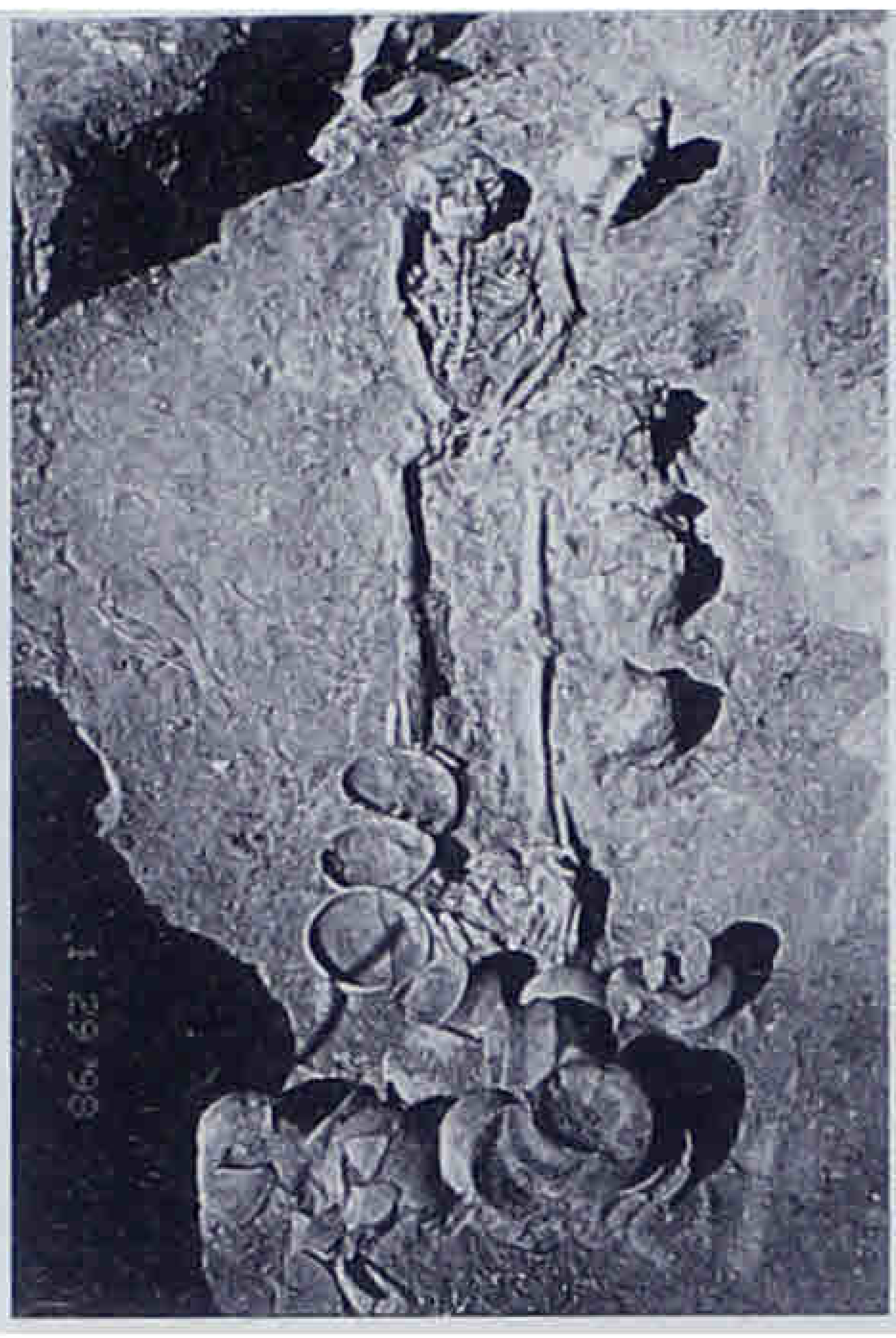
Pottery

Pottery was the most abundant mortuary good from Nyaunggan, with Hudson calculating that there are on average 70 pots of food per funeral at the site. This figure drops considerably at burials in the Samon valley where; at Ywa-din-gon only 10 pots per burial were found, but graves had many other indicators of wealth and status, notably beads.[12] Pottery included small oil lamp dishes, small cylinders (7-10 cm high) with rounded bottoms that resemble ingot moulds excavated in central Thailand, various globular pots and plates, pedestal pots with lugs for hanging (*circa* 15 cm) and a few unique 'distillation' vessels. The few vessels examined show no deposits on the interior but little exploration has been carried out in the potential production area to the south of the cemetery. Globular pots were also found, sometimes in pairs and often over an unexcavated skeleton. Some of these were large, with one from burial SE17, for example being 28 cm high, containing a number of

Top: Views from west and south of the NW pit at Nyaunggan cemetery; showing large pots over skeleton and on left, arrangment of numerous pots at foot of remains.

Bottom left: NE pit showing proximity of pot with skull to linear alignment pots in same pit. *(After Pauk Pauk).* The inset is the detail of the single pot with skull in NE1.

Bottom right: Features of pit NW at Nyaunggan.


Above: Feature SE14 showing arrangement of large pots on pelvis and thighs and small pots clustered at foot.

Above middle: Feature SE23 showing arrangement of large and small pots along side and at foot of skeleton.

Above right: Feature NW10 with ring on pelvis and under left arm visible.

Below left: Nyaunggan Pit J-5 skeleton with medium and small pots at shoulder.

Below middle: Several layers of inhumations and pots (Pit I-5), excavated in second series of excavations at Nyaunggan.

Below right: SE pit with pots over skeleton at Nyaunggan.

smaller vessels. Due to site preservation, skeletons have been left *in situ* under layers of pots but in the 1.5 m excavation of I-5 pit, for instance, three levels of burial can be seen. Four types of burial features can be distinguished in the remains as they are preserved at the site: those with no associated pots, ones with pots at the same level as the skeleton placed at the head and foot, 1-2 large pots over an unexposed skeleton, and skeletons covered with a 'blanket' of small and medium globular pots. Given the lack of full excavation, little can be said about the relationship of the last two types to bronze tools and stone rings. In the SE/NK pit, most affected by erosion, all four types of burial were found within 18-30 cm of the surface, but to the north in the J-4 and I-5 pits skeletons with no associated pots were 1.1-1.3 m below ground level.

'Distillation' pots were excavated from three features: NW3, NW6 and SE15.[14] All are pedestal vessels with three flat conical or cylindrical tripods mounted on a shallow dish, varying from 4-48 cm. In some cases, the tripods are perforated with anywhere from one to eleven holes (0.5-2.5 cm) on the top, and open at the



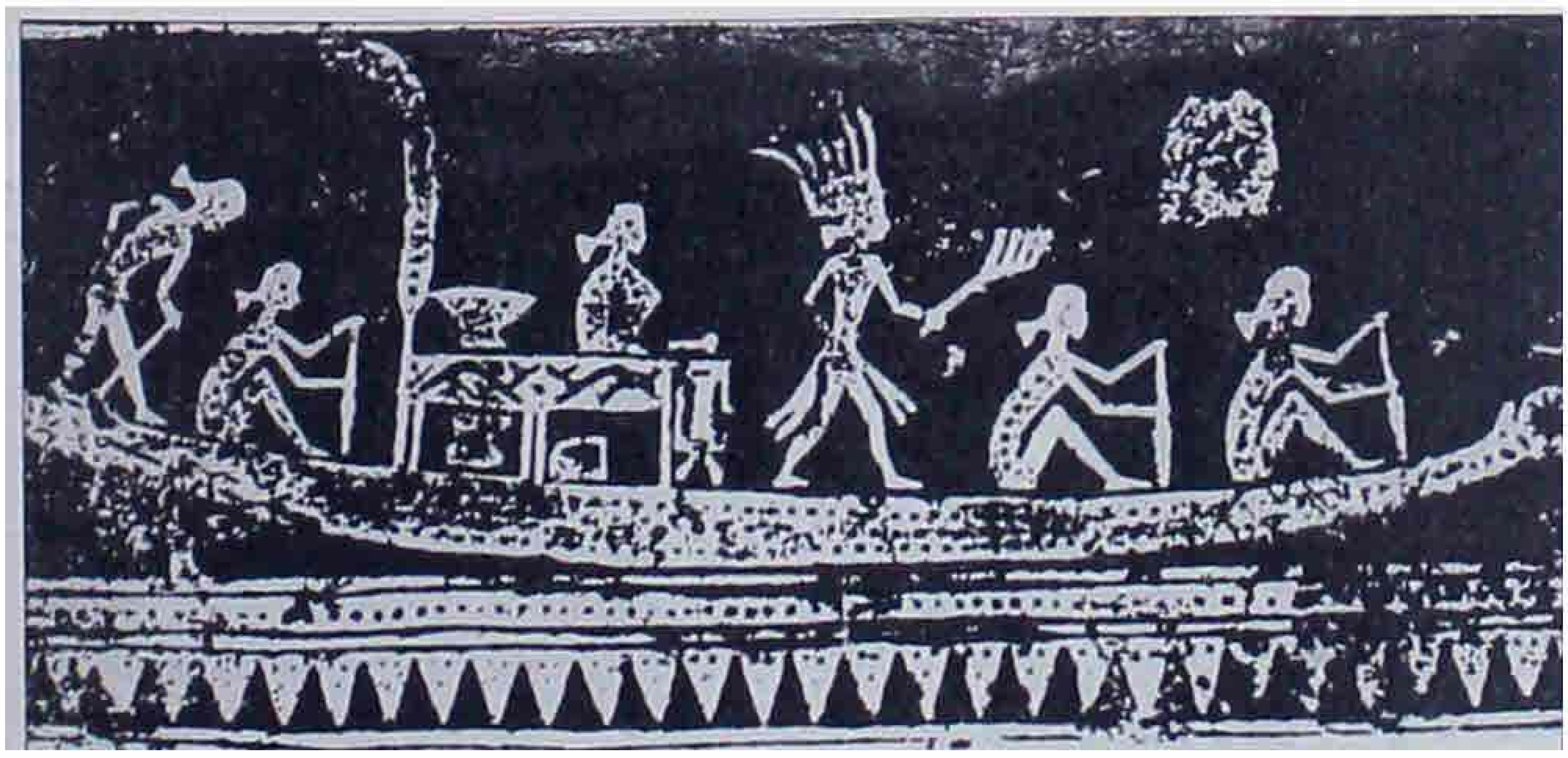
Top left: Closeup of skull in J-4 pit.

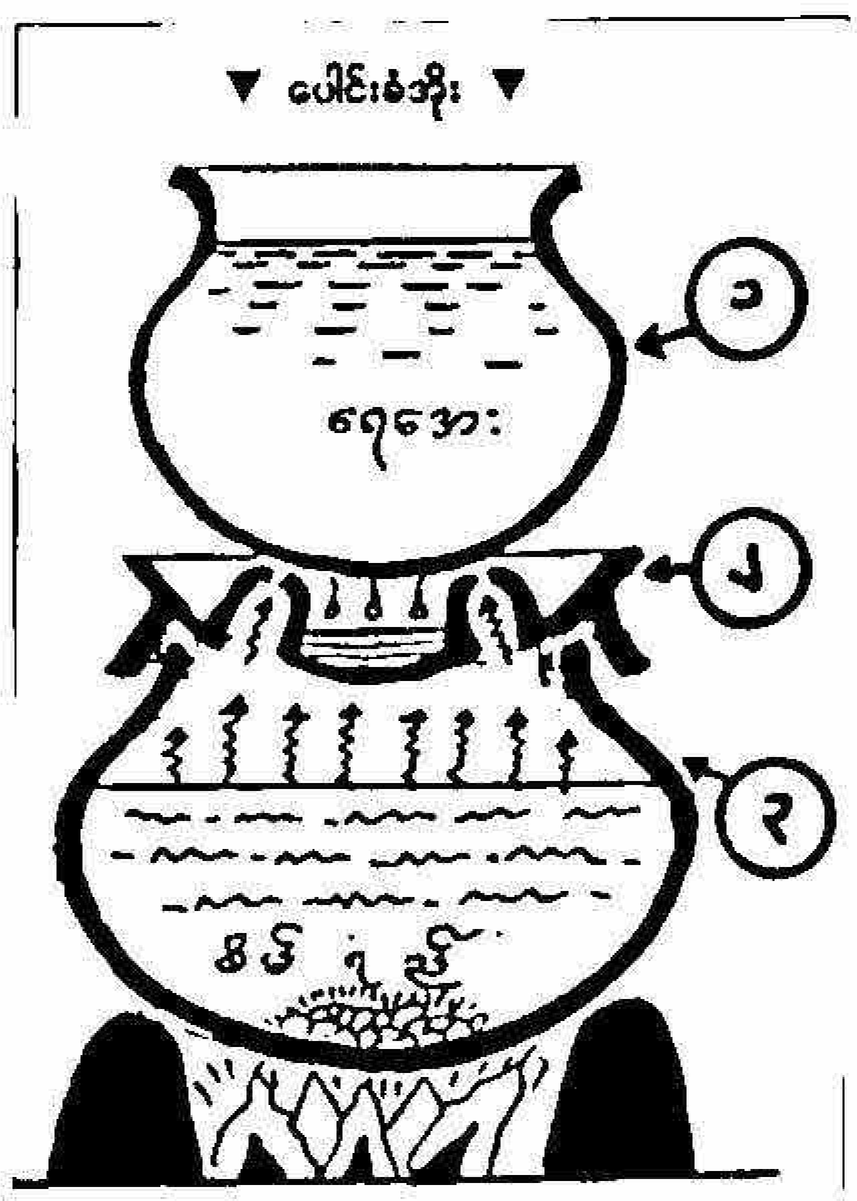
Top right: Single skeleton with 3 pots in Pit J-4 at Nyaunggan.

bottom with holes made when joining them to the lower pedestal. In others, there are no perforations on the lower pedestal. Based on these differences, the vessels have been divided into functional and non-functional types. Many more of these have been found at sites such as Kok-ko-Kha-hla with bronze and iron artefacts and also Halin. In the largest functional vessels, the diameter of the pedestal bearing the cylinders ranges may be 48 cm but the miniatures are only 4 cm in diameter. Lids with three oval-shaped cups were excavated at Taxila, where Marshall calls them perforated bowls.[16] Similar vessels are used in the Halin region today to make alcohol. A large vessel containing water fermented with tree bark and sugar is heated over a fire. On top of this is a pot with holes in the base, made by the three cylinders. These support a small pot on top of which sits a vessel filled with cold water. The steam from the fermented mixture rises through the holes in the middle pot, condense on the base of the top vessel containing cold water and then drip into the small pot below.[17] The Samon apparatus and ritual use is also recalled among the motifs inscribed on bronze drums from Guang-nan, East Yunnan which show tall jars being dipped with libation cups.[18] Both the Guang-nan examples are ceremonial scenes, with men ladling liquid from a vessel to hand to another and consummate the libation. Although the pots may have been used for everyday alcohol production as well, a ritual use could account for their transferral in miniature amongst the grave goods in the Samon valley.

Below left: *Guang-nan* libation vessel drawing.
(After Von Dewall 1981)

Below right: Drawing of distillation process.
(Win Maung (Tampawaddy))





Functional and non-functional distillation pots from Chindwin and Samon. *(Collection Win Maung (Tampawaddy))*

Stone oval (height 14.2 cm, width 13 cm, thickness 1.1 cm ring hole diameter 6.3 cm) and triangular ring with rounded top and flat bottom (height 9.3 cm, width 8.5 cm, thickness 1 cm, ring hole diameter 5 cm) and two inner discs (4 and 3.6 cm diameter) from Nyaunggan.
(National Museum Yangon)

Miniature bronze spears perhaps taking their model from the Chindwin area are also found in the Samon, as well as some Chindwin-type stone rings. In addition, Win Maung (Tampawaddy) has suggested parallels between the Chindwin double-pointed paddle-shaped axe and patterns on the rim of bronze 'mother-goddess' coffin ornaments.[19] These may be analogous to Calo's view on Yunnan where the equestrian Dian appropriated some ritual objects of the earlier cultures in the region, with their incursion into a sedentary culture graphically recorded on bronze drums. Weapons rather than agricultural tools are indeed the Samon norm, and one double burial at Hnaw Kan was associated with the deposit of a horse.[20] However, no single counterpart is seen to the merging argued for the drum-shaped cowrie containers of Shizhaishan, which combine a ritual object, the bronze drum, with one of authority, the cowry shell container.[21] As we will see, however, there are many other likenesses to the Dian culture in what appear to be the later phases at sites such as Myauk Mee Kon near Pyawbwe. In addition, there have been a few pottery finds in the Chindwin that resemble those of the Samon. One such vessel was excavated at Nyaunggan on the very tip of the cemetery 'spur,' overlooking the crater. The pot (*circa* 25-30 cm) had an angled shoulder, tall neck and closefitting lid (*circa* 5 cm high) is similar to one found at Shagwe, identified by Win Maung (Tampawaddy) as one of the nine forts forming a rectangular grid around Halin.[22]

Stone rings from Halin region; shouldered pot Shagwe, fortress of Halin. *(Collection Win Maung (Tampawaddy))*

Drawing Dian showing pole, crescent end akin to Nyaunggan halberd. *(After Von Dewall 1981)*

Bronzes

The 18 bronze tools from Nyaunggan, now in the National Museum, Yangon, range from 8.4-234.9 grams in weight. Ten of these are spears with the others a mixture of arrow points, axes and halberds. The axes are rounded, the square-shaped blades a contrast to the more rectangular forms seen in the Samon. In addition, the line decorations on the shaft of the Samon tools are not found on the Chindwin axes. The halberd is similar to the first tool found at the site while another with a somewhat longer blade (30 cm) has been recovered from Mahlaing by Win Maung (Tampawaddy). This last, however, bears a finely made raised pattern of cross-hatching bordered by lateral lines. Although not as elaborate, the halberds are akin to *ge* from Dian sites such as Tianzimiao, a Yunnan relationship we consider further when discussing finds in the Samon valley.[23]

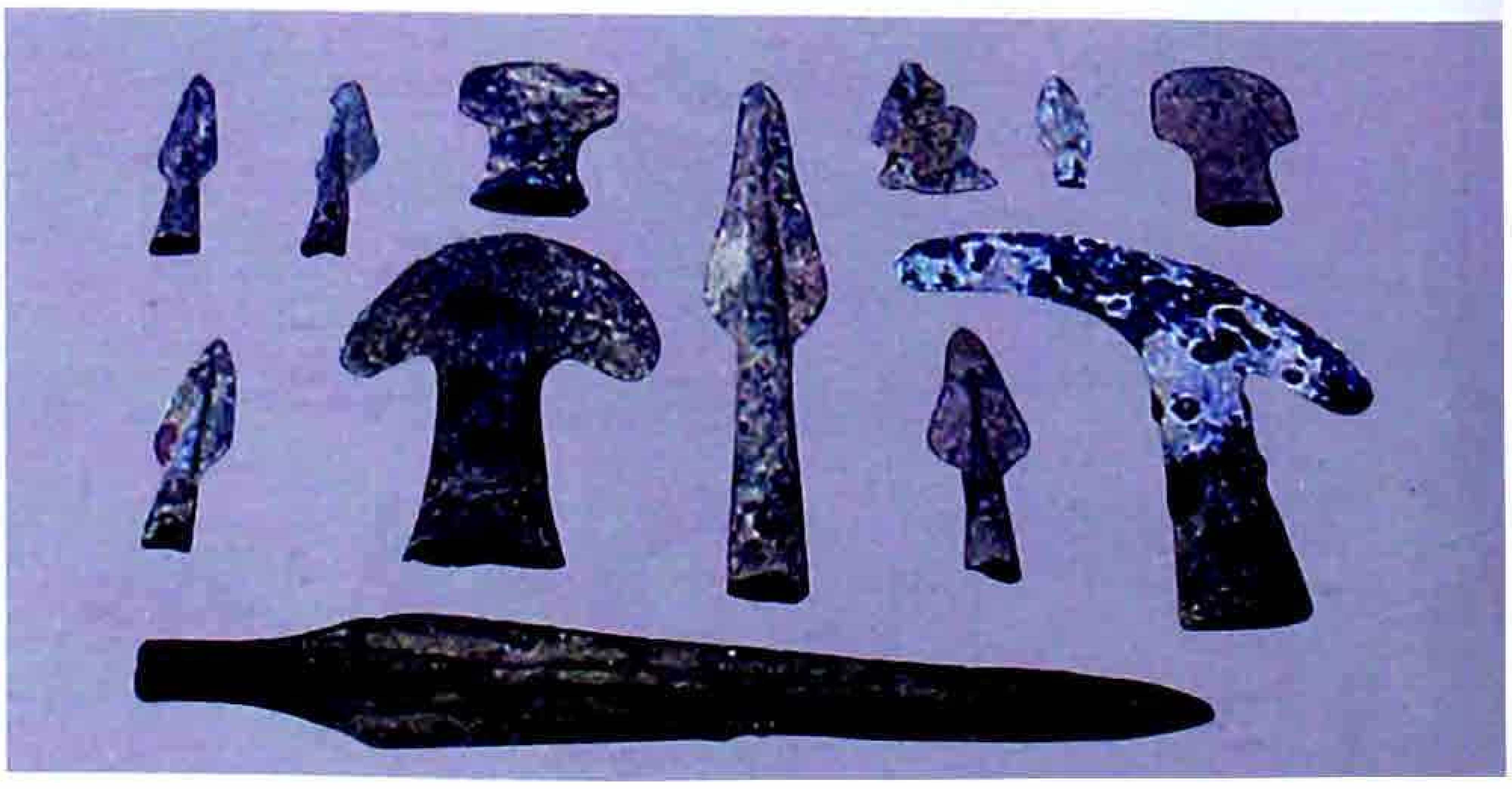
The longest of the Nyauggan bronzes is a spear (24.5 cm, 196 gm) although the heaviest is a paddle-shaped double-tipped axe, 12.6 cm long with an inner shaft 10.7 cm in length and a width varying from 6.6-10 cm. It is this shape that is seen on the rim of Samon 'mother-goddess' coffin ornaments, an appropriation noted above. With its long shaft fixed to a pole it would have made a formidable weapon or possibly a standard akin to those depicted on Dian bronze drums. Calo' has identified figures wearing feathered headdresses and carrying feathered poles or spears engraved on the mid-mantle or the tympanum. On a drum from Vietnam, for instance, these bear broad and sometimes curved objects on their tips.[24]

No production site has yet been identified around Nyaunggan, although three small bronze samples from the *Yatheit Kon* area of large boulders near Okaing tested in Yangon showed a very low tin content, with traces of iron, lead and arsenic. Likewise, a bronze axe from Salingyi showed an extremely high (99.5%) copper content.[25] Stone moulds have been found in the Samon, but to date, not around Nyaunggan or elsewhere in the Chindwin.

Miscellaneous artefacts

There were also 88 small shell beads recovered, and one fresh water bivalve shell excavated. A number of surface finds were collected,

Above and right: Nyaunggan bronze implements including double pointed axe (length 10 cm), halberd (blade length 14 cm) and long sword (length 30 cm) from 1998 excavations. *(National Museum Yangon)*



including stone tools, many inner discs from the manufacture of stone rings and terracotta beads. A few tubular stone beads were also found, two of which were unusually long (14 and 17 cm). Similar objects have been found at Okaing but as is seen today, there were undoubtedly a number of habitation sites around the crater. In addition, six lead rolls were found, a 'tape' *circa* 1.3-1.5 cm wide and 21 cm long rolled into a coil. These have also been found at Maingmaw where Aung Myint detected traces of writing. Similar rolls were unearthed at Beinnaka in 1982 and are generally assigned to the first millennium AD. Thus the Nyaunggan area continued to be a trading point in later periods, although there is no major walled site yet documented.

Other Chindwin, Mu and Upper Ayeyarwaddy sites

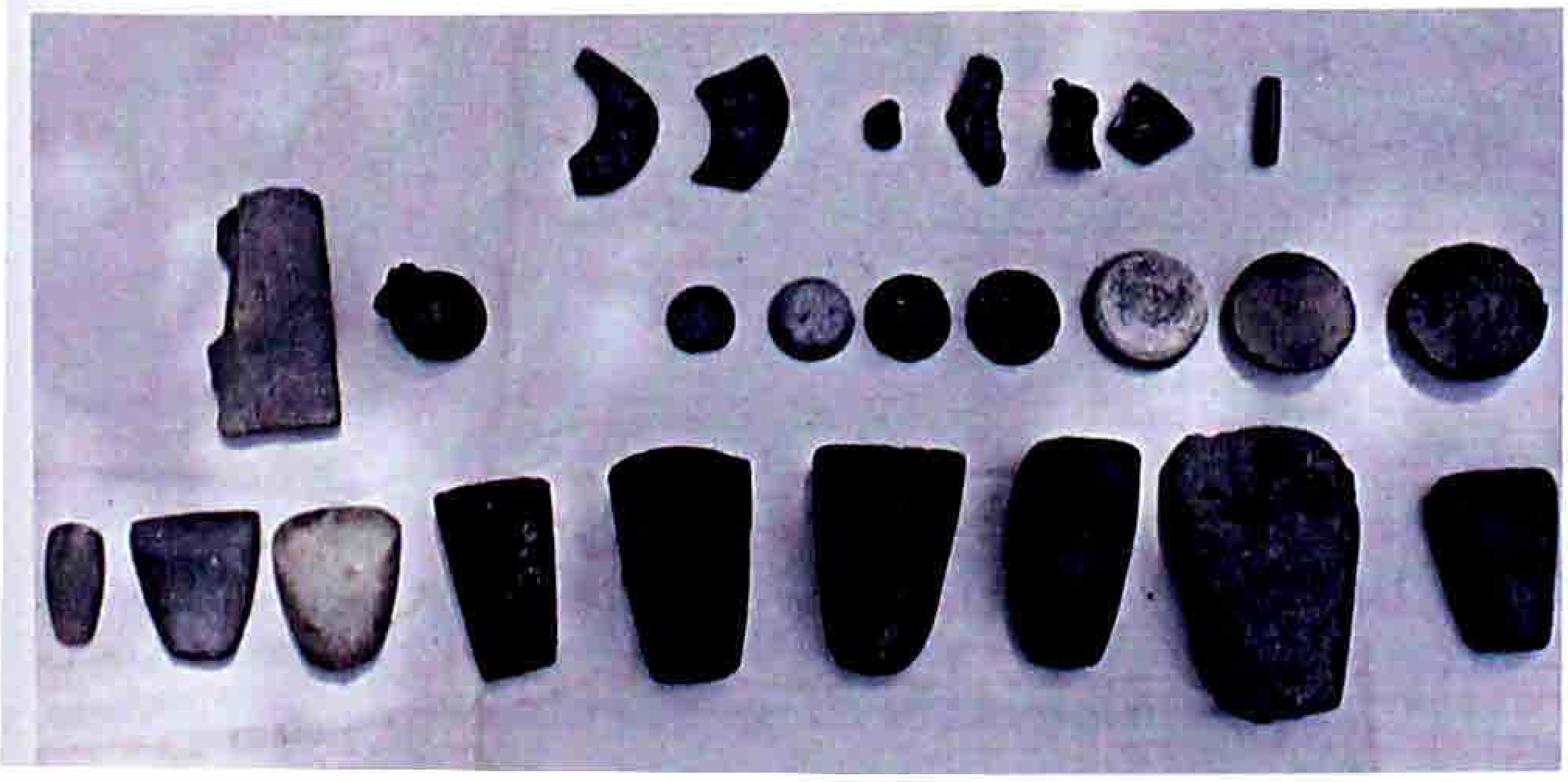
Test excavations have been carried out at Monhtoo (Mondu), Budalin, and In-de, Taungtha, south of the Chindwin-Ayeyarwaddy confluence. Bronze finds have been made at Okaing, Taunggya and Kyaukka in Monywa, and east at Thapan and Monhtoo. The elevation rises between the Chindwin and the Mu valleys, so these widen the ecological range of lithic and metal-using sites explored in the Chindwin region. At Monhtoo, preliminary test pits finds included a north-facing inhumation burial typical of the Chindwin and two non-functional distillation pots, bronze bracelets and iron spears seen in the Samon.[26]

In 2004, the Department of Archaeology carried out excavations near the Shwegyugyi pagoda southeast of the Halin city wall. The abbot of the Bo Naga (Nyaungkobin) monastery in this area has for many years preserved antiquities, and many chance finds have been made, but the recent excavations were the first to be undertaken. The finds confirmed the rich variety of earlier collecting. At least four skeletons were unearthed between 2.4-9.75 m. Three faced north, as seen at Nyaunggan, and one to the northwest, with the lowest and variously oriented skeletons possibly representing a 'pre-Chindwin' mortuary tradition. A large quantity of pottery was also found, with many small globular vessels, and pedestal pots with lugs for hanging, like those from Nyaunggan. To date, eight distillation pots, all non-functional, with bowls ranging from 9-23 cm, have been found at Halin. Finds of artefacts have also been abundant south of the Halin wall.

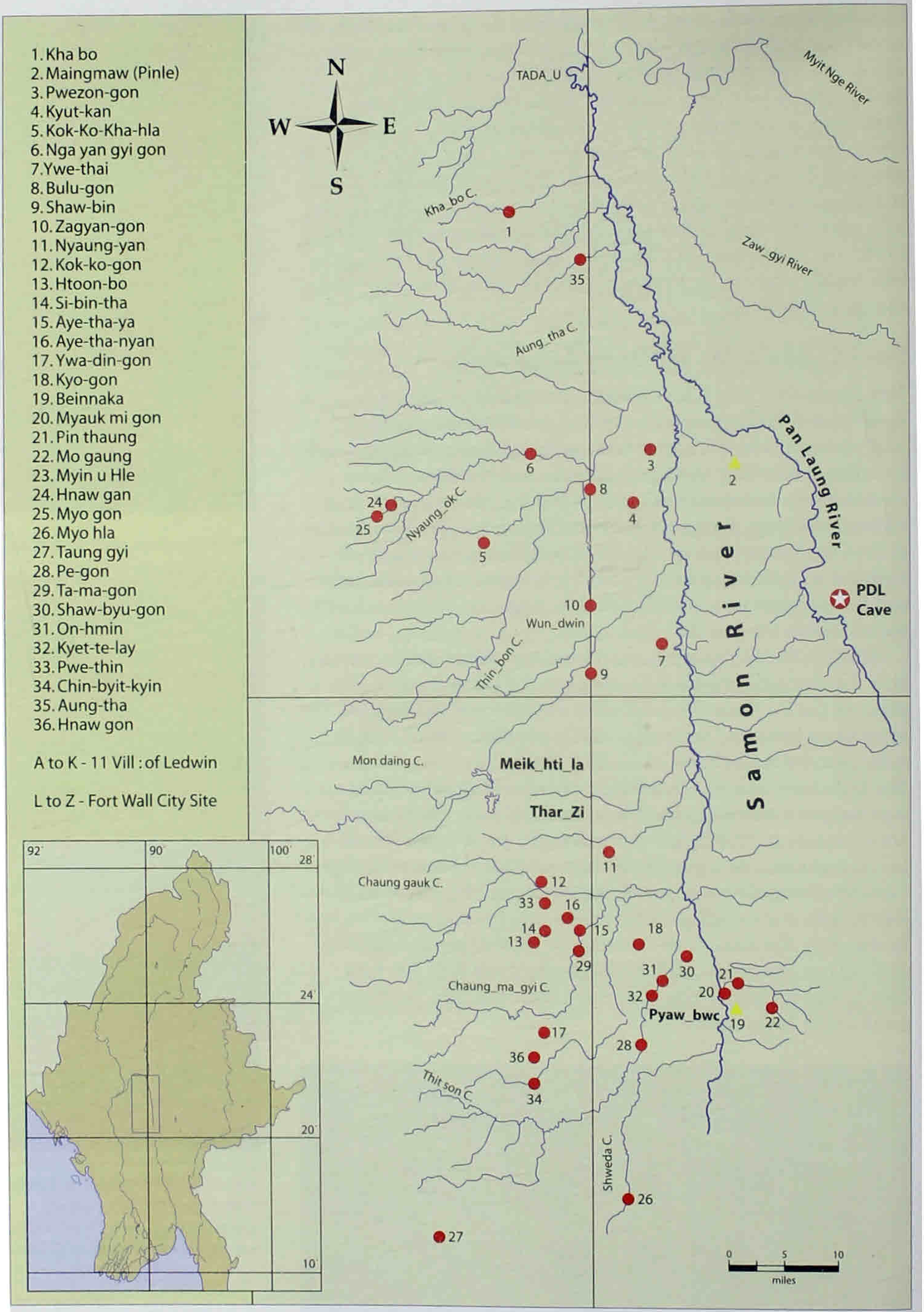
Inhumation from HL25 excavations, Halin. *(Photo Hla Tun Pru)*

Skull from HL25 excavations, south of Halin wall. *(Photo Hla Tun Pru)*

Lead rolls from Nyaunggan, surface finds during 1998 excavations; length unrolled piece 20 cm, width 1.2 cm. *(National Museum Yangon)*



Stone rings, discs and tools from Okaing, probable bronze production area south of Nyaunggan crater.



Samon villages, Ledwin and Fort Wall city sites after Win Maung (Tampawaddy) and Cho Zaw.

Stone rings at Nyaungkobin monastery Halin region.

Mention must also be made of Tagaung, where for many years excavated artefacts dated no earlier than the Bagan period. Excavations in 2004, as we will see in the next chapter, yielded Pyu finger-marked bricks. Pottery ranged from 32-60 cm, some vessels containing bone and ash. The tallest, however, resemble pots from Bronze Age sites in Thailand and Yunnan such as Daxingzhen and Aofengshan.[27] At Kyan Hnyat which we mentioned earlier in a Neolithic context, bronze finds and furnaces have been recorded. The documentation, however, is in an early stage, and it has been only recently that exploration of bronze-using sites has widened. Research on the relationship of this to earlier stone-using cultures may well be an outcome of further excavations. This is the case for not only the Chindwin but the Samon valley.

Samon Resource control

The Samon River is unusual for it empties north, first into the Myit Nge and then the Ayeyarwaddy.[28] This was not always the case, for one million years ago the 161 km-long Samon probably joined the Sittaung and drained south into the Gulf of Muttama. A number of tributaries drain into the Samon from higher ground on the west, and it is along these that many of the bronze-iron sites of the Samon are located.

Further west is Mt. Popa, with abundant iron and semi-precious stone. The area to the east is also crucial, as sources of copper ore are found along the edge of the Shan Plateau.[29] Trade with Yunnan may have reached both northeast through Bhamo and north via the salt-rich area of Halin. Analysis by Guirrec Querré of fragments of a cylindrical bronze vase from Myo Hla site No. 2 in the southern Samon area bears out the easy access to varied ore sources, for the fragments showed structures typical of primitive smelting from regions with either copper or pewter. Evidence in the Samon for local manufacture of metals is limited, but a few bivalve sandstone moulds have been found, for example at Kok-ko-Kha-hla.

The beauty of polished stone beads such as these has led to the continued looting of sites in the Samon valley. To date the carnelian tigers 'with baby in mouth' have not been found outside Myanmar. *(T&Q collection)*

Beads: Samon and Pyu

In contrast, there is abundant data for the local manufacture of beads from carnelian, green chalcedony and fossil wood. Fossilised wood is a silicon dioxide where silica has replaced the wood's cellulose, giving it qualities similar to chalcedony. It is abundant in Upper Myanmar, and as we saw in an earlier chapter, was commonly used for Palaeolithic Anyathian tools.[31] Line designs in Myanmar were most commonly made on fossil wood and red-orange carnelians. Black and white line-design beads, known as *pumtek* or 'buried thunderbolts' amongst the Chin, are often treated as a separate type.[32] Nonetheless, as we discuss below, Chin traditions linking their ancestry to the Pyu and alchemic formulas for producing line designs on fossil wood, may help to explain the apparent long continuity of line-design beads.[33] Beads appear to have been widely traded, to Thailand and within the country where they are found in Bronze-iron Samon graves as well as first millennium AD walled sites in Upper and Lower Myanmar. Localised stone sources were exploited throughout the country, so we are not suggesting that all beads came from the Samon valley, but high-quality semi-precious stones were particularly notable from this region.

Samon tiger bead. *(T&Q collection)*

Indeed, the identification of Samon culture has principally been due to bead-digging. The discovery from aerial photographs of walls enclosing Maingmaw (Pinle) by Aung Myint in 1965 gave new energy to bead-digging in the Samon region where many walled sites of Pyu groups had already been pillaged. The digging was inadvertently aided by large-scale irrigation projects in the Samon, where excavation for dams in the late 1980s turned up semi-precious stone beads and range of other artefacts. Some of the beads were typically 'Pyu.' However, other artefacts which are quite separate from the Hindu-Buddhist Pyu culture started to come to light such as bronze 'mother-goddess' figures, floral ornaments and *kye doke* or bronze packets. As the finds are concentrated within the Samon valley south of Mandalay, the artefacts are commonly called by this name. And although some of the bronze artefacts have affinities with Yunnan goods, the *kye doke*, floral ornaments and 'mother-goddess' figures have not (yet) been found either north of Halin or south of Pyinmana.

While some social stratification is evident in the Chindwin bronze mortuary weapons, this markedly increased in the Samon. A similar acceleration has been documented at Noen U-Loke in Thailand, where the visual display of status goods was greater in the later burial phases.[34] Well-provenanced data is rare, however, for many artefacts continue to be found through looting of the richer graves. Pautreau has noted that graves without personal effects or much pottery are passed over by looters. As these appear to be greater in number than those with rich grave assemblages, the overall pattern is not yet clear, and all hypotheses are provisional. In the differentiated burials, specialisation of activity, control of resources and trade, however, the Samon sites suggest a more complex, perhaps 'chiefdom-level' of social organisation than the Chindwin.

A number of cemetery sites in the Samon have been excavated, many through looting and surface finds. Skeletons tend to face east rather than the north orientation of Chindwin burials. The grave goods are more varied, including pottery, stone, bronze, glass, and iron. Whereas beads found in the Lower Chindwin are generally terracotta, the Samon beads are made of semi-precious stone, glass and rarely silver or gold. Ceremonial and ornamental rings continue to be used but are frequently rounded in shape and may be of glass. The Samon bronze tools are more elongated and the use of bronze widens to include a number of ritual goods such as coffin decorations. A few personal objects have also been found such as a coiled bronze ring from Nyaungyan and a bronze bracelet from Letpanywa, near Beikthano. Bronze axes of the elongated Samon type, one 18 cm in length, have been found north at Tagaung but these are widely spread, akin for instance to axes found on the Shan Plateau and in Yunnan. And as we have noted, the value of such objects as *kye moegyo thwa* means that they are kept, sometimes for use in alchemy. In the Samon valley, many objects typical of the walled sites of Pyu groups overlie Bronze-iron occupation. As a majority of the Samon objects to date are chance finds, it is often not possible to assign 'generic' objects such as spherical beads to either the bronze-iron or walled site culture.

There are many small sites in the Samon, with not all of those listed here having been excavated. We briefly, however, describe excavations at Beinnaka, Myin u Hle, Nyaung-yan, Kok-ko-Kha-hla, Hnaw Kan, Ywa-din-gon, and Myo Hla. The last three were part of a joint project between the Department of Archaeology and a French team lead by Jean-Pierre Pautreau between 2001-2003.

Beinnaka

The earliest excavations were those at Badigon ('bead hill') near Beinnaka by Sein Maung U in 1985. As little was known of the Samon culture at that time, it was presumed to be a Pyu manufacturing site. Beinnaka itself is a rich area that has yielded Chindwin, Samon and Pyu artefacts. In addition, on the east of the site is a Bagan period structure. A number of streams branch out in the Beinnaka area, with canals as well indicating its favourable location.[35] The excavation work was undertaken in part due to local records recording variants of the name 'Beinnaka' leading to suggestions that it may was associated the last king of Tagaung.[36] The fall of Tagaung is attributed to a Chinese invasion, leading to tripartite migrations. One group founded the Kharuin of Kyaukse ruled by the Bhinnaka lineage.[37] As summarised in the *Glass Palace Chronicle:*

"In the time of the last of these kings, Bhinnakaraja, the kingdom of Tagaung, called Sangassarattha, perished ... Bhinnaka, mustering what followers he might, entered the Mali stream and abode there. When he died his followers split into three divisions. One division founded the nineteen Shan States of the East and were known thenceforth as the descendants of Bhinnakaraja. Another division moved down the Irrawaddy and entered the Western country, where dwelt Muducitta and other Sakiyan princes among the Pyus, Kanyans and Theks. The third division abode in Mali with the chief queen Nagahsein."[38]

Single 'mother goddess'. *(Collection Win Maung (Tampawaddy)). (Photo Bob Hudson)*

Other than the Badigon work, Samon excavation has been of cemetery sites and prompted not by chronicles but artefacts found in bead-digging. For example, the next site to be excavated was Myin u Hle in 1999, after a bronze 'mother-goddess' figure was found there the previous year. A total of 41 skeletons were reported from the Myin u Hle excavations, all placed in supine positions and found with bronzes, iron spear-heads, pottery and shells. Excavations were also carried out at Kok-ko-Kha-hla in 1999, where a further 48 burials were excavated.[39] The excavated areas at Myin u Hle and Kok-ko-Kha-hla were located 1.6 km north and 1.6 km east, respectively, of the village, but other cemeteries have been found in villages, with the antiquity of villages in the region uncertain. Thus while most sites are elevated areas adjacent to streams, the relationship between cemeteries and ancient habitation is not yet clear. Sein Myint distinguishes a northern zone around Meiktila and a southern one around Yamethin.[40] To date, the densest distribution is found in this southern part of the Samon in small villages along streams around Yamethin and Pyawbwe Townships. At a number of the Pyawbwe sites, occupation continues into the first millennium AD period of Hindu-Buddhist walled sites associated with the Pyu peoples.

Kye doke from Kyo Kon, Pyawbwe Township, Mandalay Division. (*Win Maung (Tampawaddy)*)

Yunnan links

Only a few artefacts – notably beads – link the transition between ancestral-animist Samon and Hindu-Buddhist cultures. The seemingly abrupt change is best understood in relation to neighbouring regions. During the first millennium BC, for instance, exchange with Yunnan was increasingly offset by contact with Tibet and South Asia. Thus the Iron Age cultures of India (*circa* 700-350 BC) and the construction of embankments for water control and defence at sites such as Pataliputa were likely to have been known.[41] These contacts brought patronage of varied ritual communities. The formation of especially the Hindu-Buddhist communities was likely to have offered a viable economic and political means to balance proliferating Yunnan-oriented wealth in the Samon. Several bronze musical instruments from Myauk Mee Kon we will look at below illustrate the later stages of this contact with Yunnan bronze cultures of the Dian.

Kye doke from Si Pin Thar, Pyawbwe Township, Mandalay Division. (*Win Maung (Tampawaddy) Collection)*

The Dian timeframe appears to parallel increased specialisation within the Samon with the diverse artefacts contrasting with those of the Chindwin and reflecting progressively more competitive resource control, patronage and hierarchy. Much of this seeming strife may have also been in relation to Chindwin access, for as we saw in the last chapter, a number of Chindwin ritual goods seem to have been appropriated in the Samon. For instance, Win Maung (Tampawaddy) contends that the double-pointed Chindwin axe becomes incorporated into the 'mother-goddess' design and the Chindwin distillation pots are made in miniature in the Samon. A diverse population during this time is suggested by an aside by Luce that the human designs on the Dian bronze drums resembled the high-tail feather figures of the Austronesian Kalimantan Dayak and that similar groups may have occupied Myanmar. Luce speculated that Chinese occupation in eastern Yunnan *circa* 109 BC augmented earlier trade routes to India and that this pattern continued after 69 AD when the Han established themselves on the border in Yunnan.[42] As we will see in the next chapter, Yunnan remains key in understanding 9th century developments at Halin. Much research remains to be undertaken on the mixture of peoples in Upper Myanmar during the early first millennium AD. Given the sparseness of data, it is useful to consider mention in Chinese records about ethnic stocks in Yunnan during the Western Han period. One, for instance, notes the presence of "several tens of chieftaincies in the Southwestern barbarian area… West of it there are also tens of chieftaincies belonging to the Mimo people, of

Bronze drum kept in Sagaing Unusually, the drum appears to have been coated with an additional layer of bronze at an unknown date, thus obscuring the underlying motifs. *(Photograph by Win Maung (Tampawaddy))*

Right: Drum kept in Sagaing. *(Win Maung (Tampawaddy))*

which the Dian is the largest… All of them dress their hair in mallet-shaped buns, cultivate the land and form settlements. Apart from them, east of the Tonshi, in the west and north of the Dieyu, live the Sui and the Kunming. These people braid their hair, and move about with their cattle. They have no fixed settlements and no chieftains. Their territory covers several thousand *li*."[43]

The richest Yunnan assemblages excavated to date are those of the Dian. This area was recognised by the Western Han with bestowal of a seal by the emperor, signalling subjugation of the Dian polity in 109 BC after a failed attempt by the Dian ruler to get help from his allies. The result was the creation of a commandery named Yizhou, with a population of 580,463. Further rebellions followed, with accounts referring to the difficulties of fighting the guerrillas in the southwest, a rich but warlike area with head hunting.[44] The Dian were also many different chieftaincies, some of which were referred to as Dianpu, the 'Pu of the Dian area' with other Mimo subgroups subsumed under 'Pu.'[45] The presence of multiple groups is suggested in Yunnan at this time by the varied clothing and actions of inscribed and modelled figures on first millennium AD Dian bronze cowrie containers. The native Dian farmers are shown wearing their hair in buns, but the equestrian Kunming peoples wear their hair in plaits.[46] This multiethnic environment, made up of various cultural influences is highly relevant in our interpretation of the transition between the many different groups that were part of what we call here the Samon Bronze-iron and the walled site cultures of the Pyu peoples.[47]

Bottom of Samon vessel with lugs. *(Collection Chit San Win)*

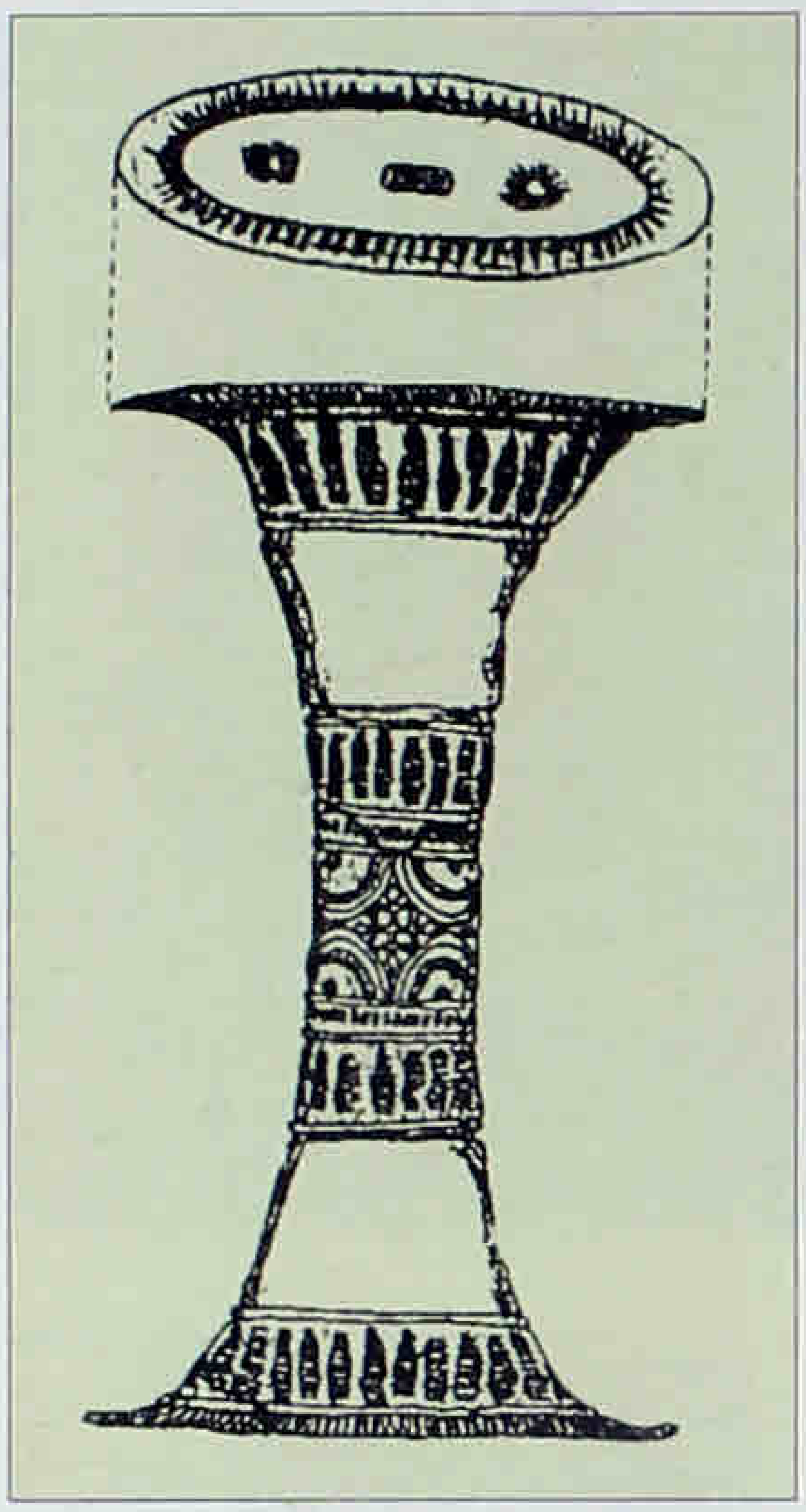
Pottery

The Samon pottery can be divided into three shapes: cylindrical pots, spherical pots and shallow bowls with or without feet. These are thought to have been used for ritual offerings, as are single shells of freshwater bivalves. No remains were recovered from the pots, although flesh from bovines, birds and other small animals was found on or next to the lower part of the body. At Ywa-din-gon and Myo Hla, all three types of vessels were generally present as a set, along with evidence of basketwork. Pautreau has suggested that the set may have contained the most essential goods needed by the deceased person.[48] In most cases, these were placed at the foot of skeletons, although one burial at Myo Hla had a dish placed over the skull of a child, and at Hnaw Kan pots were placed near the head or on both sides of the body.

Larger urns were also recorded, used in child burials. Other ritual vessels included the tripod distillation pots found at Kok-ko-Kha-hla and Bulu-gon. A number pots dubbed 'beer cans' by Maung Maung Tin have also been found in the Samon. These are 10-15 cm in height, with a 1.5 cm hole in the top and lugs on two sides. The lugs are attached to the vessel as different angles, and although some are flat on the top and bottom, on others this is inset within an outer rim of *circa* 1 cm, perhaps akin to cut sections of bamboo which may have been the prototype for the pots. The 'beer cans' are often straight-sided but some examples are angled with a smaller upper rim. In all cases, however, a hole only *circa* 1-2 cm has been punched through the top.[49]

Samon vessels with lugs ('beer cans'). *(T&Q collection)*

Side profile of Samon vessel (height 18 cm) with lugs. *(Collection Chit San Win)*



Win Maung (Tampwawaddy) drawing of a Samon hilt.

Bronze Samon hilt with traces cloth. *(T&Q collection)*

Bronze and iron

The principal metals recovered from Samon sites are bronze and iron. Iron is found in bi-metallic swords, socketed hoes, spearheads and arrowheads. The iron architectural fittings, such as hinges and door sockets, found at Pyu sites were not reported at either Hnaw Kan or Taungthaman. Many of the iron pieces recovered from excavations have been in poor condition and full analysis of the forms has not been completed. However, it is likely that many more agricultural objects were made than have been recovered to date. The wealth of the Samon area involved trade in items such as semi-precious beads, but a ten-fold increase in economic efficiency, in this case agricultural production as well is estimated from the introduction of iron.[50]

Iron swords and bronze hilts

A number of broad petal-shaped iron swords *circa* 8-12 cm have been found. Some are set in a bronze hilt.[51] A number of such hilts, all finely made, have been recovered around Halin. The hilts are cast, about 7-10 cm in length and with a slender oval-shaped cross-section. They are decorated with spirals and concentric circles around the midsection and rows of parallel incised lines on either end. A few also have designs on the flat end of the hilt. In their workmanship and decoration, they are akin to those seen on daggers from a number of Dian sites in Yunnan.[52]

Bronze axes and spears

The bronze tools from the Samon are mostly axes and spears. The axes are more rectangular (7-9 cm) than the rounded Chindwin axes, and traces of cloth have also been reported on some. They may have raised lines on the shaft, comparable to those from Yunnan sites like Daxingzhen and Jinguan.[53] The bronze spears reach lengths of 30 cm, again with parallels to more elaborate Yunnan pieces from Shizhaishan.[54]

In addition, miniature bronze spears, but not axes, have been found laid lengthwise below the lower arm or in the hand. Varying in length from *circa* 2-10 cm, they are bound up in bundles of five or six. Bells, with perforations on the sides and a clapper have been found by villagers, reportedly placed above the head of skeletons. A few bronze vessels have been found in the Samon, including two cylindrical ones at Myo Hla sites 1 and 2. However, the majority of bronzes other than weapons are coffin decorations and bronze packets. While the axes and swords have parallels outside the Samon, none have been found for the coffin decorations or bronze packets.

Kye Doke

The most common bronze object found at the bronze sites of the Samon are bronze packets or *kye doke*. For instance, at Hnaw Kan, *kye doke* were the only bronze artefacts found. At a few sites, such as Halin, miniature *kye doke* have been recorded and at Ywa-din-gon, the *kye doke* were found on skeleton bones, in coffin jars, and in mounds of pebbles.

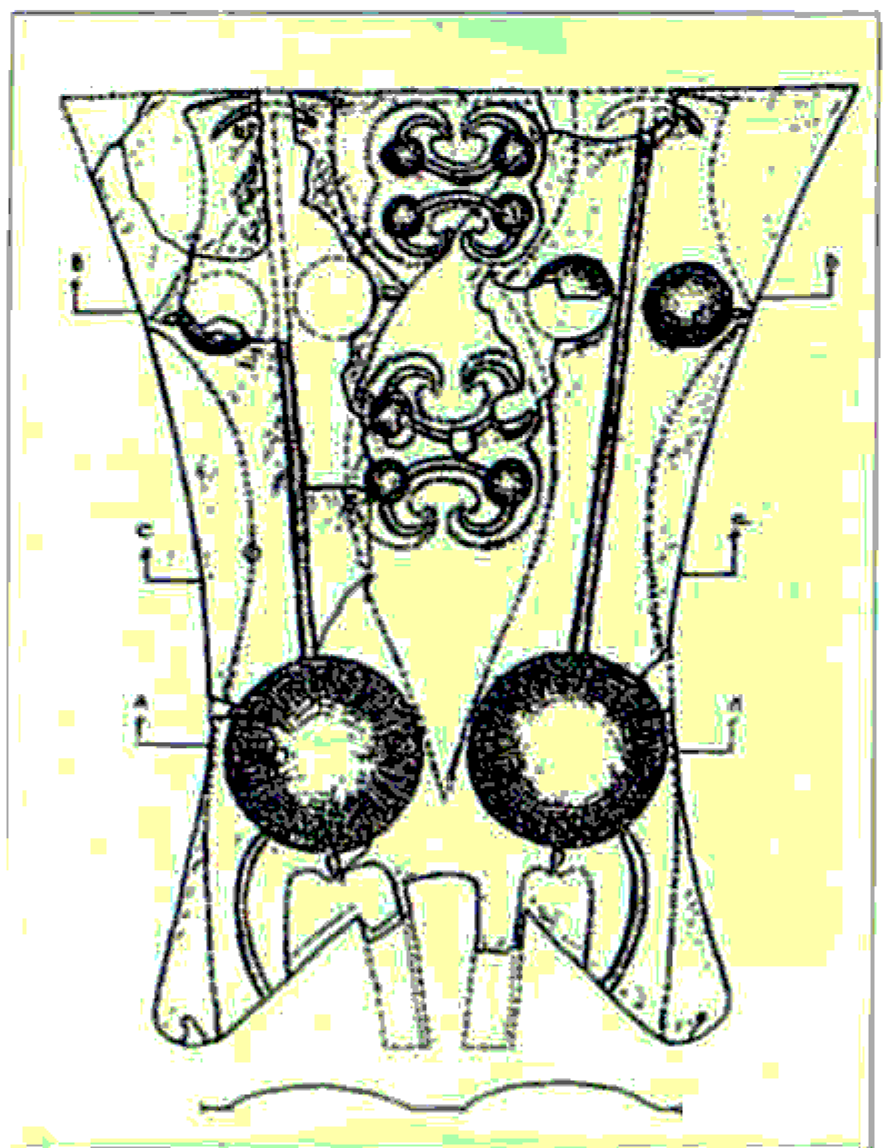
Bells Myauk Mee Kon.
(T&Q collection)

Kye doke from Kyut Kan, Wundwin Township, Mandalay Division.
(Collection Win Maung (Tampawaddy))

Bundles of paddy for fodder along Ayeyarwaddy at Kyauk Myaung, northeast of Halin.

Rice fields northeast of Halin, Shwebo Township.

The *kye doke* are bundles of thin bronze wire (0.5-0.755 mm in diameter) 'tied' into bundles with string made from vegetable matter. The tips of the wires are sharp, suggesting they were cut or twisted off from a longer wire. The sections vary in length, from about 1.5-5 or 6 cm, with up to a hundred wires per bundle. Analysis of *kye doke* from site no. 2 at Myo Hla by by Guirrec Querré at Rennes showed 99.2% copper. Pautreau found *kye doke* at this site sometimes laid out in a 'snake-like' fashion, tied with a vegetable matter and wrapped in cloth.[55] These findings bear out earlier villager reports that the *kye doke* were laid in a vertical row on the chest. At other sites they have been found placed on either side of the shoulder, on the chest, or gripped in the upturned hands of the skeleton. At Shwe Ku Kon, Nyaungyan village, inhabitants reported finding some burials with seven packets in the closed hand of a skeleton.



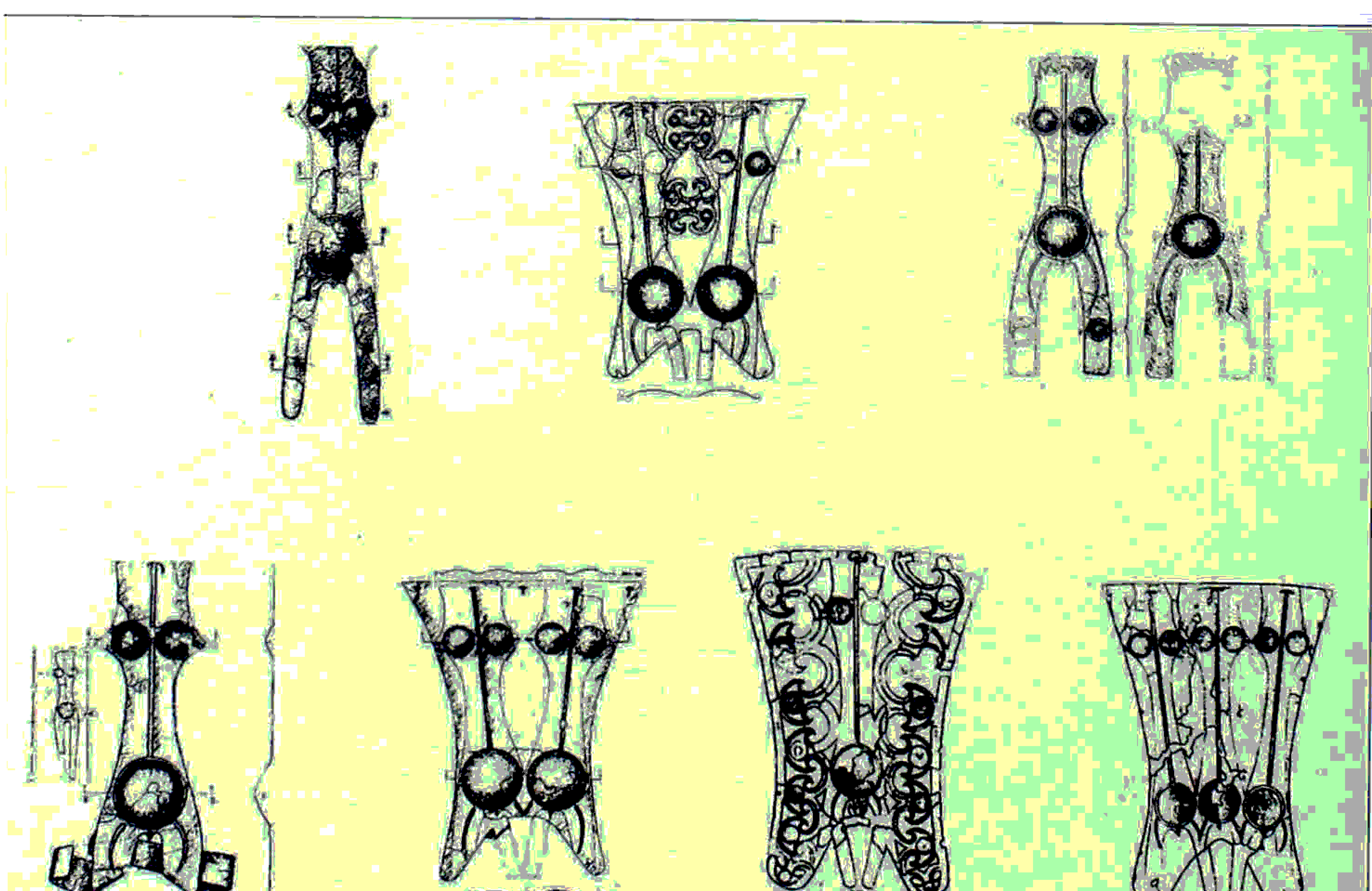
(Tampawaddy) of double 'mother goddess' (height 50 cm) Nyaung Yan, Thazi Township, Mandalay Division.

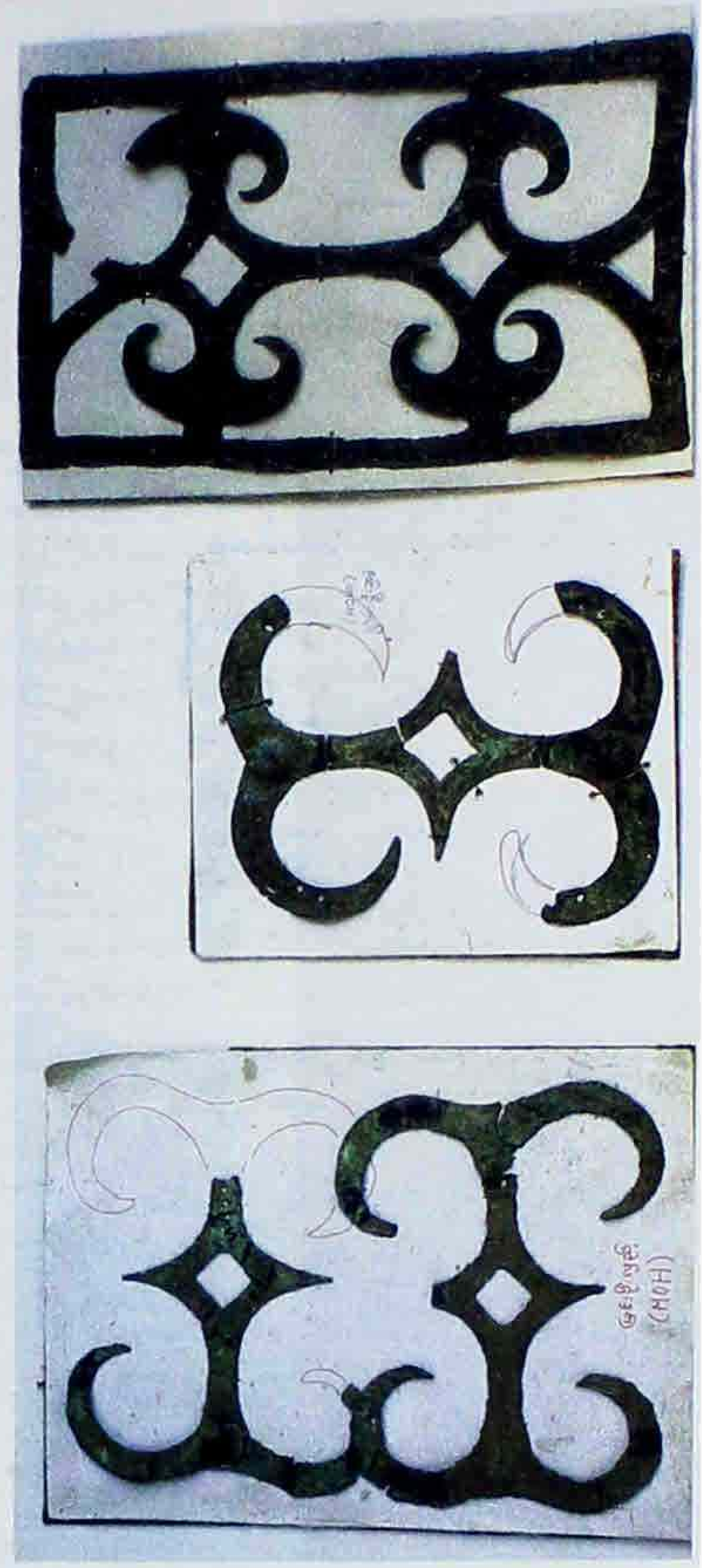
The function of the *kye doke* remains unclear. Villages say that they were indicators of age, and associate them with male burials. It has been suggested that they are ingots due to their frequency, but their finding in pebble mounds at Ywa-din-gon has led Pautreau to suggest a ritual use. They resemble bundles of padi stems or *sabeh sii* and may have been markers of wealth. As mentioned in the Introduction, bundled grain ears of rice and millet at Haimenkou (*circa* 1,500-500 BC) in Yunnan are seen to mark settled agriculture and animal husbandry.[56] In the Shwebo area of Halin, paddy ears are cut short so the remaining stalks can be reaped separately for fodder, which is then tied into bundles to be more readily chopped.[57] As we will see below with the 'mother-goddess' figures, the *kye doke* may have been linked to a varied fertility cult.

Bronze coffin decorations

Three bronze artefacts were commonly used to decorate coffins used for burial of high status individuals: flat floral shapes, conical ornaments and bronze 'mother-goddess' figures. The coffins were probably carved from tree logs such as indicated in excavations at Ywa-din-gon and Myo Hla. The floral ornaments are made up of flat strips in a curved V-shape *circa* 10-14 cm in width and 10-16 cm in height. A diamond-shaped hole is cut in the centre and some are set within frames. There are also round conical pieces, some 7-9 cm in diameter. Villagers report finding the conical pieces in a layer above the skeleton and the floral patterns placed on either side. Both floral elements and cones have small holes on the edges to fix to another surface.

Drawing by Win Maung (Tampwawaddy) showing variation in 'mother-goddess' figures.





'Mother-goddess' figures

The female figures are thin beaten sheets *circa* 60-90 cm long and 15-75 cm wide. Some may have been gilded. The figures are elongated, unlike the typical fertility figure. This form may have been determined by the use, for they appear to have been fixed to the top of coffins. Breasts and womb are prominent cones bounded by a rim. The arm bones, leg bones and backbone are shown with a ridge-like line. The figure found at Myin u Hle is a single female, but double-figures were found at Kok-ko-Kha-hla and Nyaungyan. Another figure from Nyaungyan is triple-bodied.

The more complex figures have additional curvilinear designs linking the 'neck' and torso. The rim around the female figure sometimes has double-pointed curvilinear designs similar in shape to double-pointed Chindwin axes. Win Maung (Tampawaddy) has identified the same form on a small gold cubical bead from Sriksetra and on silver coins in association with motifs such as *Srivatsa* and *Bhaddapitha*.[58]

Left: Double 'mother goddess' figure. *(Collection Win Maung (Tampwawaddy), photo Bob Hudson)*

Right: Floral coffin ornaments from Samon valley showing single (16 x 19 cm), double (18 x 23 cm) and framed (18 x 29 cm) varieties. *(Collection Win Maung (Tampwawaddy))*

The bronze 'bird-man' pole (13 cm) from Beinnaka may be compared with the figures on the mouth organ above opposite. *(T&Q collection)*

Bronze 'bird-man' and pole were found inside this bronze box. *(T&Q collection)*

All the 'mother-goddess' figures are headless, and although the neck portion may have represented the head, the well-defined backbone reaches to the top of the figure. The log-coffins are narrow but long, so a head made of a perishable material may have been used. Marshall notes one small (7.5 cm) terracotta figure from Taxila that resembles the Samon 'mother-goddess' figures in having three cones marking the breast-bone and another the womb. It is also headless, although the head is said to be 'missing.'[59] Links to 'mother-goddess' figures elsewhere seem evident although the Samon pieces are more diminutive in proportion than is usual in fertility figures.[60] Myint Aung has discussed the common propitiation of Ponmagyi by cultivators, often in matriarchal societies, with festival songs during Tabaung (March-April). These celebrate her hanging breasts, nine cubits long, and abundant paddy production of more than three thousand baskets.[61] As we have seen with the *kye doke,* abundant paddy and wealth also appear to have been closely connected in the Samon culture.

The first 'mother-goddess' figure was found at Myin u Hle in 1998. Villagers say the feet are laid over the head of the burial but despite several excavations, none have yet been recovered *in situ.* Some pieces have been found fused to the chest of skeletons and most have the legs bent under, leading Win Maung (Tampawaddy) to suggest a temporary placement on the coffin lid, followed by bending of the legs and placement within the coffin with the legs over the head of the skeleton.[62] Even from looted contexts, they remain rare, and as we mentioned earlier, Pautreau noted that graves with no personal effects and little pottery are more abundant than the rich graves. Thus it would seem that the 'mother-goddess' figures were reserved for high status individuals.

Myauk Mee Kon: bronze animals and musical instruments

This was also probably the case for the few bronze animal figures and musical instruments that have been found. Most of these come from Myauk Mee Kon, a small village just north of Beinnaka at the foot of the Shan Plateau. Myauk Mee Kon is south of Pin Thaung village and Kye Taung or 'copper mountain' and north of the 'bead mound' site of Badikon.[63] Looting at this site has been extensive, particularly since 2004. The first findings included bronze musical instruments and a bronze horse on a wheeled platform. More finely made animals came to light in 2005, such as elephants and horned animals *circa* 15 cm in height, either rams or deer. Some, such as an elephant and a ram, stand on a pedestal with adorned spiral coils. Smaller (10 cm) deer have also been found, seated around a rim-like circle. Other finds include polished stone rings, blue glass rings, iron hoes, gold beads, and unifacial shouldered stone adzes reportedly found at 2.5 m below ground level. Ten elephant tusks were also found at 4.5 m below surface level during the early looting at the site.[64] This somewhat recalls finds of 70 elephant tusks, life-size bronze human heads, 'spirit trees,' jades, and ritual vessels at the late second millennium BC site of Chengdu, central Sichuan.[65]

Long bronze mouth organ and detail of figures from Myauk Mee Kon.

Further connections to the north are seen in other bronzes from Myauk Mee Kon. Among these were four heavy, finely made bronze musical instruments. Two are akin to mouth organs from Lijiashan dated to the first millennium BC.[66] The larger piece has a long (35 cm) handle with two human figures on the end, affixed to a gourd-like bowl (10 cm diameter). The heavy gourd-like end is designed to rest on a surface with the long handle vertical. The other mouth organ is smaller (20 cm), a high gourd-shaped vessel with a broken top. It is slender, somewhat like *hula sheng* mouth-organs, with examples from Lijiashan (28.2 and 35.5 cm) being about the same size.[67]

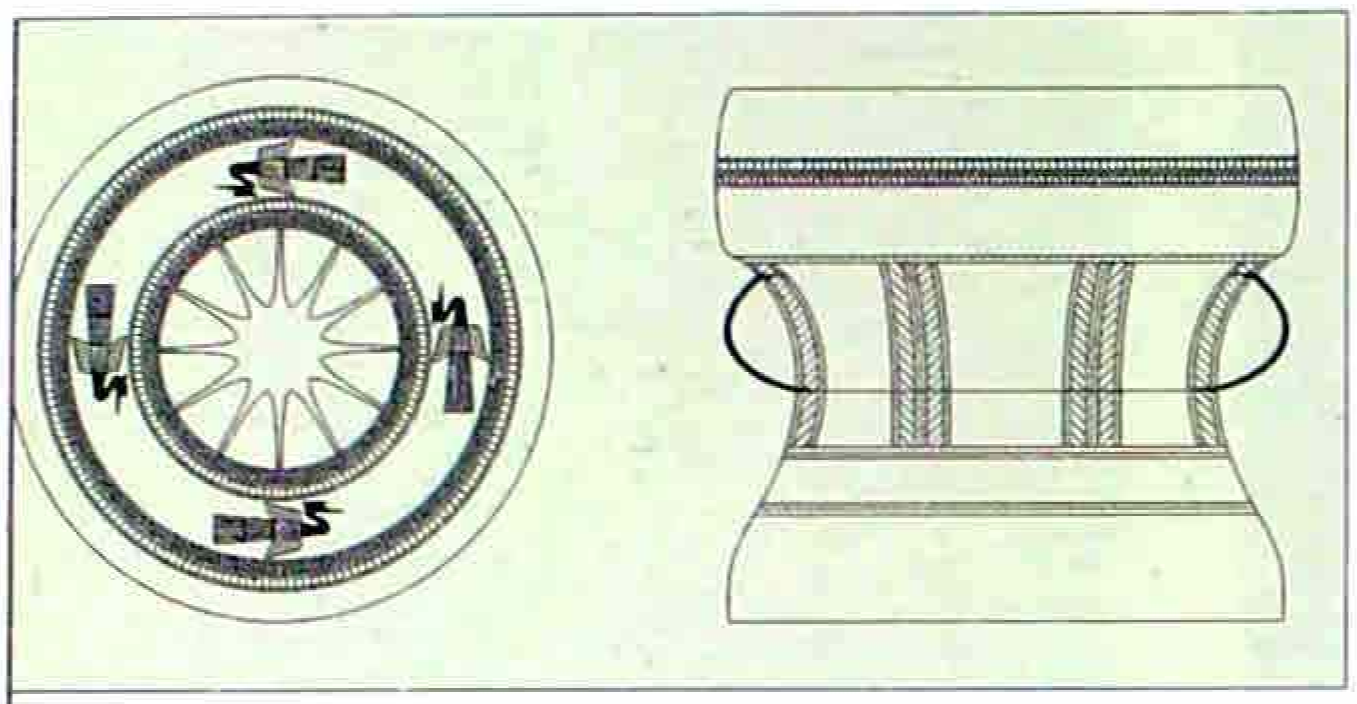
Two other pieces from Myauk Mee Kon are bells. One (15 cm) is heavy with a tall (2 cm) hanging lug, and thick flat braids at the top and bottom of the smooth surface. The braiding detail is similar to the border of pieces of armour recovered from Lijiashan.[68] The hanging loop of the second, smaller and rounder bell (10 cm height and diameter) is set within a concave centre on top of the bell. The surface is unadorned, apart from a series of incised single lines with circles. With spiked hair, eyes, nose and mouth, these appear to be faces, but other examples are needed to clearly identify the designs.

Gourd-shaped bronze mouth organ (height 20 cm) Myauk Mee Kon. *(T&Q collection)*

For the musical instruments, however, we can turn to depictions of performances from both Yunnan and Myanmar. At Shizhaishan (M13: 64, 65), for instance, figures of musicians and dancers with headdresses are found on small gilded bronze plaques (e.g. 9.5 x 13 cm). The figures are lively with some clapping hands and musicians playing a range of instruments such as a flute, various mouth organs and a drum.[69] Another parallel for the mouth organs is documented among the Apo Kayan of Kalimantan. The Apo instrument *(Kediri)* is described as six-toned, with several bamboo sections sealed to a gourd with a long curved protuberance. As the bamboos have small 'tongues' at the ends, the tone of the instrument is similar to a keyboard organ.[70] However, a much older analogy is seen in the Shan mouth organ, for this is one of the instruments found in accounts of Pyu musicians sent to the Chinese court in the early 9th century AD.[71]

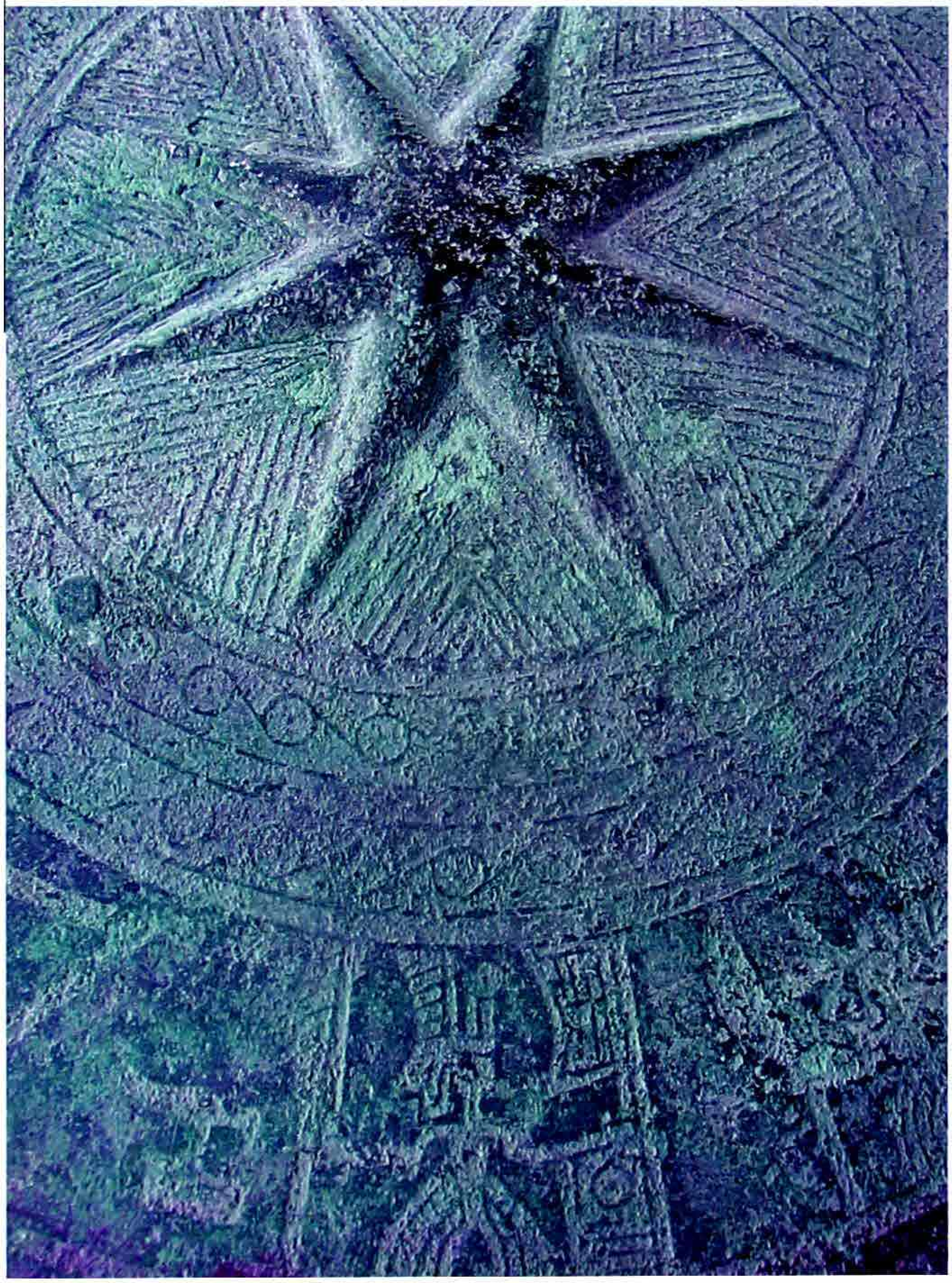
Three views of the same bell from Myauk Mee Kon with inset lug and 'faces' inscribed; 10 cm height and diameter. *(T&Q collection)*

This mission, sent in 802 AD, gave a New Year's performance that was recorded by a court official. Parts of these accounts survive, with one particularly detailed record thought to have been the work of a musician. The orchestra, perhaps from places such as K'un-lun kuo noted in the *Man shu*, is often called Pyu but has many elements associated with Mon peoples. Links have also been



Bronze Drum from Ye-da-kon Taung, east of Mandalay.
(Drawing by Win Maung (Tampawaddy)

Detail Heger I bronze drum with men wearing feathered headdresses and bearing plumed halberds; kept at Sagaing. *(Courtesy Win Maung (Tampawaddy)*

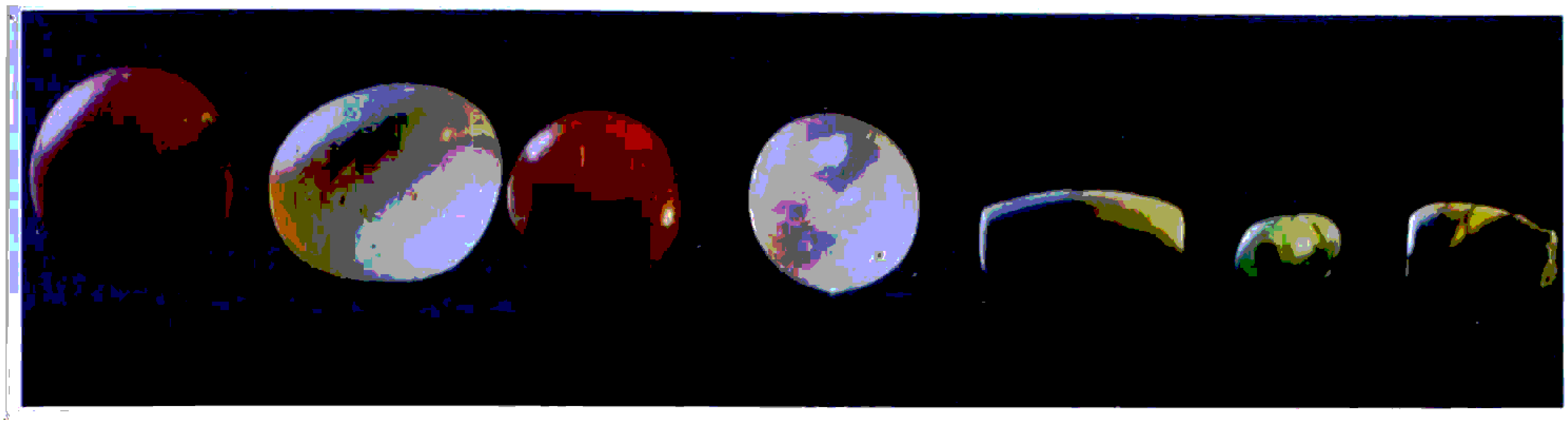


made to the dress and instruments of Funan and the court of Lin-yi, whose population is thought to have been Mon-Khmer. The musical pieces were made of various metals including iron, shell, bamboos, gourds, ivory, horn and strings. They included bells, cymbals, conches decorated with cords, harps, lutes, zithers, flutes, mouth-organs and drums. The large gourd mouth-organs were said to have 16 pipes making the shape of a phoenix wing, with smaller mouth-organs of a similar construction.[72] Mouth-organs and drums are also mentioned in the 11th century AD Mon inscriptions of the consecration of Kyanzittha's palace:

"Then they sounded all the drum-chimes, flutes, trumpets and mouth organs, made the *lāthar* and the *mhāsār* rumble, beat the drum and blew the *kakā*; all the troops raised a shout."

Bronze drums in Upper Myanmar

Given the Myauk Mee Kon links to Yunnan, brief mention needs to be made of the bronze drums recorded in Myanmar.[74] One whole drum has been found at Sin Bo between Myitkyina and Bhamo in Kachin State, with fragments recorded by Win Maung (Tampawaddy) from four drums northeast of Mandalay. A drum in the Bagan museum was found a number of years ago in the relic chamber of the Shwezigon pagoda. It bears only geometrical designs, although two fragments have bird designs, perhaps an egret in one case and in the other, a spotted bull with a plump bird perched on its hindquarters. As noted by Calo', this last motif is mainly seen on Heger I drums in the Dian sphere of influence, and is sometimes found on drum-shaped cowrie containers. It is seen only rarely on the Heger I drums at large, sometimes in conjunction with boats.[75] Another drum kept in Sagaing is also a Heger I drum, with a boat inscribed on the upper mantle and men with feather headdresses and a rice barn or house inscribed on the tympanum.[76] Overall, the drums found to date reinforce the sense of the Samon culture's strong links to the Dian region.



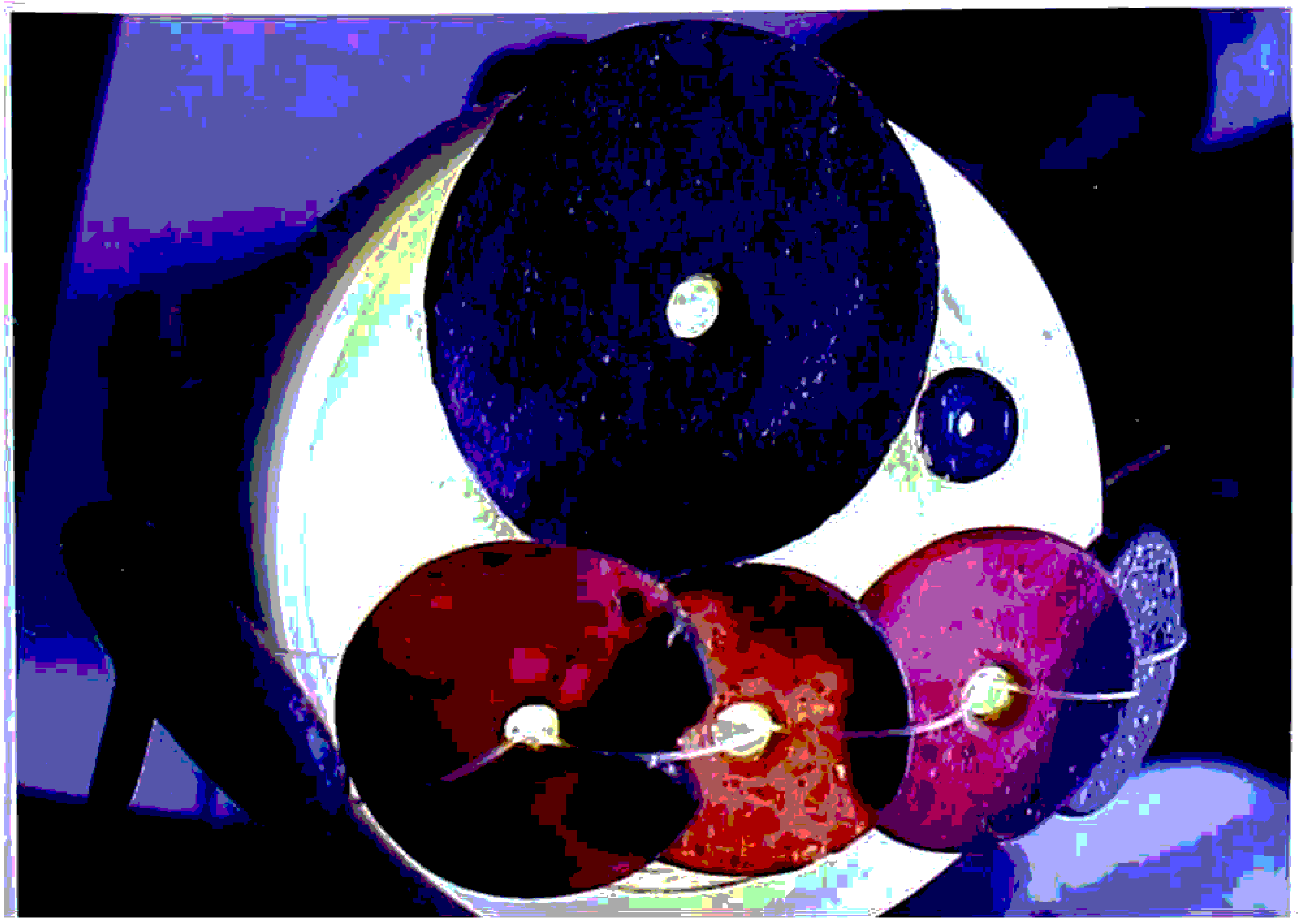
Spherical beads. The colour of some beads, notably carnelian, may have been enhanced with heat as is done today. *(Collection Win Maung (Tampawaddy))*

Beads and Discs

As we have seen, it was bead digging that led to the discovery of the Samon culture Beads are indeed abundant, with materials including stone, fossil wood (*Ingyin kyauk*), semi-precious stones, glass, ivory, bone, gold and silver. Most excavated sites had a range of bead materials. At Hnaw Kan, for example, carnelian and glass beads were the most common. As we saw in the previous chapter, line-decorated beads have been found at Taungthaman, a site with Neolithic and Iron Age material. In general, however, the line-decorated beads, especially those from fossil wood, are (perhaps incorrectly) exclusively associated with Pyu sites. The more complex technologies may be linked to the walled site cultures of the Pyu peoples, but the blue glass rings and bronze animal figures associated with the Samon cultures are also technically sophisticated.

Glass

Glass was used not only to manufacture beads, but also flat discs and occasionally, large rings. Some of these are similar to blue glass bracelets dated to *circa* 400-200 BC found in eastern Cambodia and western Vietnam.[77] The discs vary from *circa* 0.85-3.8 cm in diameter. Colours include sapphire blue, deep blue tinged with violet and violet. Villagers at Ywa-din-gon say they find glass beads and discs at waist level of the skeleton and semi-precious stone beads around the neck or wrists, with green stone beads found with bronze tools and carnelian beads with iron.



Violet and magenta glass discs (diameter *circa* 2-3 cm) from Samon valley. *(Collection Win Maung (Tampawaddy))*

Crystal turtle bead, Archaeology Museum, Yangon.

Spherical beads from Hsinbyukyun, Thaton, Mon State.

Semi-precious stone beads

The most common stone bead materials were red, orange, yellow, brown and white carnelians, varieties of green chalcedony, crystal, amber, amethyst, jasper and banded onyx. Crystal beads are often faceted, but a clear spherical crystal bead has been found at Halin (17 mm in diameter) and in the south at Thaton (8 mm in diameter). Another crystal bead from Sriksetra is in the shape of a tortoise, 39 mm in length and 30 mm wide.[78]

Beads are most frequently spherical, although barrel-shaped, cylindrical, tubular and flat shapes are also found. Decorated spheres are 4-20 mm in diameter, although undecorated spheres may be as much as 30 mm.[79] Barrel-shaped beads range in size from 18-65 mm in length and may be plain or decorated. A lac-colour tubular bead 27 mm long and 5 mm in diameter with triangular cross-section was found at Sriksetra, with similar beads reported from a number of other Pyu sites.[80]

Similar barrel and cylindrical beads are found both in central Myanmar and in the south. The concentration in the Samon suggests it was a major production centre for carnelian and green chalcedony beads, but there has not yet been enough research on local sources to be able to identify other production areas, especially in Lower Myanmar. For instance, a 12 mm barrel-shaped brown-yellow amber bead has been found at Beinnaka, Pyawbwe Township, and a bead the same length but of yellow amber at Thaton.[81] In addition, unfinished beads in a variety of shapes and sizes have been found. These include a 8 mm spherical line-decorated bead found at Maingmaw with no thread hole, a similar one recorded by San Win at Kyaikkatha, and unfinished amber spheres seen by the author at Thagara.[82]

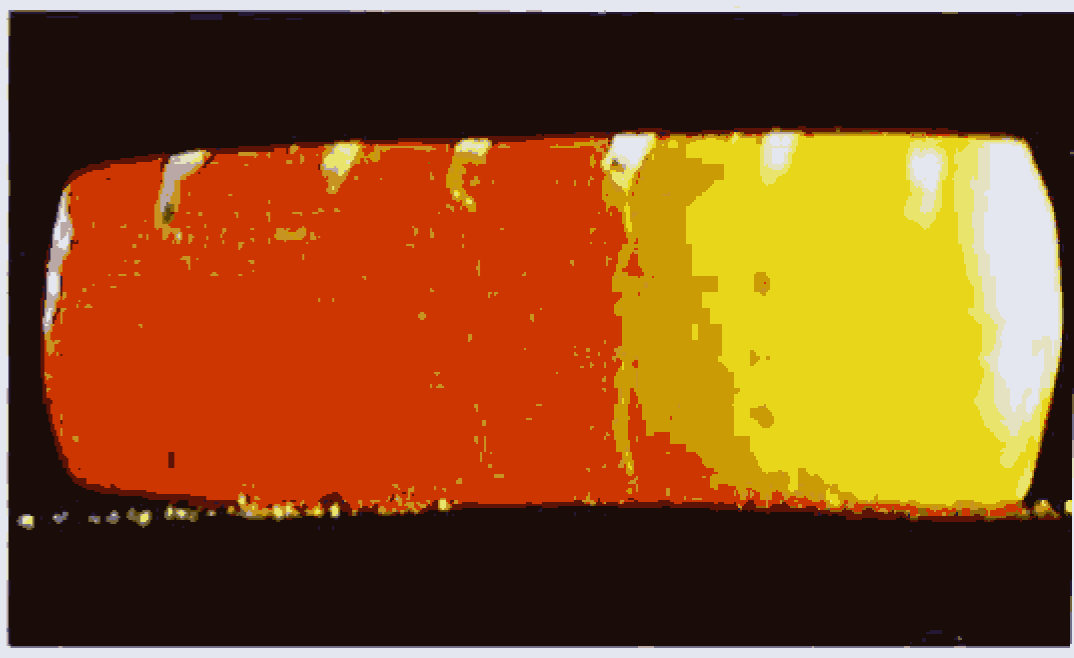
Another group of beads is irregular in shape, mostly banded agates. For example, a leech-shape (17 mm long) with black, white and grey bands has been found at Maingmaw. In the south, a 30 mm long bead with orange and white longitudinal bands has been found at Sanpannagon (Hmawbi). Both Maingmaw and Sanpannagon are known as first millennium AD walled sites, but neither has been examined for its prehistoric occupation.[83]

Spherical beads.
(Collection Win Maung (Tampawaddy))

Samon carnelian leech bead. *(T&Q collection)*

Line-decorated beads

A few line-decorated beads from burials at Taungthaman were black onyx with white line designs.[84] One was made from *mahuya*, a term applied to various stones in Myanmar including agate, carnelian, chalcedony and jet.[85] The bead was incised in preparation for later filling with a white feldspar substance. Other line-decorated beads are made of bone, fossil wood and rarely onyx. Some, possibly a later development, are made using a resist technique, made from combinations such as powdered borax, slake lime, soap, sand and gum. After drying, an alkaline solution was applied to blacken with solutions including one of sodium arsenic trisulphate, copper sulphate, sulphur power and arsenic and sometimes human milk.[86] Other dyeing chemical formulas include arsenic, yellow orpiment, sulphur, ammonium chloride, mercuric sulphide, and boric acid. These are used in tandem with salt, lime, soap and potassium nitrate or gunpowder as bleaching chemicals. As these are used in alchemy, each of the latter is linked to a planet – Mars, Saturn, Jupiter and Mercury, respectively. When used to produce black and white line design beads, the dyeing as a solar or 'hot' property and the bleaching as a lunar or 'cool' one, complement each other. The alchemic use may have followed incising and filling.[87]



Carnelian cylinder bead with white lines. *(Collection Win Maung (Tampawaddy))*

The line-decorated beads from fossil wood have been produced in great numbers during the last century, one well-known village located at Payagyi near the walled site of Waddi. Until they began to be exported, they were particularly made for the Chin who traditionally link their ancestry to the Pyu. This tie is echoed in chronicles where after the 9th century AD fall of Sriksetra, the Pyu dispersed into a number of areas. One of these was the Yaw region west of Popa, with Chins in this region still said to point in the direction of Popa when asked where they originated. Both ancient and more recent beads are valued by the Chin for exchange and as family heirlooms removed from family stone vaults to pass on to the younger generation.[88] Although more recent beads are often brown rather than a deep black-brown, distinguishing these from ancient ones is difficult. When this ambiguity is added to the similarity of so-called 'Samon' and 'Pyu' beads, all Myanmar bead finds would have to be considered archaeologically unviable were they not abundant in mortuary contexts – both with inhumations and in urns.

Black and white line-drawn beads. Both the designs and manufacture may have had ritual signiticonce. The ancient use of fossil wood does not appear to have been documented in Thailand but is common in the Ayeyarwaddy basin. It is found in Samon bronze-iron graves, the Taunthaman-*in* and at walled sites such as Beikthano. *(Archaeology Museum, Yangon)*

Line-decorated beads are not restricted to Upper Myanmar but are also found in the south at Thaton and Sanpannagon (Hmawbi). Line-decorations are seen on both sides of flat beads, although the designs are different on each side. At many sites, decorated spheres of two types are seen, some with vertical lines and others with horizontal. Barrels range from 22-40 mm long (7-14 mm mid-diameter and 5-13 mm end diameter), with five to eight lines. These

Green chalcedony elephant beads. *(Archaeology Museum, Yangon)*

Green glass and crystal elephants, length 3 cm and 1.5 cm. *(Collection Win Maung (Tampawaddy))*

have been found at Halin, Taungdwingyi and in the south at Sanpannagon.[89] In addition to lines, beads are decorated with dots, arrows and circles used on a variety of shapes, including zoomorphic examples. We will return to southern beads in the next chapter, to discuss finds in the Mon State and Tanintharyi Divisions.

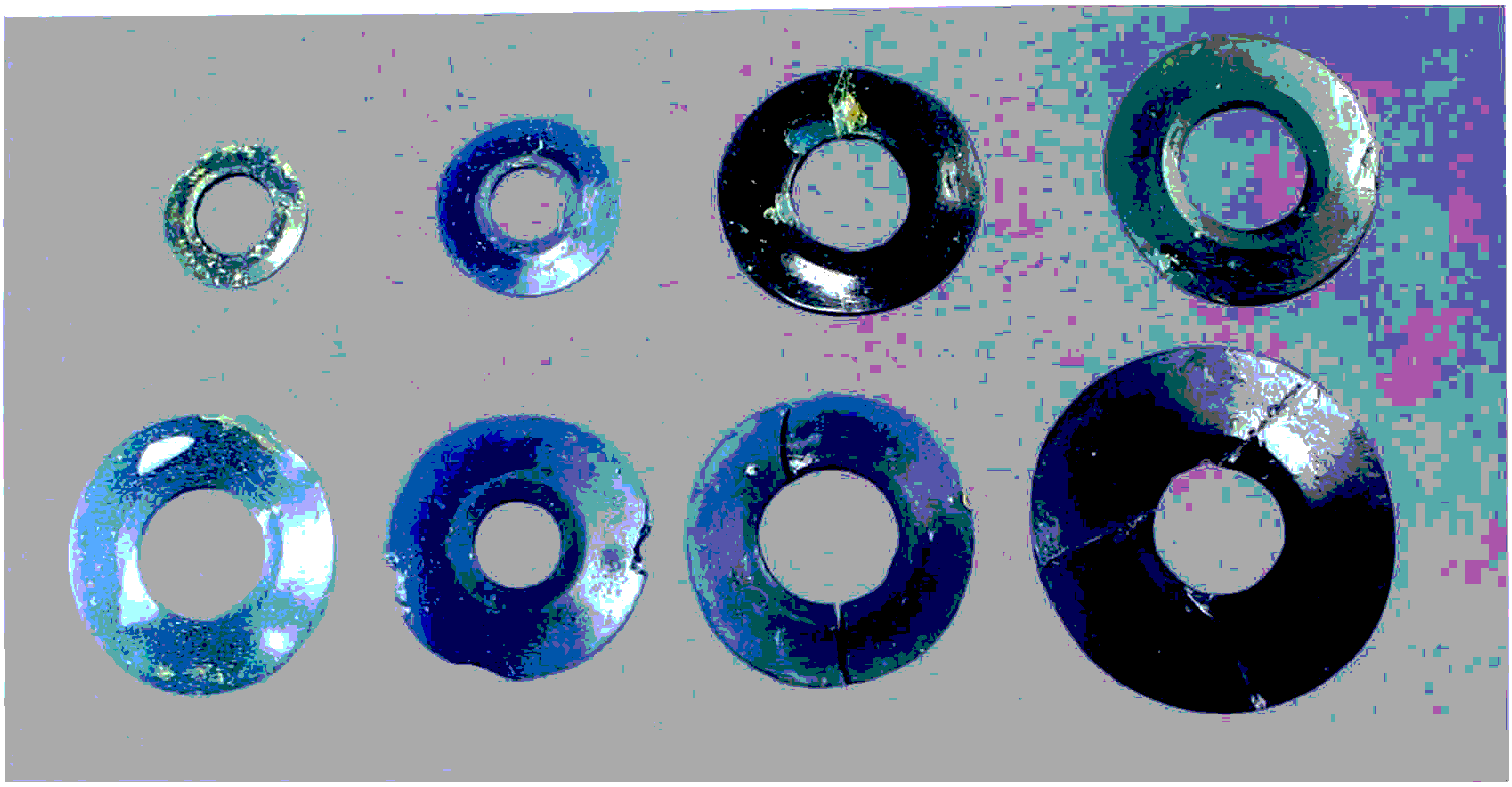
Zoomorphic beads

Zoomorphic shapes include elephants, tigers, lions, a seated man, bulls, ducks (*hamsa*), long-tailed birds, tortoises, frogs, dogs, guinea pigs, rhinoceros, crocodile, fish, pots and owls. A 30 mm amber bead from Beinnaka may be a rat and a 40 mm green stone bead from Waddi a dog. Elephants with tusks are the most common zoomorphic bead shape at both Pyu and Samon sites. Elephant beads from Sriksetra range in size from 1-40 mm in length and may be anything from a whitish colour to a dark jade green or red, and from a laterally rounded almost spherical body to an elongated tubular shape. An elephant bead was one of the items recovered from Khin Ba's mound at Sriksetra in 1926.[90] In the Samon, like other animal beads, they are generally recovered from the neck of skeletons. Although mostly made from green chalcedony, other materials are seen. For example, a blue glass elephant was found with a 'Pyu' silver bowl from Myin Mu Township in Sagaing, and another in a Samon context at Kyut Kan village in Wundwin Township. Some of the zoomorphic forms such a lion or tiger beads have been found in India and Thailand, but up until now, others such as elephant beads, not yet found elsewhere. Many of the tiger beads show a cub in the mouth of the animal, although this is not typical of the tiger beads from Thailand.[91] This type of bead is much longer (*circa* 40-80 mm) than other beads and vary in colour from a milky white to a coffee brown. Although usually plain, tiger beads with painted line decorations have been found at Beinnaka. Some tiger beads recall feline figures seen in bronze engravings of the Dian, or as discussed by Hudson, may have been associated with symbols of authority like the bronze inscribed 'Tally Tigers of the Qin dynasty (207-221 BC).'[92] Other parallels can be seen in Western Zhou bronzes depicting a tiger holding a cub in the mouth.[93] Lion figures are also seen, for instance in a green bead (33 mm) from Taungdwingyi, Magwe Division. The mane and shape of the snout make this bead distinct from the tiger beads.

White tiger bead from Tatkon and anthropomorphic bead. *(Collection Win Maung (Tampawaddy))*

Front view two carnelian tiger beads with calf and elephant. (*Collection Win Maung (Tampawaddy)*)

Necklace of Carnelian beads including lion bead and spheres (diameter 1-3 cm), Sriksetra. *(National Museum, Yangon)*



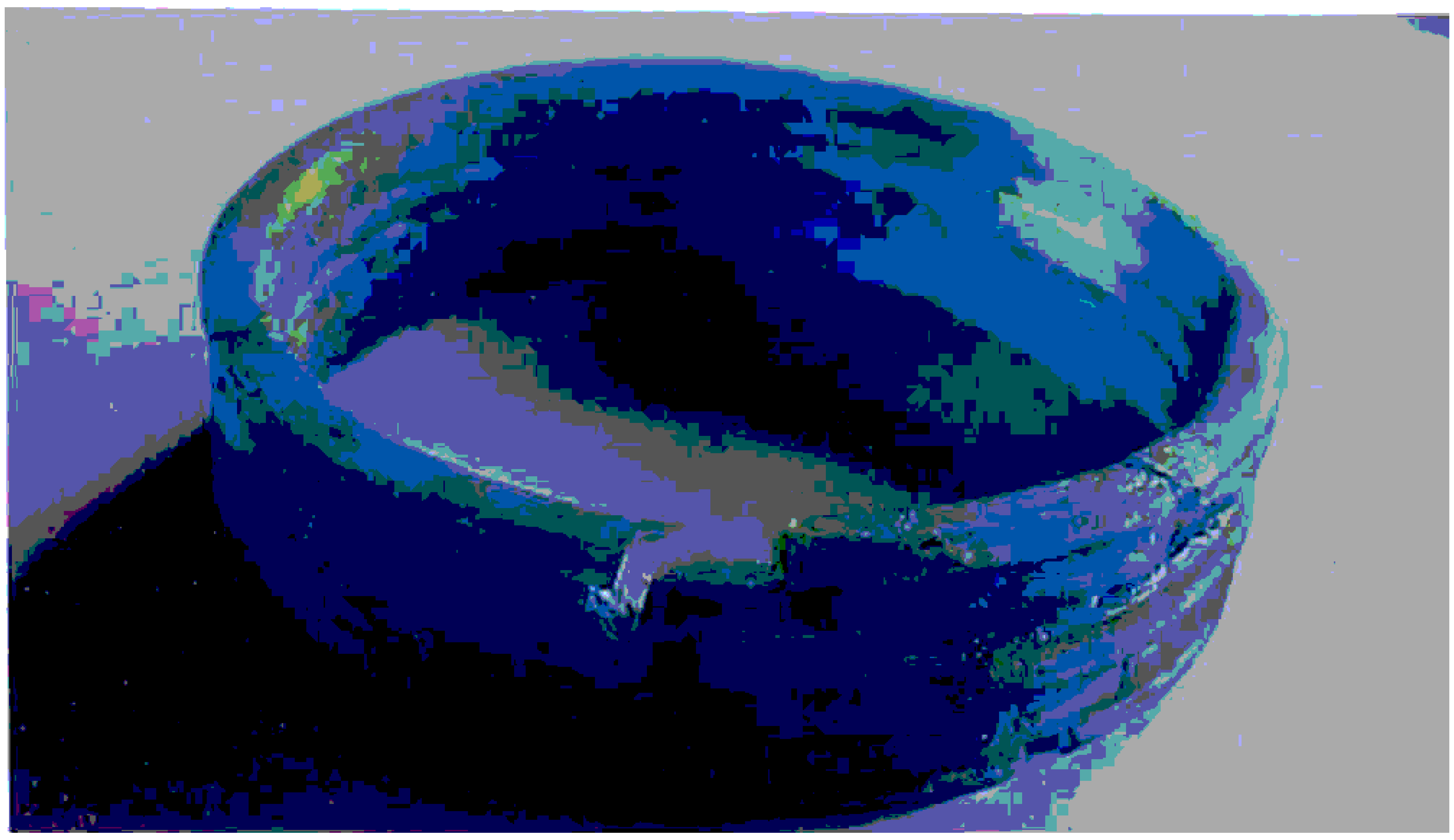
Samon blue glass rings.
(T&Q collection)

Rings

Rings made of glass have been found at many sites in Mandalay, Sagaing and Magwe. While the most common colour is cerulean blue, greenish blue and dark green have also been recovered. Rings of other materials include, for example, a round bronze ring (*circa* 5.5 cm in diameter) recovered from Pyawbwe.

White stone rings have been found at Beinnaka and Khabo and a marbled dark green stone ring at Bulu-gon. However, at some sites both white stone and round blue glass rings have been recovered. A different type of glass ring has been found at Myo Gon, west of Kok-ko-Kha-hla. Made up of six turquoise blue bangles, it is 1.8 cm in width with an inner diameter of 6.5 cm. At Myo Hla, ivory or bone bracelets were found on some skeletons. In short, although a few rings are similar in shape and material to those from the Chindwin, wide variation is seen. As with all other aspects of the Samon, more examples are needed from *in situ* contexts, well illustrated by the brevity of the following site descriptions of Hnaw Kan, Ywa-din-gon and Myo Hla.

Set of six blue glass fused bangles (diameter 5.5 cm). *(Collection Win Moung (Tampawaddy))*



Hnaw Kan

Hnaw Kan village is located on one of several streams that flow down to Pyawbwe from the west. The excavations at Hnaw Kan yielded 84 funeral deposits with 76 skeletons arranged in 15 collective burials over *circa* 60 m. Some burials however, were individual ones, with one grave having traces of a narrow coffin made from the trunk of a tree.

Twelve of the burials were children, with five of having been under five years old at the time of death. One burial contained two skeletons apparently interred at the same time placed over the forelimbs and backlimbs of a horse. The one on the east (S1a) had an offering of meat at the foot and the other (S1b) contained two pedestal cups at the feet. The exposed skeletons were oriented to the north, although Pautreau notes that the underlying skeletons in collective burials could not be removed as they were needed *in situ* for display in a site museum.[94] Metal artefacts included iron socket axes, spearheads, daggers and possibly swords. The only bronzes found were *kye doke*.

In the collective grave 'G' at Hnaw Kan (Malhaing) skeletons were piled up. The bodies had been stretched out in a supine position, the heads pointing north. *(Photo Jean-Pierre Pautreau, MAFM)*

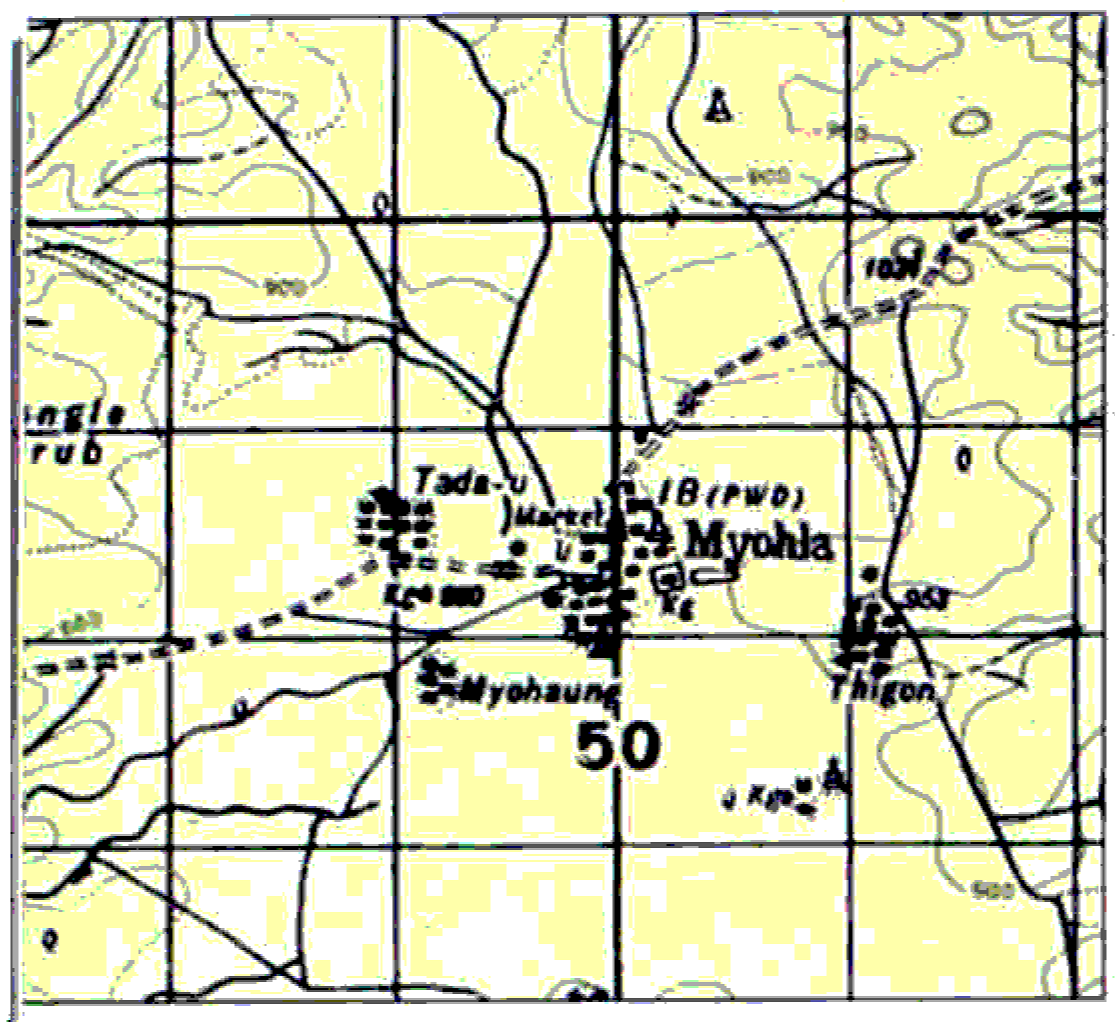
Ywa-din-gon

Ywa-din-gon is located just 4 km north of Hnaw Kan close to the Chaungma-gyi stream flowing into the Samon from the west. Out of 150 burial deposits found at Ywa-din-gon, 67 skeletons were identified in a cemetery area of 3 or 4 hectares. This was larger than the Hnaw Kan deposits, less than a hectare. However, the pattern of habitation and cemetery use in the Bronze-Iron Age Samon sites is not yet clear.[95] Some skeletons were superimposed and several had traces of coffins thought to have been made by hollowing out halves of tree trunks. The narrowness of these was seen in a sideways compression of the shoulders and pelvis. It appears that the coffins may have been added to the clustered burials over time, furthering the sense of a system of kin-based chiefdoms operating in the Samon valley.[96]

Eight graves were large urns in groups of two, three or four taken to be child burials. Similar occurrences of infant burials in two linked pots have been recorded at Songon, Halin and Kyaukkan.[97] At Ywa-din-gon, one of the pot burials was that of a child under two years old (S146). However, children were also buried in coffins. Secondary burials were also identified, some with grave goods and others without. The bones of these were carefully arranged with long bones bundled and placed in the same direction as the head, to the east. Pautreau suggests these may have been down-sized prior to complete decomposition, and moved to manage the grave space within the cemetery. In its implied burial steps, this recalls Win Maung (Tampawaddy)'s hypothesis noted above of a two-stage use for the bronze 'mother-goddess' figures.

East-oriented grave at Ywa Htin (Pyawbwe). *(Photo Jean-Pierre Pautreau, MAFM)*

The inhumation burials on the east sector of the excavations likewise faced east but those in the west part faced north. The western skeletons were associated with carnelian and iron artefacts and attributed to an older iron-using phase. Dates of 400-200 BC were obtained by AMS on the skeletons of the east part. All skeletons were placed on their back, legs elongated with arms



Myo Hla, in a small valley, is at present the southern most excavated Samon site. However, *kye doke* have been recorded futher south, west of Pyinmana. Three mounds are shown. The richest finds were on a hill east of Myo Hla village. Like many other sites, bead-diggers had arrived first.

placed beside the body. Many of the iron objects at Ywa-din-gon were corroded but hoes, knife-blades and spearheads were found. *Kye doke* were found on skeleton bones, in coffin jars, and in mounds of pebbles. As noted earlier, Pautreau has suggested that the *kye doke* in the pebble mounds indicates a ritual use for the bronze packets.[98]

Myo Hla

Myo Hla village is located some 15 km southwest of Yamethin on the Shwe-weda Chaung, flowing into the Samon from the southwest. The location is noteworthy, for it marks the southern limit of the Samon River. The village is flanked by hills on the west (305 m) and east (240 m). In 2004, the Department of Archaeology, assisted by the French Archaeological Mission, excavated five pits in three different areas around Myo Hla. Pit Nos. 1 and 2 were in the village. Pit Nos. 3 and 4 were outside the village to the northwest and No. 5 was on a hill east of the village. At Pit 5, some seven hectares had been destroyed by bead-digging. Pits Nos. 1 and 2, however, yielded a number of skeletons. Pautreau concluded that the site was probably occupied from the Neolithic to the recent period.[99] As with many sites in the Samon, Pyu artefacts have also been found around Myo Hla. For example, silver coins with a rising sun motif have been recorded at Tha Hpan Chaung, Tatkon mound.[100]

Site No. 1

About 30 burial features were recorded at Pit 1. Of these, 20 had bones with the skeletons arranged in several groups. Eight were children, with grave goods similar for child and adult burials. Three appeared to be double burials, with children buried above the lower part of an adult skeleton. Other possible evidence of family groups was inferred by Pautreau in the similarity of artefacts found in adjacent graves. For instance only 10 graves contained beads of semi-precious stone, generally carnelian, or bone or glass. In three adjoining graves, all had a disc-shaped flat bone or ivory bracelet on the lower right arm.

Another adult, however, had ivory armbands on both arms as well as bracelets made of glass and carnelian beads. A shallow pottery bowl was found with this skeleton and also a spherical vase at the feet laid out in an east-west direction. In addition, the deceased had bovine ribs and a cylindrical bronze vase. Analysis by Guirrec Querré has shown this last to be a binary bronze, thought to have been cast.

As seen at Hnaw Kan, meat remains were found in the graves, with six Myo Hla burials having animal flesh. These included bovine ribs, often held together and found under or over the legs or feet. And as at Ywa-din-gon, one to two freshwater shells were often found with some of the skeletons. The skeletons were supine, oriented east to west. In contrast to Ywa-din-gon, however, the skeletons at Myo Hla did not appear to have been down-sized.

Three types of burial containers were identified: coffins made from hollowed out trees (S13), wrappers of bamboo mesh, matting or a similar supple material, and pottery jars.[101] The jar burials were complex, with one having four spherical jars. The use of jar burials

Ongoing excavation at Ywa Htin (Pyawbwe). *(Photo Jean-Pierre Pautreau, MAFM)*

Excavation of Iron Age graves. *(Photo Jean-Pierre Pautreau, MAFM)*

Detail of burial with traces of wooden tree-trunk coffin. *(Photo Jean-Pierre Pautreau, MAFM)*

is notable, bringing to mind their presence at Sa Huynh sites along the Vietnam coast, with their usage linked to Austronesian groups. Dates for the Sa Huynh culture of 600 BC to early first millennium AD are similar to the tentative dating for the Samon artefacts.[102] The wooden coffins were long (2.3 m) but narrow (50 cm), with traces of a white film on the lid. As we noted earlier, the narrow bodies of the 'mother-goddess' figures were possibly proportioned to be able to fix on the lid of the coffins and perhaps then bent to fit within the coffin. Wood on a coffin from Wanjiaba gave dates of 2,405±80 BP and dates of 2,350± 90 BP are cited for the bronze coffin of Dabona in Yunnan.[103] Sorenson, however, has put the boat coffin burials from Ongbah, Kanchanaburi, in west Thailand, in a late first millennium context associated with iron.[104] Iron artefacts from Myo Hla included adzes, a sword and knife blades, one a silk knife. There were also socketed spearheads and other tools. The pottery was the typical 'set' of three: cylindrical pots, spherical pots and shallow bowls with or without pedestals.

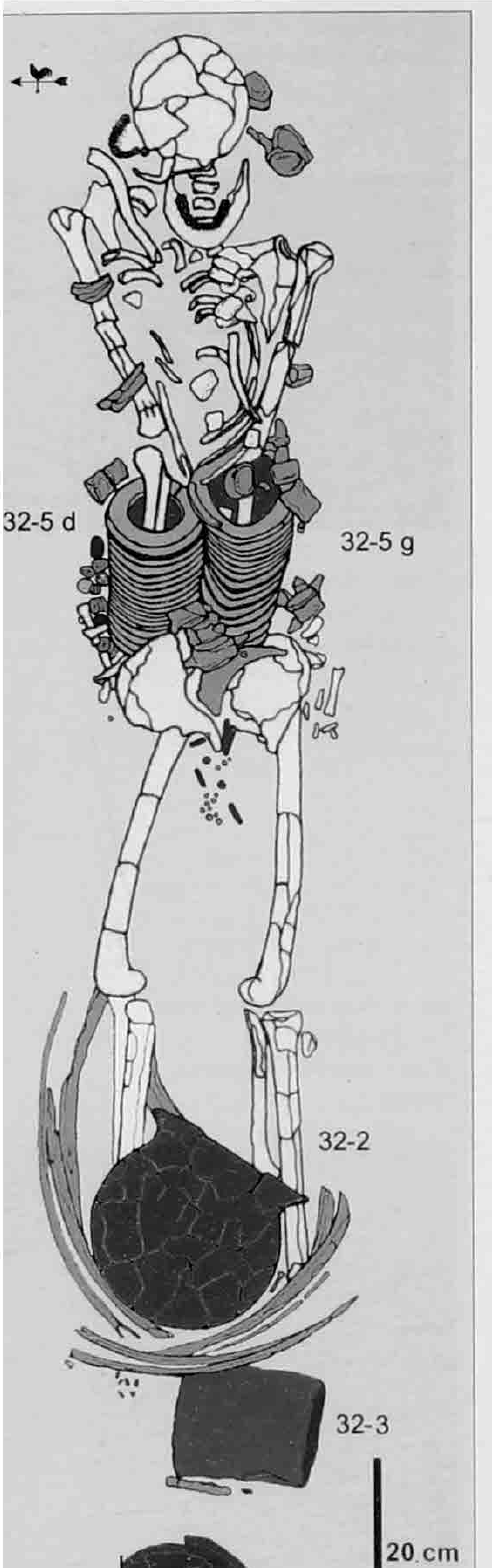
Set of three superposed vessels at Ywa Htin (Pyawbwe). *(Photo Jean-Pierre Pautreau, MAFM)*

Site No. 2

Only preliminary digging was carried out at this pit, but the finds are worth noting for the presence of fragments of a bronze vase similar to that from site No. 1. One of two skeletons found had two ivory bracelets on the left arm as well as a bracelet made of at least five carnelian beads. Pottery items were the typical cylindrical pots, spherical pots and shallow bowls.

Kha Bo

Kha Bo is located on the northern end of the Samon on the Kha Bo stream just south of Taungthaman and the later capital of Inwa. It was surveyed in 1999 by Win Maung (Tampawaddy) while working on construction for the new airport south of Mandalay. Most of the finds from the site are typical of the Samon Bronze-iron area: east-facing skeletons, lidded pots, and glass beads. However, polished stone tools and a stone circle construction suggest either earlier occupation of the site or point to the continued use of stone during the Bronze-iron period. It is also the closest site to Mandalay identified within the Samon culture.



An rich, adult grave at Myo Hla (Pyawbwe). In addition to pottery, the skeleton was furnished with many bracelets.
(Photo: Jean-Pierre Pautreau, MAFM)

Erosion of the red earth of Kha Bo along a cart track has created a steep chasm, exposing three inhumation burials in the top 30-90 cm, all facing east. One was complete having been buried with a pot on the lower part of the skeleton. The pot (16 cm high, 17.5 cm wide) was made of red clay, and painted with white lime. The vessel had a rounded bottom with cord-marking on the lower part, with a sharply angled shoulder and long neck. A tall lid was found on the pot, fitting closely over the neck with a small figure on the knob. Three other pots were also recovered, all red paste with white lime wash and an angular shoulder. One of these, found near the burial pot, also had a lid. This type recalls the vessel from Nyaunggan and parallels to the Halin 'fortress' site of Shagwe noted earlier

Of the eight stone rings from the site, two of green and dark grey stone were oval Chindwin-type rings. Others were round or pointed rings, one only 6 cm in diameter with an inner hole of 3.7 cm. Beads (0.3-1.4 cm) such as spheres, flat cylinders and barrels of green stone and carnelian, glass, terracotta and bone were also recorded. The stone tools from the site were fairly uniform in size, 8-11 cm long and 3.5-4.5 cm wide. Near the site, in Mya Taung's field, a circular stone feature was found. Some 3 m in diameter, it consists of an outer rim of large limestone rocks systematically filled with smaller round limestone rocks to make a 'floor.'

Summary

Our understanding of the Bronze-iron period in Upper Myanmar is still very limited, with the bulk of the data from looting. The exploration and conclusions are primarily based on finds concentrated in the Samon valley south of Mandalay. As Win Maung (Tampawaddy) has noted, the Samon is only one area where there has been investigation, with indications of an equally varied prehistory in most regions of the country. The Samon artefacts include pottery, bronze implements and ritual goods, iron weapons and tools, and a wide range of beads, discs and bracelets or rings. Some of the rings are oval, triangular or pinion shapes, and may relate to the variously shaped rings found in graves of the Lower Chindwin. Other rings, however, are rounded and more like those found in adjacent countries such as Thailand. Similar beads have also been found elsewhere. The Samon appears to have been a centre of carnelian production with some, such as tiger beads, being traded from the Pyawbwe region.[105]

There are, however a wide range of bead materials: from terracotta to semi-precious stone and gold. Villagers suggest and finds seem to support, an apparent earlier use of quartz, especially the green chalcedonies used for elephant beads, followed by carnelian. The relationship of these in the very few sites excavated to date has been used by Hudson to suggest a 'carnelian boundary' of 500-400 BC based on the presence of iron artefacts and abundant carnelian beads. In this chronology, the site of Ywa-din-gon has both early and late phases: an earlier with agate and crystal beads and bronze and the later with mostly carnelian beads and iron. Hnaw Kan, on the other hand, rests on the boundary, as only a few graves had abundant jewellery, materials perhaps coming to the region from carnelian trade with India at about this time.[106] The typology is rough but fits easily within the general timeframe presently given to the culture – and appropriate given that 'bead-fever' led to the discovery of the Samon graves.

Many of the Samon artefacts, such as bronze *kye doke* and 'mother-goddess' figures are not found to date in either the nearby Lower Chindwin valley or China and Thailand. Both the *kye doke* and 'mother-goddesses' are part of high-status inhumation burials, contrasting those of the Lower Chindwin in their display of wealth and evidence of family, possibly matrilineal, clustering in the context of a generalised fertility cult such as that of Ponmagyi noted earlier.[107] The great majority of Samon artefacts have come from burials, not habitation areas. Although Pautreau has estimated the size of the Hnaw Kan and Ywa-din-gon cemeteries, the relationship of these to villages is unclear. It may be, as Hudson suggests, that the larger size of the Ywa-din-gon cemetery is significant, and indicates a smaller population that that implied by the even bigger necropolis sites of Northeast Thailand.[108] However, given the absence of dedicated study, the proposition may be most useful as a model against which to assess future data. Cemeteries are variously located in or outside of current villages but deforestation over the past 100 years and development projects in the last 15 years make it difficult to determine the antiquity of these settlements.

Silver coins with *Srivasta* (obverse). As can be seen by this sample, each coin is slightly different, pointing to local adaptation of common motifs. *(Archaeology Museum, Yangon)*

Rough dates of *circa* 700 BC-300 AD are given to the Samon culture. This overlaps geographically and temporally with walled site cultures in the region, highlighting the need for prehistoric investigation of all these sites. This is particularly the case given the abundant stone, bronze and iron artefacts that have been found at Halin. In southeastern areas of the Samon around Pyawbwe, Samon and Pyu deposits form a continuous stratigraphy. At Beinnaka, for instance, ceremonial stone rings and inhumations have been found under a later city wall, and at Myauk Mee Kon, layers with *kye doke* were overlaid by finely cast bronze musical instruments similar to those from the Dian culture. As we noted, the earliest bronzes from Yunnan date to *circa* 700 BC but the most well known Dian materials are *circa* 400 BC to 100 AD.

The bronzes in the Samon may present a similar sequence to that found in Yunnan, where Calo' has identified two different population groups, the later one equestrians from the north coming into a sedentary cultural zone.[109] In the Samon, it is unclear at present whether the population remained stable until the emergence of Hindu-Buddhist walled sites or whether an agricultural '*kye doke* culture' was altered by another, possibly intrusive, Tibeto-Burman group with links to the Dian area. Ties or conflict with the north may have extended to other areas of China, as suggested by comparison of the carnelian tiger beads with the bronze Tally tigers of the Qin dynasty from around 200 BC.[110] The small village at Myauk Mee Kon was an ideal interchange point, being close to the main road up to Inle Lake, then north to Muse and the Yunnan border.

Upper jaw with gold-filled teeth found near Shwegugyi pagoda, south of Halin.
(Collection Win Maung (Tampawaddy))

Given these varied links, it seems likely that there were a number of Tibeto-Burman groups in the region. It remains to be seen to what degree the Samon area was stable with land use 'locked up' from the second half of the first millennium BC and early part of the first millennium AD. Hudson suggests that the walled sites emerged from this earlier stability as a result of opportunistic adoption of Indic norms by potential rulers seeking advancement within a closed system. Like Stargardt, he then considers the mixed inhumation and urn burial at sites such as Beikthano to be pre-Buddhist.[111] In this view, it was only later, with military conflicts between Nanchao and the Pyu, that the area was destabilised, enabling new leaders to take control, and discarding any identification with the old elite.

Certainly change was an inherent part of the transition between the Samon and Pyu cultures. Mahlo reads this from Pyu silver coins, seeing a stylisation of motifs as a lessening of their significance and an abandonment of Brahmanical elements.[112] Win Maung (Tampawaddy) adopts a similar although somewhat broader stance in his reading of continuity of a generalized fertility cult in the stylized 'mother-goddess' figures on some of the Pyu coins. However, until well documented data is at hand, the specifics of the ritual shift between the two periods remains open – as indeed does the 'Indianisation' of the region.

Whether the few Pyu groups highlighted in chronicles conveniently discarded ethnic identity for political purposes, or were newcomers into an already complex settlement environment remains to be seen. It is important to note that neither the Samon nor the 'Pyu cities' were probably one single 'Pyu tribe,' let alone Tibeto-Burman. The predecessors of Karen groups, for example, may be alluded to in the *Glass Palace Chronicle* story of the fall of Sriksetra:

"A great whirlwind arose at that time and carried away a winnowing-tray, and the woman whose tray it was ran after crying, 'Nga sagaw! Nga sagaw! ('My winnowing-tray! My winnowing tray!). Thereupon the whole country was alarmed and said, 'The Ngasagaw war is come!' And the people split into three divisions. And the king fell ill and died."[113]

And as we have seen with the musical instruments from Myauk Mee Kon, there are indications of not only Tibeto-Burman Pyu but Austroasiatic speakers as well. In a related context, there has been little research on the prehistory of the Mon-Khmer groups such as the Riang, the Palaung and the Wa groups. The ethnic identity is unclear, for example, of an upper jawbone with eight teeth drilled with a pattern of 102 tiny holes filled with gold foil found in 1999 at Shwegugyi Zeidi south of Halin. The jawbone was from a skeleton found under a large stone slab and an associated pillar about 1.5 m long, with gold and silver rings, pottery and iron tools. Chinese records of Nanchao mention that it was the custom of lowland peoples on the southwest border of Nanchao control to tattoo different parts of the body and to cap their teeth with precious metals or lacquer.[114] Luce notes the use of *Chin-ch'ih* or 'gold teeth' from the T'ang dynasty onwards, but there is also reference in a 14th century AD Yuan History to the P'iao as "one of the tribes of the 'Gold Teeth Comfortership'."[115]

The Chinese records of the 'barbarian' groups to the southwest survive often in fragments and were second or third-hand accounts. These groups were composed of numerous shifting segments rather than being singular entities. As we will see in the following chapters, this continues for many centuries, for in the 11th century, the Bagan king was said to rule over 1,000 Pyu tribes.

Documentation of the so-called Samon culture began only in the 1980s following discovery of the brick walls around Maingmaw. Located on the northeast edge of the Samon valley near Kyaukse, its identification led to the renewal of bead-digging. This had long been lucrative as beads were abundant on the surface of walled sites in the region. However, large-scale irrigation projects in the 1980s exposed previously unexplored tracts of land away from the easily recognisable walled sites. These and the renewed bead-fever brought to light not only a rich variety of beads but a range of bronze artefacts not directly mentioned in chronicles and not seen in archaeological reports or collector's hands prior to this time. In this context, the ongoing documentation of the Samon culture represents a major shift in Myanmar archaeology. Whereas the Chindwin bronze finds can be seen in a purely prehistoric perspective, those of the Samon impinge on the Hindu-Buddhist cultures of the first millennium AD.

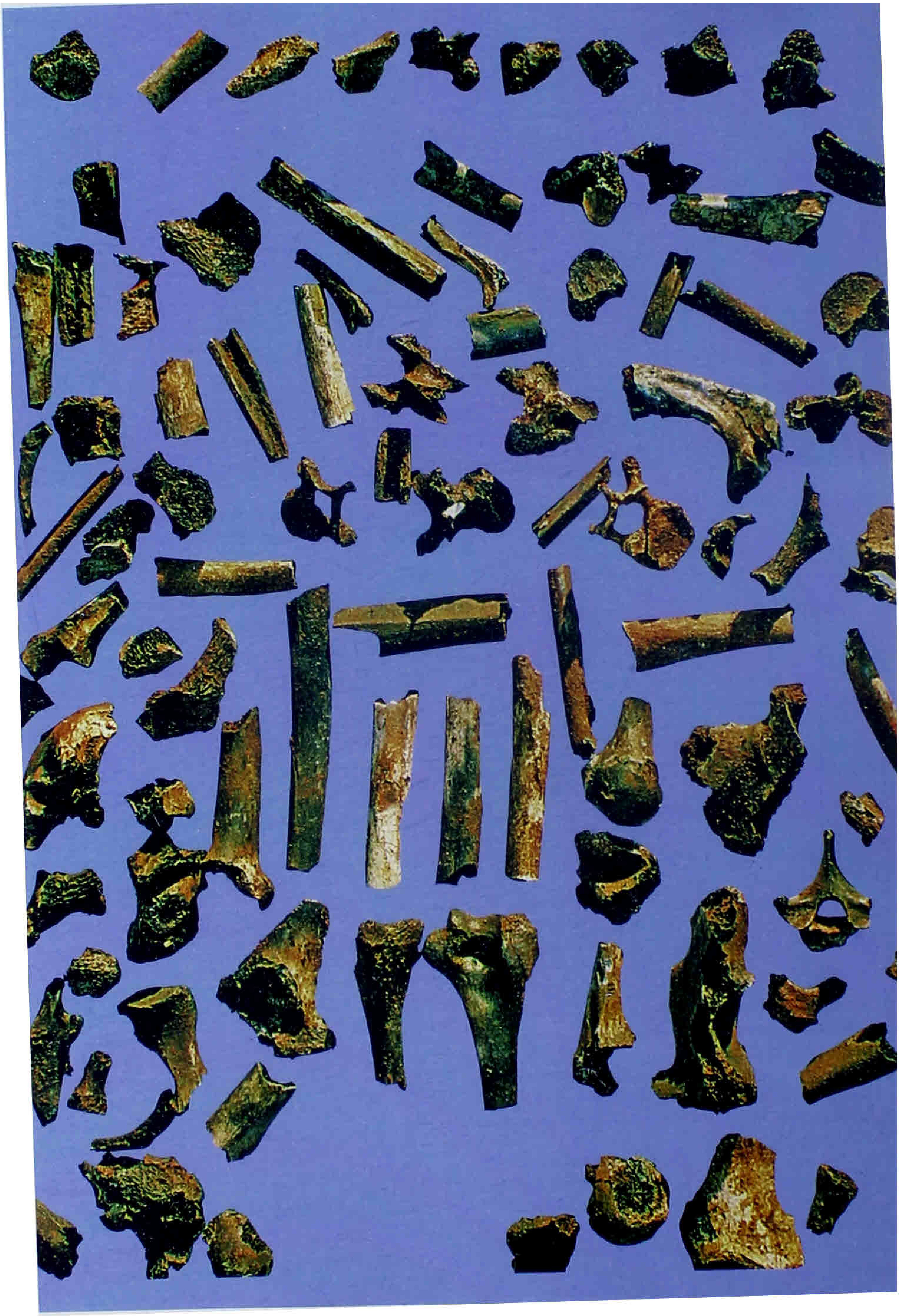
As we will see in the next chapter, the Samon finds give a much broader basis than before for understanding the complexity of a bronze-iron phase in Upper Myanmar. As we saw in the previous chapter, the prehistoric habitation of coastal and peninsular areas is only beginning be documented. Evidence at hand, however, demonstrates the presence of several distinct metal-using cultures, greatly expanding ability to utilise localised resources. The growing wealth of these societies is highlighted by the complex range of artefacts from the Samon valley. We have discussed these varied civilizations in the context of river valleys, but with the walled site cultures, we address the problematic use of ethnic and linguistic typologies for the varied cultural adaptations in the contrasting ecologies of Upper and Lower Myanmar.

FOOTNOTES

[1] Calo' 2007
[2] Pautreau 2006
[3] Higham 2002: 229
[4] Morris 1938
[5] Higham 2003
[6] Moore and Pauk Pauk 2001
[7] Ni Ni Myint 1998
[8] Burma Gazetteer 1912: 78; Dobby 1950: 170
[9] U Win Maung (Tampawaddy), pers. comm. August 1998, August 2005
[10] Tilley and Bennett 2001: 336
[11] Yee Yee Aung 2002; Tayles et. al. 2001
[12] Hudson 2004: 89-90, 2005: 1
[13] Bennett 1988: 131
[14] Sein Myint 2003
[15] Win Maung (Tampawaddy) 2003
[16] Marshall 1951: Vol. 2: 420, Vol. 3, Figures 125, 126
[17] Nyunt Han et. al. 2002; Win Maung 2003a
[18] Von Dewall 1981: 335, Figure 48.1, 337-8, Figure 48.6
[19] Win Maung 2003
[20] Pautreau et al 2001: 99, 2003: 62, 2004
[21] Namio Egami 1985: viii, x
[22] Win Maung (Tampawaddy) 2004
[23] Murowchick 2002: 160, Figure 7
[24] Calo' 2007
[25] X-ray florescence tests Yangon at the University Research Centre; axe tests Nara Cultural Properties Research Institute
[26] Sein Myint 2005: 1; Win Maung (Tampawaddy) 2003a
[27] Kan Yong 1985: 61, Figure 7; Win Maung (Tampawaddy) 2004a: 23
[28] Win Maung (Tampawaddy) 2003
[29] Hudson 2005: 2
[30] Pautreau 2006
[31] Campbell Cole 2003: 120
[32] Campbell Cole 2003: 124; Glover and Bellina 2001
[33] Moore and Aung Myint 1993
[34] Hudson 2005: 2
[35] Saw Lwin 1976: 310
[36] Myint Aung 1982
[37] Aung Thwin 1982: 16; Win Maung (Tampawaddy) 2002
[38] Pe Maung Tin and Luce 1960: 3
[39] Sein Myint 2005: 2
[40] Sein Myint 2005: 4
[41] Indrawooth 2004: 133
[42] Luce 1960: 307; 1969: 3
[43] Wang Dadao 1985: 125
[44] Higham 1996: 139
[45] Wang Dadao 1985: 126
[46] Namio Egami 1985: viii
[47] Calo' 2004
[48] Pautreau 2006
[49] Win Maung (Tampawaddy) 2003: 76; (pers. comm) 2006
[50] Hudson 2005: 2
[51] Win Maung (Tampawaddy) 2003
[52] Kan Yong 1985: 63; Murowchick 2002: 160
[53] Kan Yong 1985: 72, Figure 14
[54] Murowchick 2002: 161, Figure 8
[55] Pautreau 2006
[56] Kan Yong 1985: 5, 26
[57] Khin Htay 1959: 98
[58] Win Maung 2002
[59] Marshall 1951, Volume 2: 442, Volume 3: Plate 132
[60] Win Maung (Tampawaddy) 1998
[61] Myint Aung 1986
[62] Win Maung (Tampawaddy) pers. comm. 2006
[63] Nyunt Han et. al. 2002: 2
[64] Hudson 2004: 88
[65] Murowchick 2002: 140
[66] Palazzo Venezia 1987: 52, Figure 10. 60 cm; 64, Figure 21. 39.5 cm
[67] Murowchick 2002: 167, Figure 13; Palazzo Venezia 1987: 64, Figure 22
[68] Murowchick 2002: 162, Figure 10
[69] Palazzo Venezia 1987: 50-1, Figure 8
[70] Tillema 1989: 225
[71] Than Tun 1965; Twitchett 1961
[72] Twitchett 1961: 180, 185, 191-2
[73] Blagden 1923 (3): i: F: 34, 35; Twitchett 1961: 170
[74] Calo' 2007
[75] Calo' 2004
[76] All data courtesy Win Maung (Tampawaddy)
[77] Hudson 2004: 92, 2005: 3
[78] Aung Myint 1998; Aung Myint and Moore 1983 Figure 17/21; San Win 1986
[79] Moore and Aung Myint 1983, Figure 17/24
[80] Moore and Aung Myint 1983, Figure 24/101
[81] Moore and Aung Myint 1983, Figures 21/69 and 72; San Win 1986
[82] Moore and Aung Myint 1983: 57
[83] Moore and Aung Myint 1983, Figure 22/75; San Win 1986
[84] Stargardt 1990: 24
[85] Campbell Cole 2003: 119; Moore and Aung Myint 1993: 55, 62
[86] Campbell Cole 2003: 126, 130; Moore and Aung Myint 1993: 60
[87] Win Maung (Tampawaddy) pers. comm. 2006
[88] Moore and Aung Myint 1983: 55-59
[89] Moore and Aung Myint 1983, Figures 18-20; San Win 1986
[90] Aung Myint 1998: 77; Di Crocco 1992: 7
[91] Nyunt Han, Win Maung and Moore 2002: 3, Figure 1.6
[92] Hudson 2002: 1, Figure 8; Murowchick 2002: 162, Figure 10
[93] Cooke 2000: 97
[94] Pautreau et al. 2001, 2006
[95] Hudson 2004: 93, 2005: 4; Pautreau et al. 2001, 2003, 2006
[96] Hudson 2004: 260, 2005: 2
[97] Hudson 2004: 89
[98] Pautreau 2006
[99] Pautreau 2006
[100] Nyunt Han et. al. 2002
[101] Pautreau et al. 2003: 61, 2004, 2005
[102] Bellwood 1997: 272, 275

Bronze hilt (18 cm long) from Kyan Hnyat, south of Tagaung, Upper Myanmar. *(Collection Tin Win Oo)*

[103]Kan Yong 1985: 68
[104]Sorenson 1979: 78-81
[105]Hudson 2004; Win Maung (Tampawaddy) 2001
[106]Glover & Bellina 2001; Hudson 2004: 89, 95
[107]Myint Aung 1986
[108]Hudson 2004: 93, 2005: 4
[109]Calo' 2004, 2007
[110]Hudson 2004: 95
[111]Stargardt 1990
[112]Hudson 2004: 261, 264; 2005: 5
[113]Luce 1985: 26; Pe Maung Tin and Luce 1960: 28
[114]Backus 1978: 82
[115]Hudson 2003, 2004: 138; Luce 1985: 15, 66



Chapter Five
'Pyu' and 'Mon'

The numerous first millennium AD walled sites in Upper and Lower Myanmar are commonly called 'Pyu' and 'Mon.' These terms are used here but not in order to identify the sites in relation to distinct ethnic or linguistic groups. Rather, it is the differences in site topography, artefacts and artistic style which we focus on, the aim being to replace what is often a deceptively simple division with a more refracted yet coherent view of cultural interaction throughout the first millennium. Perhaps, as Aung Thwin has described, this was a north-to-south movement with a single dominant presence although the archaeological evidence suggests a much more complex movement of multiple groups. The goal here, however, is not deconstructing entrenched paradigms colouring the rise of the state but defining patterns of landscape alteration and material culture in 'upstream' and 'downstream' regions of the country.[1] Leaving aside the shadow of Bagan, the profile changes character, becoming one of active interchange where sites in Upper and Lower Myanmar from Tagaung and Sriksetra to Kyaikkatha to Thagara are part of understanding the first millennium AD transformation from Bronze-iron cultures to Hindu-Buddhist walled sites.

Opposite: Bones from Vessel 14 in Pit TG31, Tagaung. *(Photo courtesy Chit San Win)*

Burial cluster TG31, Taguang. The pedestal vessel (Pot 11, *left*) bears stamped anthropomorphic motif with bull and elephant (see drawing by WM (T) *above*). Three egg-shaped urns with lids and numerous other vessels.

Southeast gate, Halin.

These patterns were largely determined by ecological opportunism in the very different environments found in the north and south of the country. In the arid but fertile lands bordering the Ayeyarwaddy, available streams and *in-gyi* or lake were maximised to boost cultivation, aided by the incipient local iron production. The production of brick, for buildings and walls, was an essential corollary in the digging of shallow moats buttressing the walls, the water in resulting depressions augmenting the crop yield while demarcating site domain. The association of numerous structures and burial urns with these margins along the outside of walls, suggests we might well break open the concept of inside-wall-outside with one where the wall was a liminal zone drawing in these areas of cultivation profit. In this context, the stupas also assume an economic as well as ritual purpose. The emerging Hindu-Buddhist communities of Upper Myanmar profited in addition from the main river conduit for trade in local and exotic wares, dominating within a competitive patronage network.

The balance of the southern coast was different, however, as were probably the sources of Indic teachings. There, cultivation was extended, most particularly with the inception of localised iron production, but it was the prime location that linked both the north and South Asia with lands further east. The addition of brick to the possible earlier use of laterite as a building material in many cases may have enhanced existing patterns of land alteration, ones where moats were dug deep and ramparts were erected along the margins of low rises in the terrain. Often walled areas were extended to enclose ricelands but the Upper Myanmar marking out of the land with urns and ritual structures flanking the ramparts is not apparent in the south. In the far south, midway down the peninsula on the same latitude as Bangkok, however, are the brick walled sites of Thagara and Mokti at Dawei. Outside the high-laterite zone but within an area with a unique Tibeto-Burman dialect, the placing of urns outside walls recurs. Throughout the peninsula, however, the ecological stresses were also different, the high rainfall making moats and walls not just mechanisms for improving agriculture and delimiting authority but vital means of controlling the land not only physically but perhaps spiritually.

For all their contrasts, the upstream and downstream cultures are part of a shared population orbit commonly called that of the Mon and Pyu. It is the words that are used for these peoples and the regions that have generated so many difficulties. Take for example, the word 'Pyu,' romanised as P'iao in Chinese texts. In the 3rd to 5th century AD, in a Tsin dynasty text, this meant 'rebel,' but in T'ang and later texts meant 'cavalry' – and was used to refer not to a city but a culture. The Old Burmese word 'Pyu,' however, is linked to the 9th century Chinese P'iao only by presuming that the ancient pronunciation of both would have been similar.[2] Luce preferred to call these people 'Tircul,' seemingly their own word for themselves, as well as what they were called by southerners such as the Mon and the Javanese.[3]

The Mon are referred to by an equally large assortment of terms but most commonly as Rmeñ (Rman) or Mon (Man) from the early 12th century in an Old Mon inscription of Kyanzittha and in variants in earlier pre-Angkor Khmer and Old Javanese epigraphy.[4] As these few citations suggest, scholarship has been extensive on both Pyu and Mon, but at present, it is the absence of extensive comparative data that leaves us often using these as broad designations for two geographical zones. Hopefully some day we can replace these instant prejudice-producing words with meaningful type-sites illustrating the diversity of terrain adaptation seen in first millennium sites.

Finger-marked bricks in wall remnant, BT021, Beikthano.

Finger-marked bricks and walls

One of the many tangible outcomes of contact with South Asia was the use of brick as a building material, its production quickening and widening the scale of landscape intervention. As we have seen throughout this volume, the landscape was never a static entity, not 'out there' but part of the lived in world. This world shifted once again with the addition of large-scale brick production to the repertoire of man's interventions with the land.[5] As we noted in the last chapter, Stargardt feels brick was used to construct 'pre-Buddhist' structures similar to timber-pillared halls seen in

East wall of inner palace site, Sriksetra.

Finger-marked bricks *in situ*, BT021 at Beikthano.

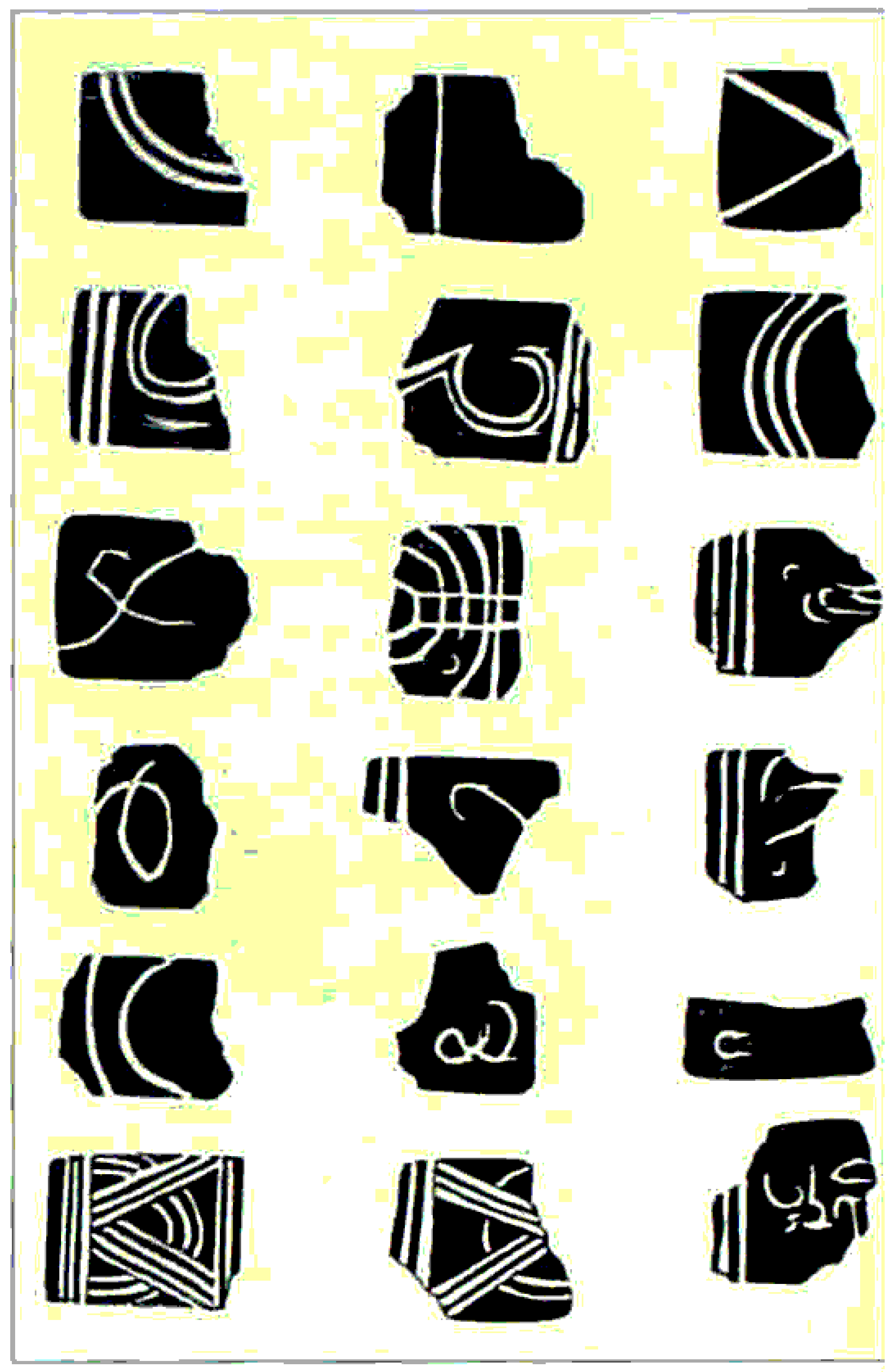
Finger-marked bricks at Kaw Htin, Mon State.

Kaw Htin, Mon State.

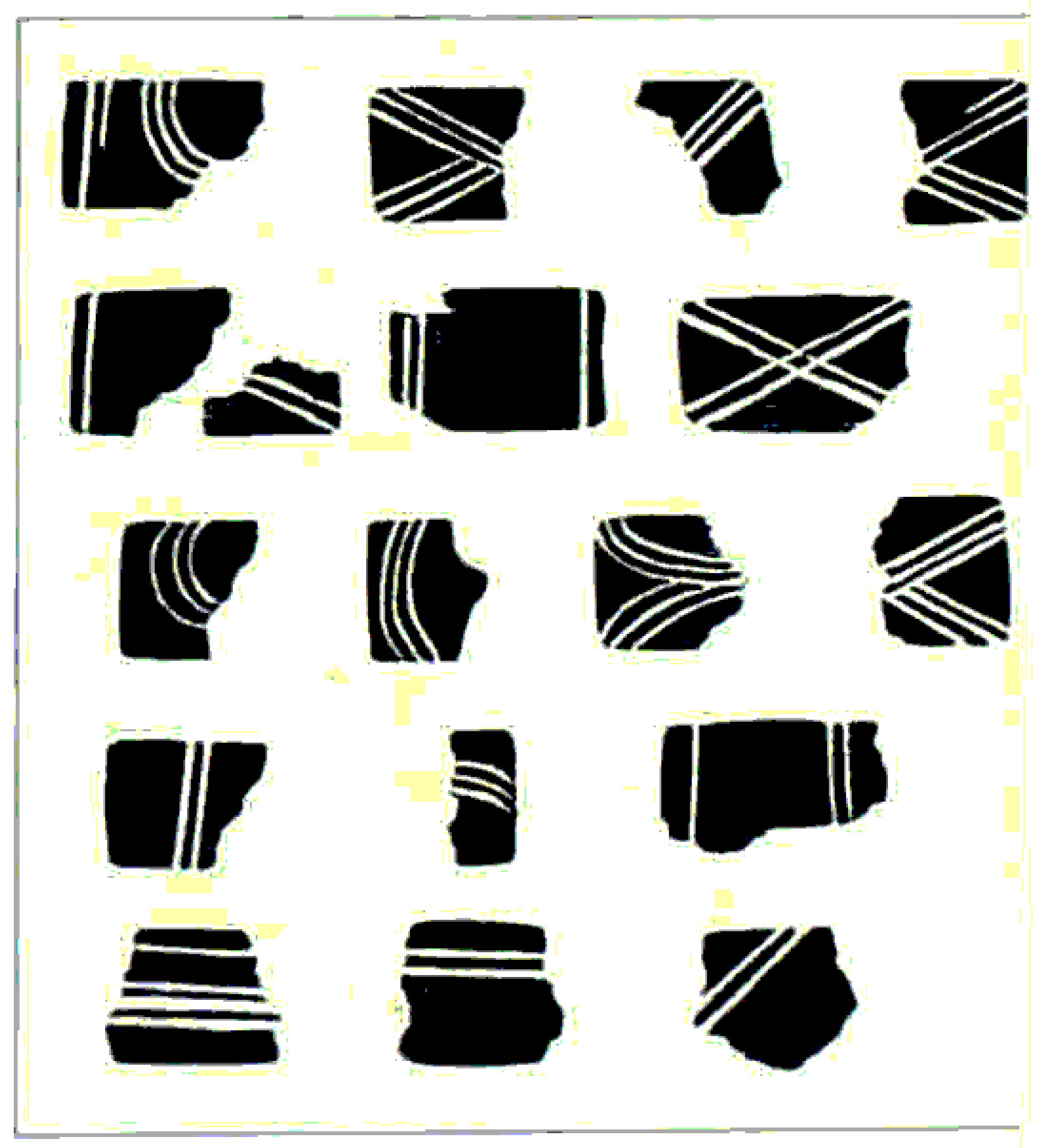
Finger-marked bricks at Mokti, Dawei, Tanintharyi Division.

Southeast Asia.[6] The underlying argument that contact with South Asia brought technical changes that were not necessarily part of the absorption of Hindu and Buddhist teachings is a viable one and it is important to highlight possible local elements. However, in all regions where elite sanction incorporated these teachings, local elements were brought into the new ritual environment. We see this, for example in the next chapter, in describing the construction of stupas at Iron Age burial sites. Thus it may be that a labeling rectangular hall with timber pillars 'pre-Buddhist' defines a separation that was not the case.

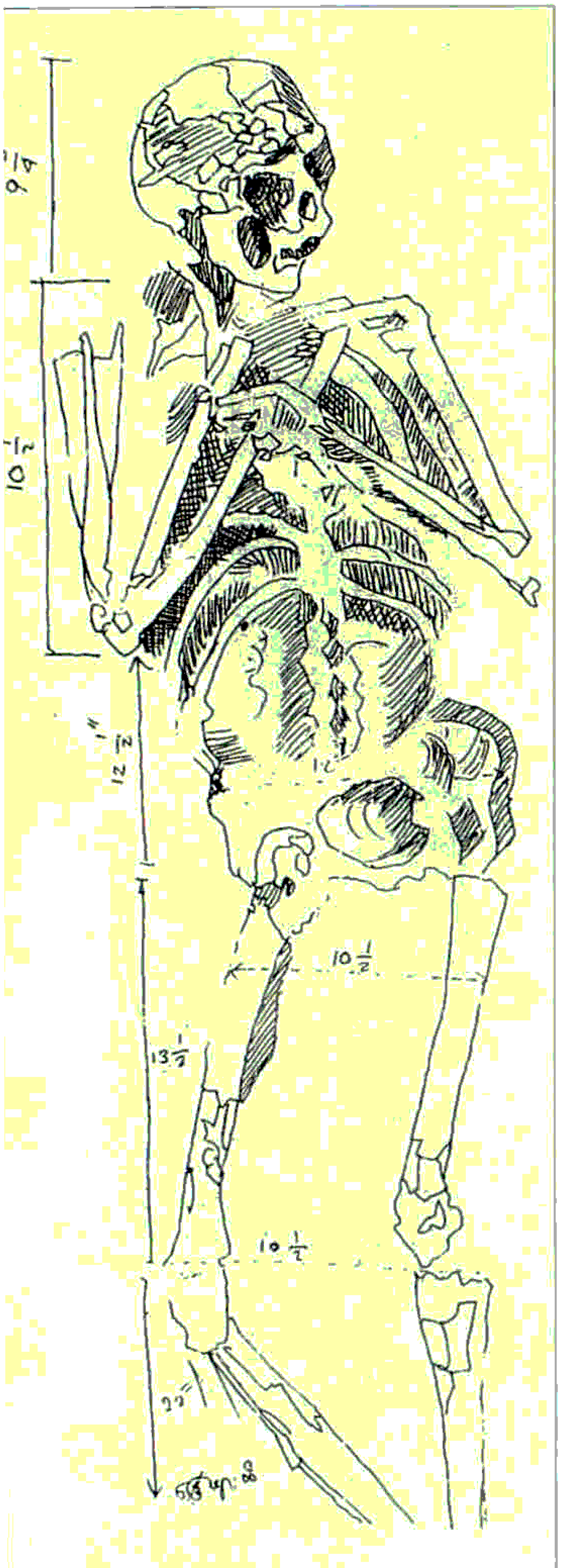
What does identify the changed ritual of the courts is the construction of structures – some of them of brick – for the communities of monks and Brahmins. These included various ritual and residential buildings, with royal allocation of land for religious communities a vital part of the growing court hierarchies. Delineating land, another facet of this process, was likewise symptomatic of the vying for power that comes with such social augmentation. Bricks were used for these fortifications, both the walls and the gates, in conjunction with substantial use of earthen ramparts, timber and in Lower Myanmar, laterite blocks. Some of the bricks have lines on one broad face, designs being either on the ends or diagonal. The patterns were generally were made using one to three fingers of the hand. A few bricks from Sriksetra were marked a second time with stamps bearing Pyu numbers or letters.[7]



Design variations. *(After Moore and Aung Myint 1991)*



Among the different constructions, walls required the largest number of bricks but the central palace-citadel areas were also sizeable. The largest is at Sriksetra (575 x 375 m) but the Beikthano palace-citadel is 450 x 360 m with a 2.17 m thick wall. The outer walls of Pyu walled sites were commonly 2-5 metres wide, often further reinforced with earthen embankments. However, on the southeast side of Sriksetra there is a section with triple walls where the bases measure *circa* 30 m in width.[8] Farming and use of bricks for roads and railways has reduced the height of walls, remains today being some 1.8-4.5 m in height. Many of the accepted wall patterns continue to be re-assessed. Hudson, for examples, questions Sriksetra's 'three walls on the southeast' as well as earlier views on the walls at Dhanyawaddi. Walls on lower-lying land today are eroded from cultivation, with those on the higher side surviving somewhat better. This variation highlights the Upper Myanmar use of walls to circumscribe variable lands. At Halin, for instance, the terrain falls about 30 m from the northwest to southeast corners and at Sriksetra, there is a drop of roughly 20 metres in just the elevated southwest part of the site.[9] At most of the major Upper Myanmar sites, lower-lying seasonal bodies of water (*in-gyi*) provided a natural barrier. When the soil in adjacent areas was dug up for bricks, a newly constructed moat provided additional seasonally flooded areas that could be used for nursery rice cultivation. Thus on the lowest land south of Halin where *in-gyi* and salt were exploited, no moat is seen. Similarly, lakes form the west border at Beikthano and the east at Sriksetra.



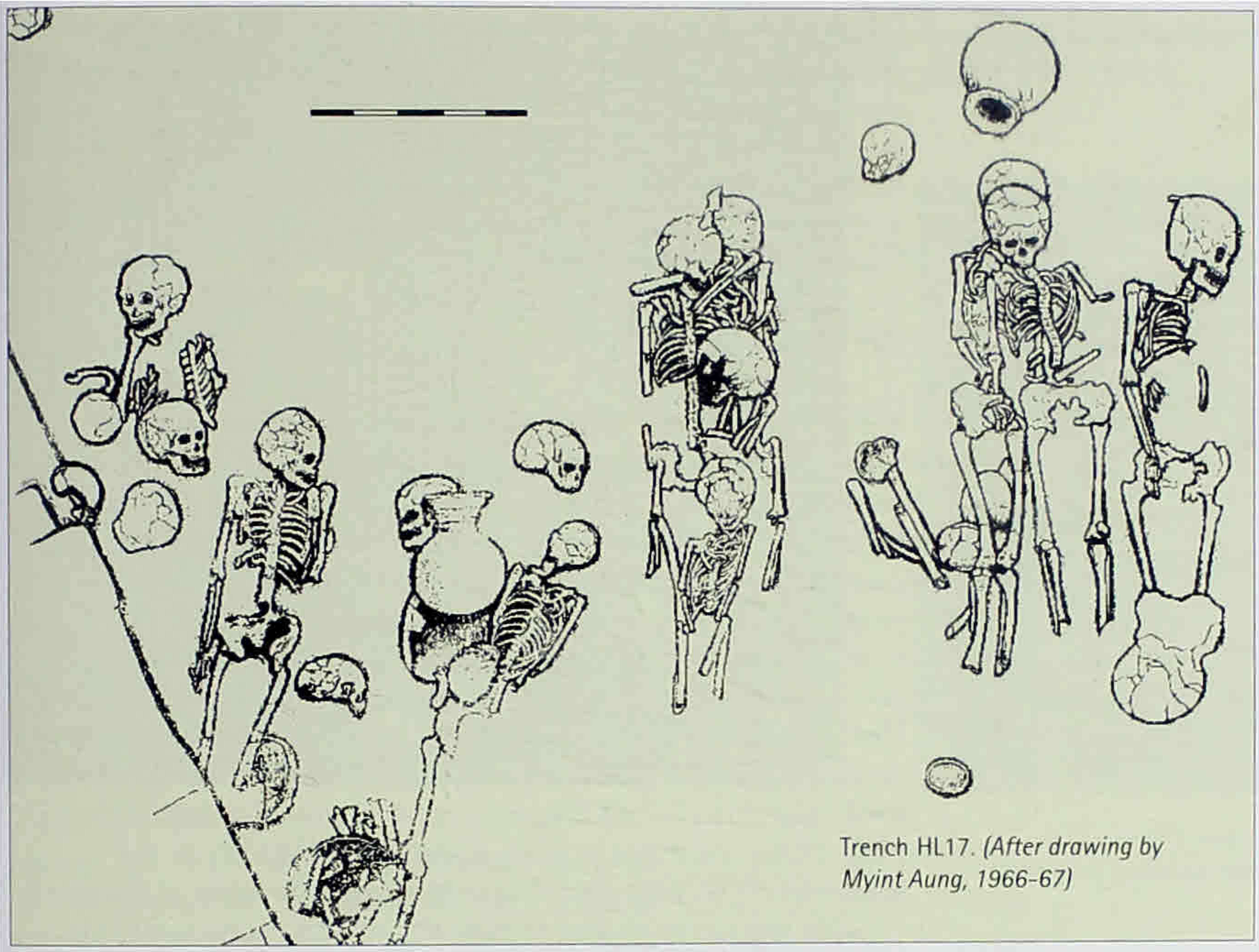
Drawing of skeleton excavated at HL20, Halin. (*After San Win*)

Chinese emissaries noted that these walls, combined with the enclosed areas of rice fields, ensured the king's ability to withstand a long siege.[10] Not only outer walls were made of brick, but walls within the city, as well as the many monastic and ritual buildings. The volume of bricks needed to build a one kilometre section of wall was about 319,147 cubic feet (95,744 cubic metres), calculated using an average size brick used at that time (c. 44-50 x 20-26 x 6.3-7.6 cm).[11] This is roughly equal to the volume of bricks needed to build ten large memorial halls (c. 25 x 15 m) such as KKG9 at Beikthano where the walls were some 1.25 m (4 ft 3 in) thick.[12] To obtain clay for these varied uses, soil was dug out adjacent to the walls and in natural depressions, making reservoirs in the form of moats and tanks. The remains of these efforts have formed 'scars,' recognizable shapes and patterns on aerial photographs likened to the process of scar tissue forming over to a deep cut.[13]

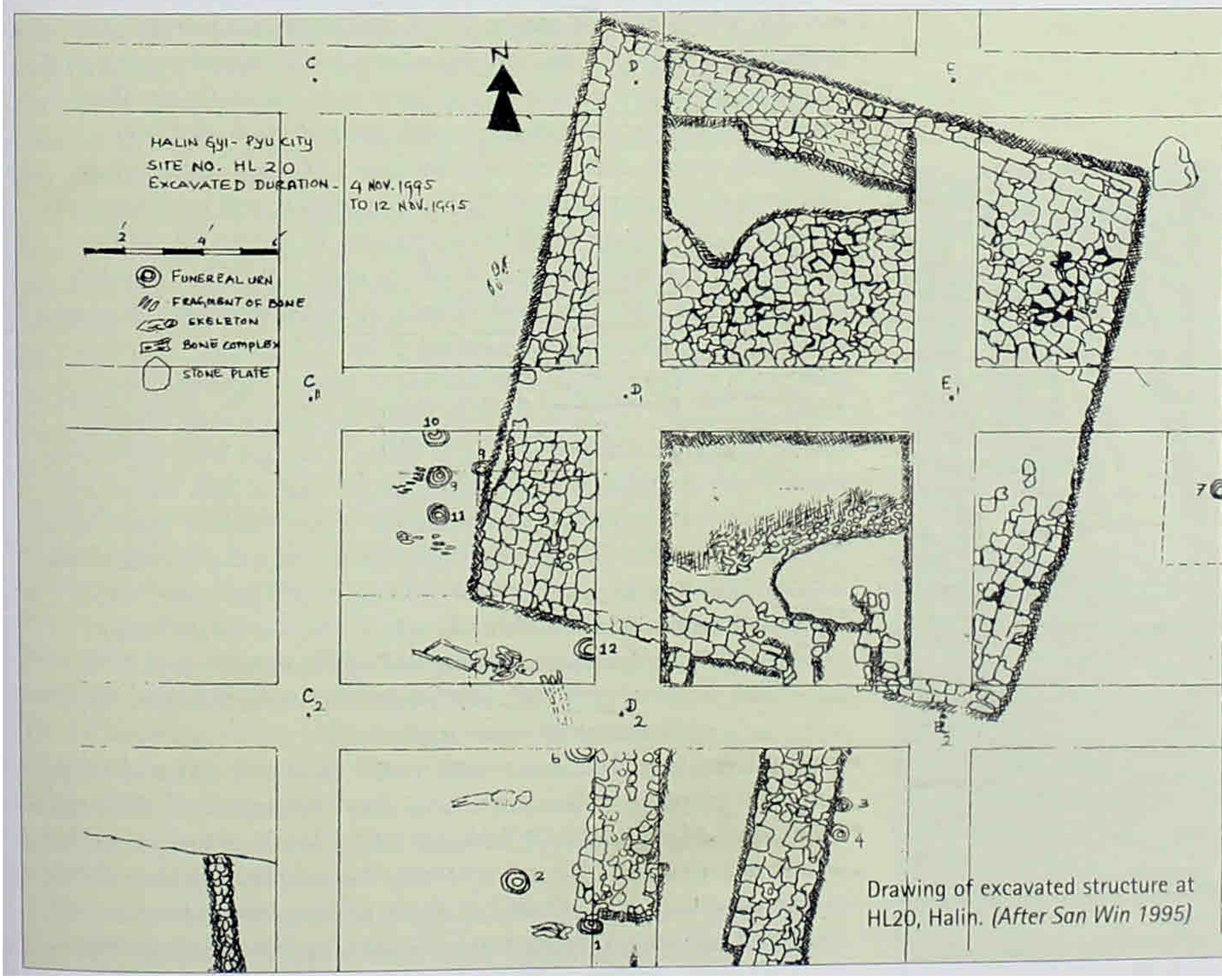
In Thailand, finger-marked bricks have been recorded in Central and Northeast Thailand as far east as Phimai, but they are found all over Upper and Lower Myanmar. In Lower Myanmar, laterite blocks and bricks are similar in size although somewhat different in thickness. For example, at Kyaikkatha, larger bricks measured 47.5 x 21 x 10 cm to 37.5 x 16 x 8.75 cm and laterite blocks were 55 x 27.5 x 22.5 cm, 35 x 27.5 x 12.5 cm to 22.5 x 15 x 7.5 cm. Also at Kyaikkatha (KKT7), some of the smaller finger-marked bricks were found capping walls which would have been a regular part of production.[14] While they have been used to construct railway beds and re-build roads, unlike beads and silver coins, bricks are not of interest to collectors and usually remain where they were made.

Brick production may have come from India by overland routes, but equally perhaps via the coast to Lower Myanmar where it logically would have followed earlier use of laterite or *gawun* blocks for building.[15] A parallel to the Lower Myanmar use of laterite block and brick moat-rampart construction is seen in Bangladesh, where straw or rice is mixed with soil in ditches dug around a village. The mixture is allowed to soak for a few days and then formed into blocks, used to build walls with mortar made from the local red lateritic clay. Its effectiveness is such that it is "not easy to break them even with picks" with houses lasting more than two hundred years without extensive repair.[16]

The origin of finger-marked bricks in South Asia remains unclear. Preliminary survey of Buddhist sites in India and Nepal recorded finger-marked bricks in Bihar (Varanasi or Sarnath), Kosambi, Rajagriha, Vaishali, Uttar Pradesh (Kusinara, Saravasti) and at Kapilavastu. In a number of cases the finger-marked bricks were kept as relics and were believed to have protective power.[17] However, markings on the surface have been little noted in a South Asian context. For example, a brick with three curvilinear lines was included amongst finds from Dandauli, Saharanpur in 1935 but only the thickness of the bricks (6-10 cm) merited comment.[18] Likewise, in a more recent report on Bogra, the discussion is on other aspects such as the size of the bricks, quite similar to the larger ones found in Myanmar.[19] Finger-markings can be used as a



Trench HL17. *(After drawing by Myint Aung, 1966-67)*



Drawing of excavated structure at HL20, Halin. *(After San Win 1995)* rough guide only, but provide valuable evidence of first millennium AD habitation and in many instances, the repeated construction of elements within the walled domains.

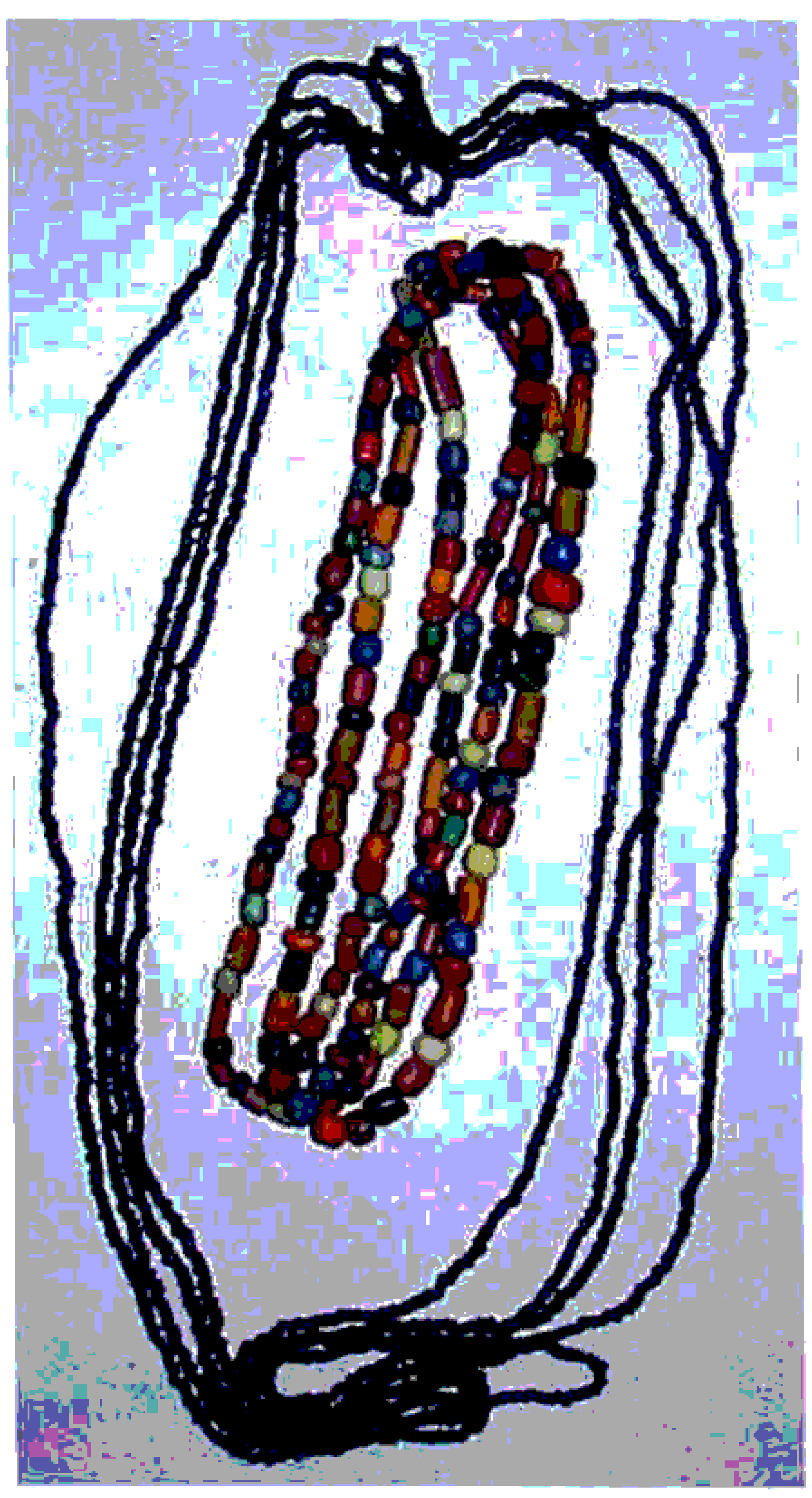
Within Myanmar, these walled domains are commonly identified by the presence of seven traits: finger-marked bricks, fortifications, a central palace-citadel, urns, beads, silver coins and inscriptions. Given that many artefacts are found outside the walled areas, and the rarity of inscriptions, finger-marked bricks often provide the sole reliable temporal index.

Stone urn from Sriksetra.
(Archaeology Museum, Sriksetra)

Urns and beads

Within the walls of Upper Myanmar sites associated with Pyu peoples, urns have been recovered on the interior and exterior of halls and stupa-like structures, rectangular buildings with a circular core. In memorial halls, they are found both on the exterior and the interior, where they may be grouped around post holes that would have contained wooden pillars. At the stupa-like structures, one or two skeletons or a pile of bones often mark the cluster of urns. Urns were also placed in the city gate areas. At Halin, urns and skeletons were found in the lowest stratum under the road of the south gate (HL17).[20] At Sriksetra, two urns were unearthed during 1997-1998 excavations at Lulin Kyaw gate (HMA34) on the southwest. Both were placed against the outside curve of the gate.[21]

This placement of urns outside city walls is common to most of the Pyu sites. At Beikthano, Aung Thaw cites 'countless low mounds which are urn graves.'[22] The Sriksetra urns are similarly located on elevated areas, and have been found together with iron artefacts. One such cemetery is located near Yahandagan village south of Sriksetra. Duroiselle records unearthing over 1,000 terracotta urns in this area, with another 1,000 left undisturbed. The urns measured some 15-22.5 cm in height, and were arranged in rows and layers on small brick terraces. In the middle of the mound was a stone slab, and on the summit, a possible wooden structure. The associated iron objects included iron nails, pins and a spiked plate with 43 nails ranging from 17.5-29 cm.[23] Another plate with spikes or nails was recovered from a cemetery near Mahtaw village. The iron finds at Halin do not include similar plates, although a large number of spiked caltrops were recovered outside the city gates.[24] Thus although the type of iron varies, iron artefacts are a common accompaniment to urn finds, a reminder as well of the association of walled sites throughout the mainland with iron production, expanding rice cultivation and increased social hierarchy. Iron is also traditionally used in Myanmar alchemy, perhaps a factor in the embedding of large iron nails outside city gates. It is in the context of such localised practices that the royal stone urns of Sriksetra are best understood.



Small and medium beads; Thagara, Dawei, Tanintharyi Division.
(Collection Than Swe)

Only five inscribed stone urns – each close to a metre in height and over 2 metres in circumference – have been studied, although a number of additional stone urns are found south of the site as the so-called Beikthano Queen's cemetery. No information is available on associated finds for these but as we will see below, they are inscribed with royal names variously dated to the 4th to the 8th

Two views of Beikthano Queen's cemetery urns, Sriksetra.

century AD. A few urns made of bronze have also been found but most are terracotta – and there are many. The thin walls of the terracotta vessels mean that few have been recovered intact, but in cases such as a *stupa*-like structure (HL20) at Halin where depths were recorded, they often appear in two different layers.[25] Some may have been purpose-made, but a range of other vessels were also used. The purpose-made urns were made of coarse clay, in contrast to a finely levigated clay for decorated wares, and medium clay for ordinary vessels.

No systematic study has been made of urn contents although these are commonly cited as being ash, bone fragments, silver coins and semi-precious stone and glass beads. The stones are usually carnelian, quartz and chalcedony, but amethyst and sapphires have also been recorded. As we saw in an earlier chapter, similar beads are abundant in Samon bronze-iron graves and provide one of the few artefacts linking it to the Hindu-Buddhist walled site cultures of Upper Myanmar. This makes it difficult to distinguish the two, for without provenance, no distinction can be made between carnelian spheres found in a bronze-iron grave and those found in a terracotta urn. However, not all beads were for funerary use, with elite ornaments marked by the use of gold. A funerary-ornament distinction is also made at Thagara, in the south, where only small beads are found in urns and larger ones elsewhere in the walled site. At Tagaung, where at least three burial urns have been excavated, one included six iron points, a bronze bracelet and ring, a bronze rattle designed to wear as a ring, a coiled iron ring and carnelian, quartz and chalcedony beads. Two other pots had iron swords, beads, ash and bone.[26]

Urns have been classified by Hla Tun Pru into bowls, globular, betel box and a high narrow multi-ridged neck types. Bowls

Teardrop shaped clear corundum bead (*circa* 1.5cm) in gold lotus fitting. Like most gold objects, the piece lacks good provenance, but as gold work such as this is absent in the Samon bronze-iron graves, it is linked to the so-called Pyu cultures. *(T&Q collection)*

Pottery previously identified as Pyu urns from Halin, may be associated with Samon bronze-iron culture. *(National Museum, Yangon)*

Thagara urn, Hpaya Gyi Museum, Dawei, Thanintharyi.

Current production pots in Dawei, with shapes akin to Thagara urns.

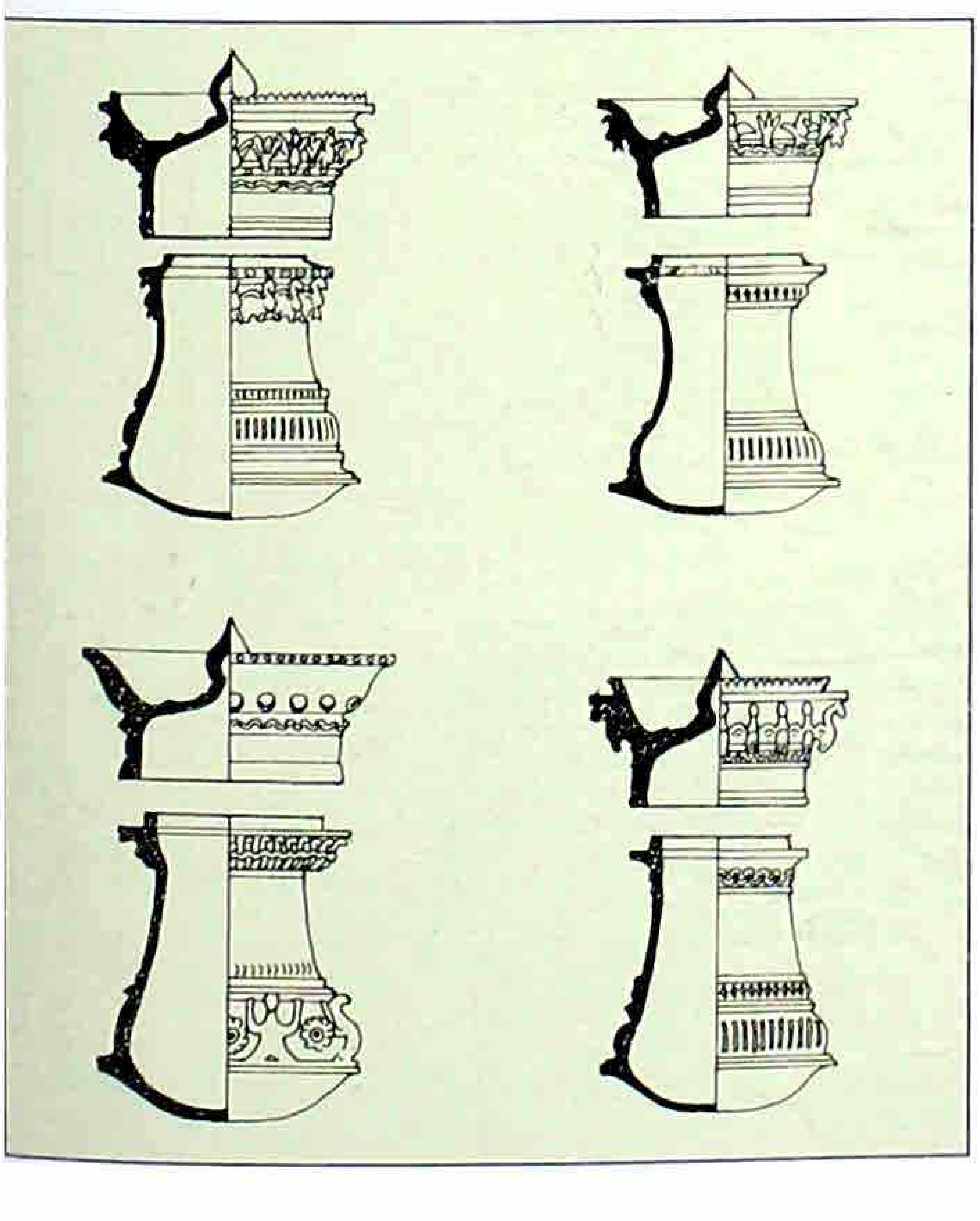
generally had lids and at Beikthano (KKG12) ranged in diameter from 15-25 cm. The globular vessels had different forms of neck, some carinated, with a pot of 38 cm recorded at KKG1. The betel boxes, called drum-shaped by Stargardt, ranged in size from 25-33 cm in height and 10-30 cm in diameter. The narrow-neck type had a similar size range, from 18-25 cm height and 15-20 cm in diameter. Other forms have been found, including an inscribed cylindrical pot containing bones, silver ornaments and white pebbles were found near one of the royal stone urns.[27] The urns were plain, although pottery from Halin was sometimes decorated with panels containing human figures, *Srivatsa* and *Bhaddapitha* motifs, or impressed with hatching, punch-marks or rouletting. The association of urns exclusively with the Pyu culture has yet to be verified. For instance, a lidded urn from Shagwe, one of the forts of Halin, appears to be a burial urn and the lid of one terracotta urn from Halin has been likened to a stupa form thought to have evolved only in the late 11th century AD.[28]

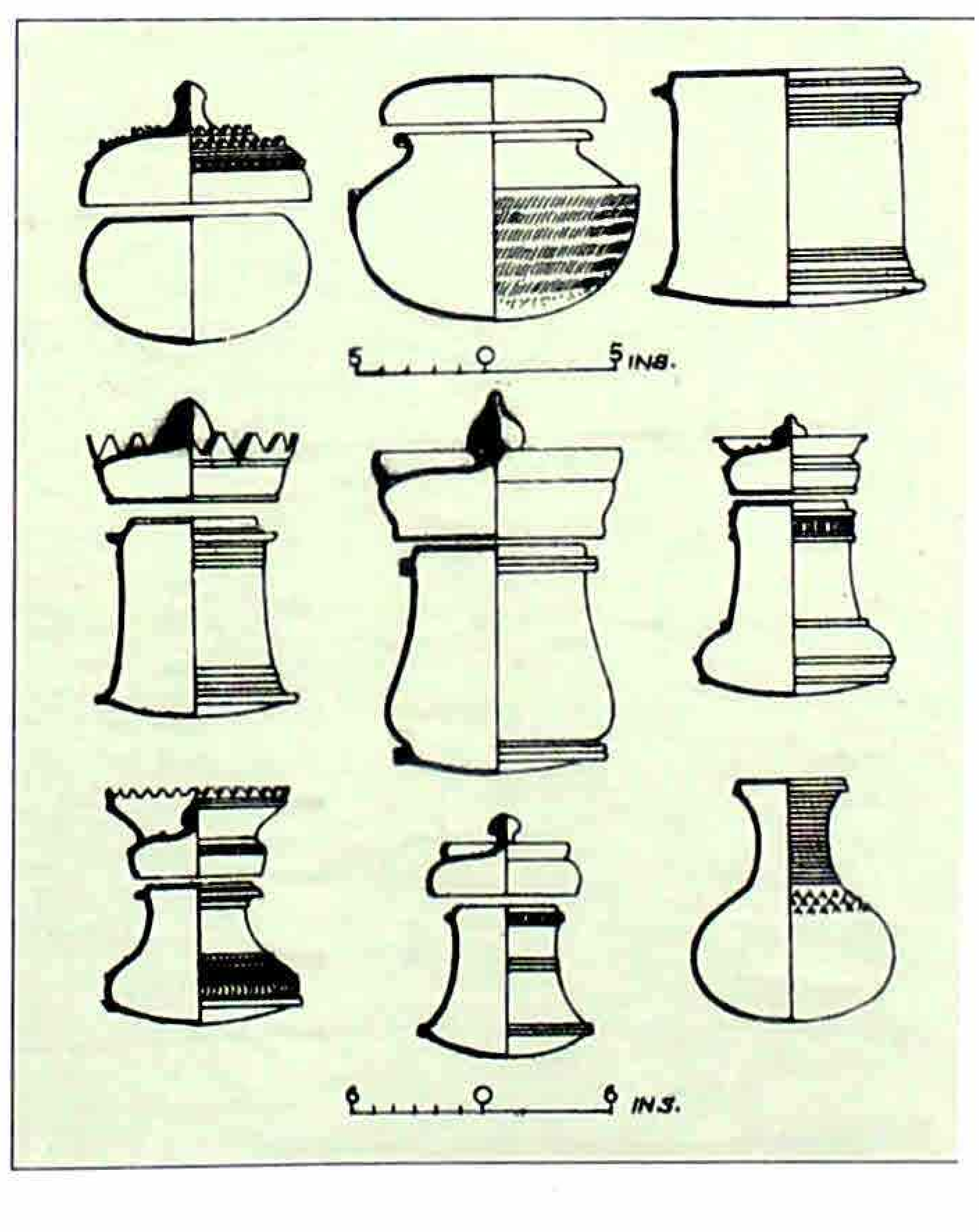
As these examples suggest, it would be a mistake to conclude that the use of urns was restricted to just the walled sites of Upper Myanmar. For instance, potsherds tentatively identified as urns have been found in Mudon, south of Mawlawmyine on the Gulf of Muttama. We noted above the beads from Thagara at Dawei, where a large number of urns have been unearthed in a cemetery southeast of the walled site. As in Upper Myanmar, the Thagara urns are close to the surface, some 8-10 cm below ground level. They range in size from 15-50 cm in diameter, and with their rounded bottom, long neck and vertical designs resemble the pots made today in the Ohlo-byin quarter of Dawei. Some are incised on the shoulder with 12 down-turned fig-leaf motifs similar to pots found at Twante (Khabin).[29] The elongated neck (*circa* 4 cm), generally has three horizontal bands. The pots are often found in groups of three within a bed of black soil, possibly ash from burning of a funerary pavilion. Unlike Pyu urns that contain many beads and silver coins, those from Thagara have only one to five small blue, deep violet or red glass beads, 1 mm thick and 2 mm in diameter. This has been the case for many years, with collections of strings of these small beads thus indicating the one-time presence of a very large number of the urns. The beads are much smaller than those found within the walled site, which may have been used for beaded girdles and elaborate waist ornaments typical of Pyu costume. Thagara, however, is not a 'Pyu' site. Or is it? As we will see below, two types of votive tablets – stupa and *Makara* types – associated with Sriksetra are also found at Mokti, another walled site at Dawei. These two kinds of votive tablets are also seen in peninsular Thailand and may have reached sites such as Sriksetra from the south. Other common elements such as stone, to which we turn below, are less portable and more easily understood as localised adaptations.

Pot sherd stamped with *Bhadapitha*, Halin. *(National Museum, Yangon)*

Urns *in situ (above)* and on display *(above left)*, Beikthano BT013 excavations near north wall. Beikthano is best known for its elaborate urns, although they are commonly called 'late' compared with the more globular urns like these conisdered 'early'.

Drawings of Beikthano tall decorated urn forms. *(After Aung Thaw, San Shwe)*





'Megalithic' stones

In discussing Neolithic sites in Upper Myanmar, we cited several instances where stones appear to have been used in a burial or ritual context. At Sriksetra, in addition to the large stone urns, there are other uses of massive stone reflecting at least in part its abundance there. Such finds are not exclusive to Sriksetra, however, for a 5:4:1 patterning of large slabs (1.5 m high and 45 cm wide) have also been recorded in front of HL22, a structure north of the palace-citadel at Halin.[30] At Sriksetra, steles were found in triads, six at Kyaukka (Settaing) Thein Kyaung, south of the Hmawza railway station. These measured 120-180 cm in height and over 150-180 cm in width. Another large stele, some 245 cm high, 187.5 cm wide, and 37.5 cm thick, was found at the Bebe Zeidi.[31] Most are carved with images of the Buddha, although some depict Bodhisattvas and a one (*circa* 1.5 m) bears a figure variously identified as a *dvarapala* and as a *garuda* or *galon*.[32] A stele (1.5 m) dated to the 4th to 5th century AD found within the Sriksetra walls in the 1970s, depicts a stout warrior-king figure.[33] The warrior figure is flanked by two guardians with standards, one with a *cakra* or wheel, and the other a *garuda*, the mount of Vishnu.

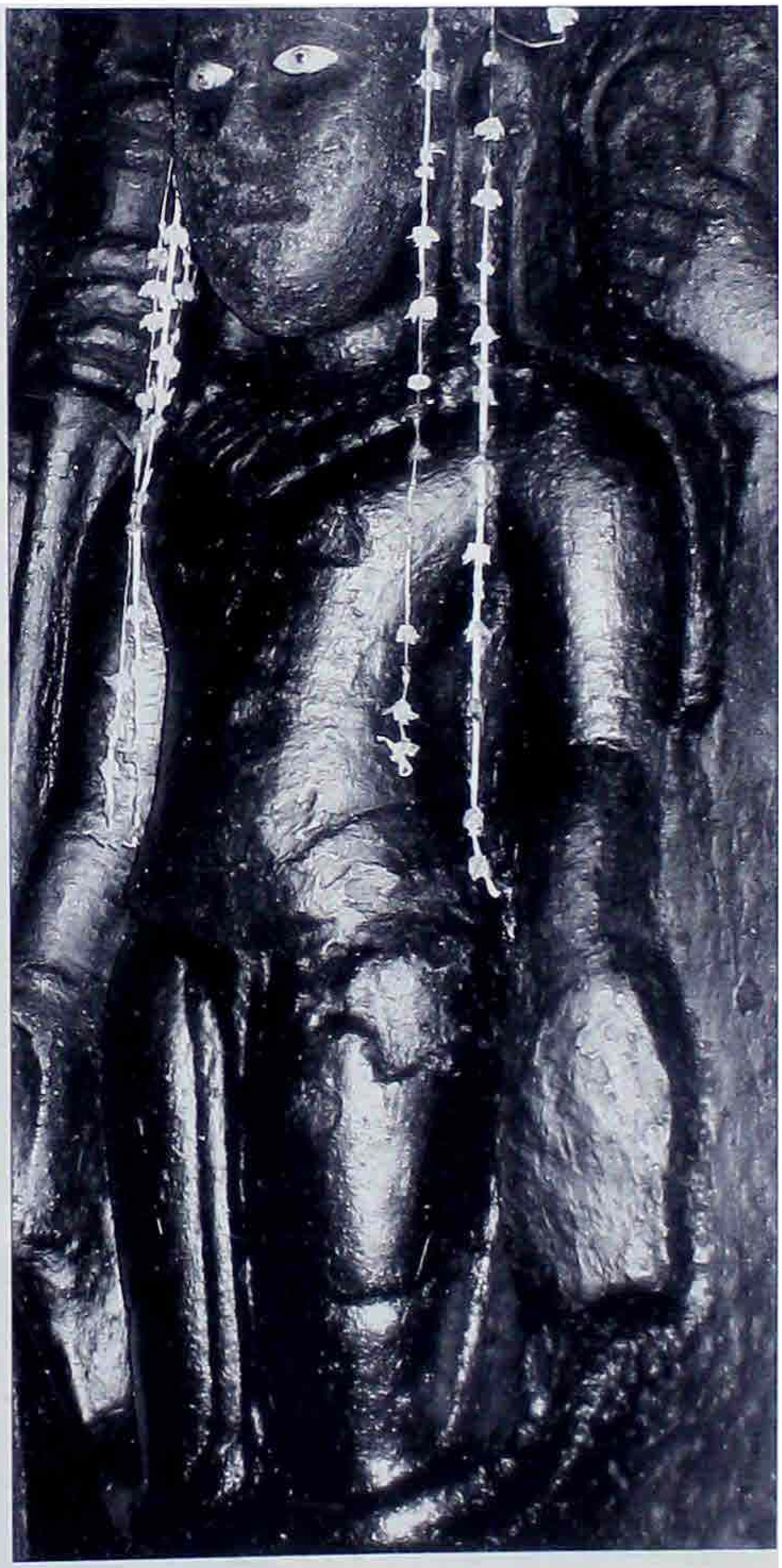
A further use of large stones at Sriksetra is seen in curved or rectangular thrones and ceremonial stone basins. One arc-shaped throne or image base measures over 60 cm in height, and nearly 300 cm in length. Four of these basins were found at the 'Beikthano Queen's cemetery' (Peikthano Mibaya Thingyaing), south of Sriksetra. The basins were made of three tall interlocking stone

Double row stones at HL22, Halin. *(Photo by Hla Tun Pru)*

rings 67.5 cm in diameter, one with a total outside height of some 195 cm. These were placed at the corners of a 600 cm bed of brick.[14] Finally, at Mokti south of Dawei, four stones were once erected at the four corners of the site. One of these is preserved today in Landaw, a village outside the northwest wall. A 1.4 m high stele depicting a four-armed figure of Vishnu holding a mace and conch is today venerated as Shiva, but the garment and attendant figure recall 10th to 11th century AD Pala images. These are scattered finds, but worth noting also for their lack of portability, unlike the silver coins typical of this period.

Left Stele (1.4m) carved with image of Vishnu, venerated today as Shiva, Landaw, near Dawei, Tanintharyi Division.

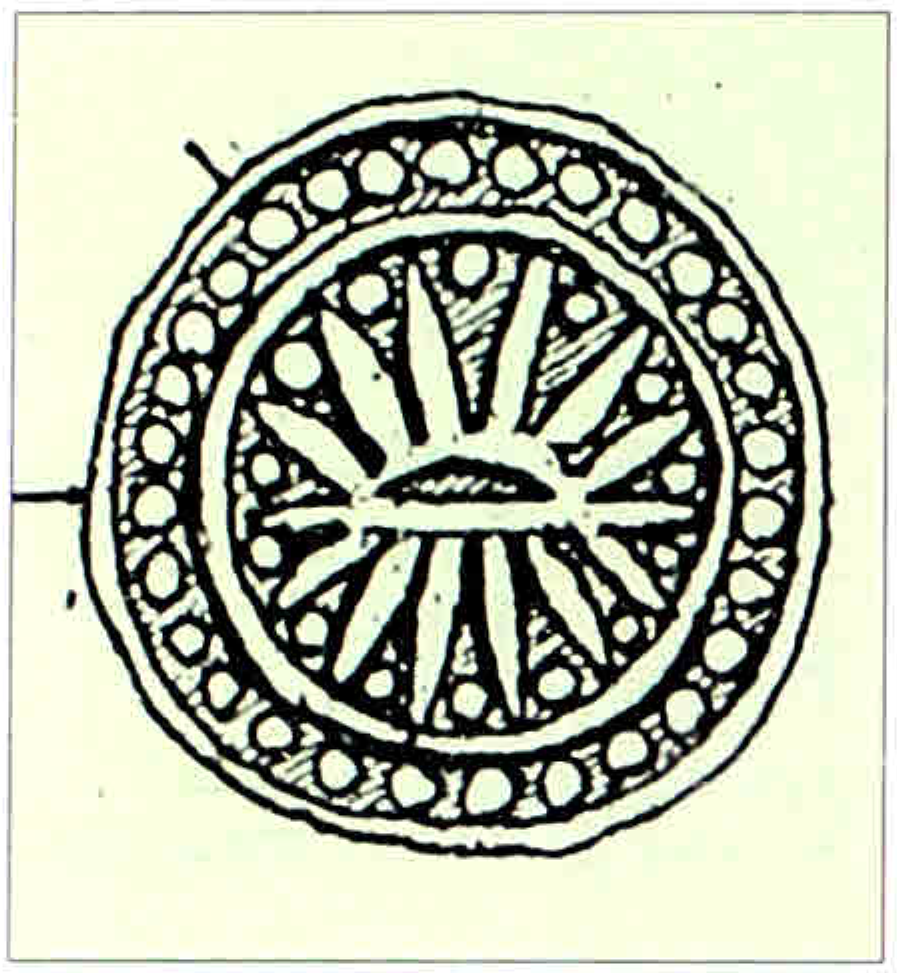
Below Detail of Vishnu stele showing garment and ornaments.

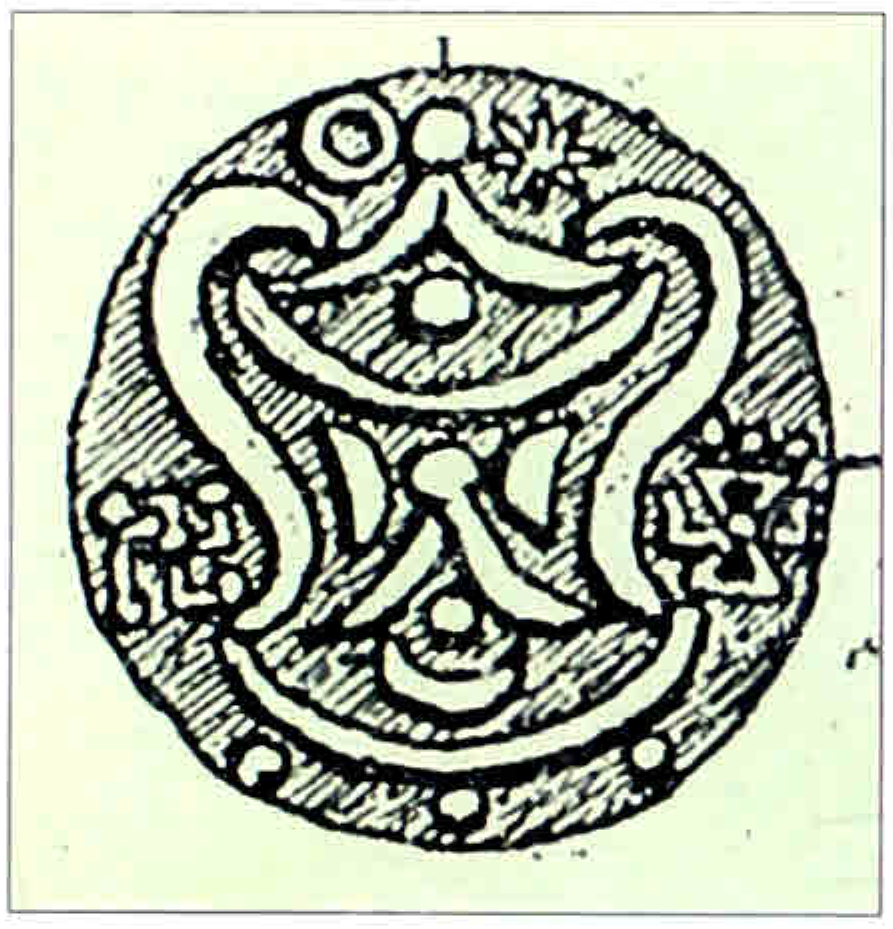


Coins

Silver and silver alloy coins have been recovered from sites in Upper and Lower Myanmar. They have also been found at some 'Samon bronze-iron' sites, with a Rising Sun motif for instance seen on a silver coin from the bead-rich site of Myo Hla (Tatkon) in Pyinmana Township.[35] The coins are circular, often with a row of raised dots separated from the centre portion by a raised circular line. As with beads, coins are widespread at 6th-13th century AD Mon Dvaravati sites in central Thailand, and were among the finds at the 1st-5th century AD Funan site of Oc-eo in Vietnam. A number of studies have been undertaken of the coins, including those of Gutman, Mitchiner, Wicks and more recently, Maho and Win Maung (Tampawaddy).[36]

The use of these coins as currency is supported by the presence of standard sizes, with a one-quarter and full-unit denominational system shared by pieces from different regions. Gutman has suggested that the coins served as bullion not currency, royal validation of metal quality and weight.[37] It is possible that the coins served various purposes, which changed over time, for ceremonial occasions such as a stupa consecration. Coins from Nakhon Pathom in Thailand, for instance, with a conch on one side and a *Srivatsa* with *Vajra* on the other, are associated with foundation deposits, while later coins from U Thong with a conch on both sides are linked to trade.[38] The use of the coins stopped around the end of the 8th century, and some 400 years elapsed before a coinage was introduced at Bagan.[39] The design of silver coins was adapted from



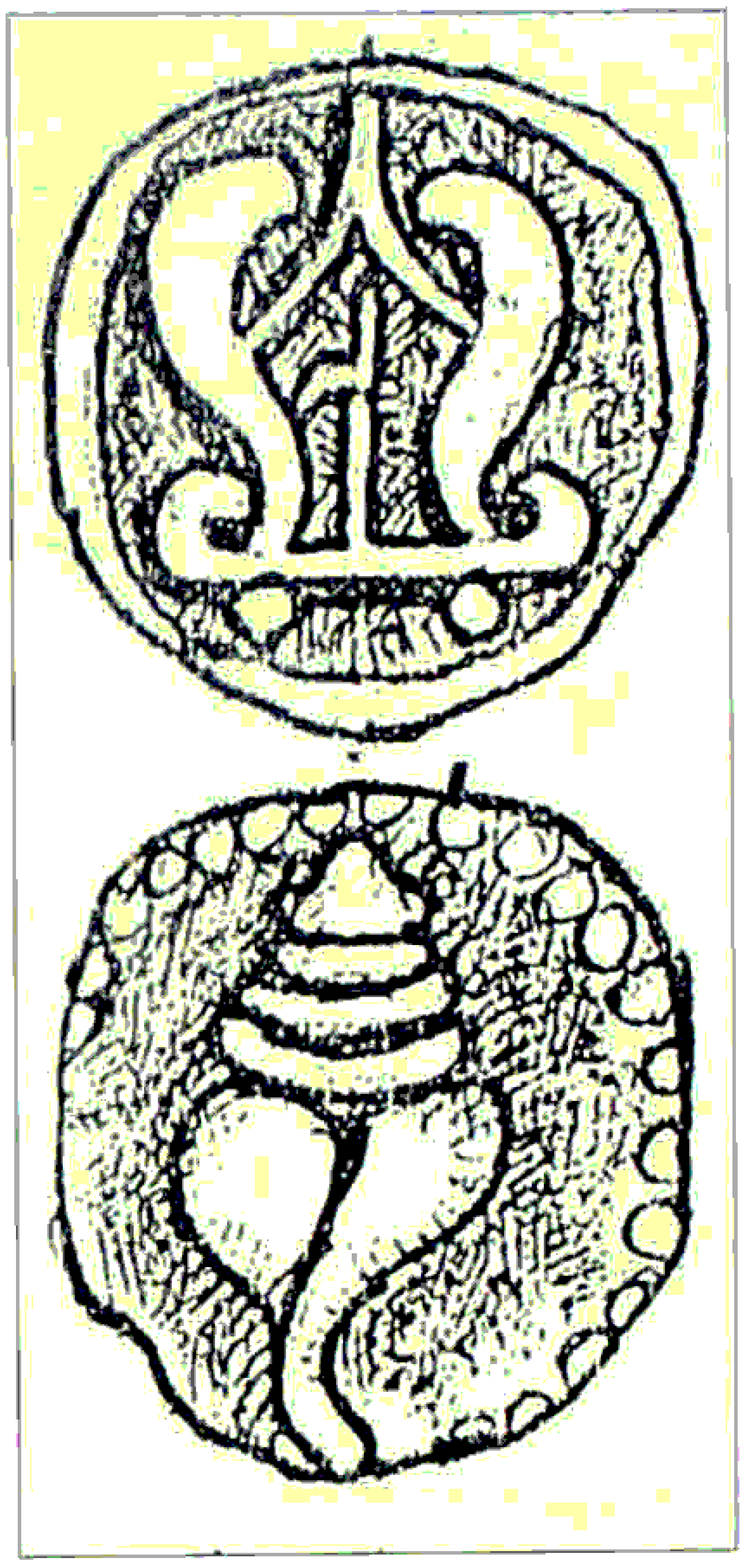


Drawing of Halin coin with *Srivatsa* and Rising Sun Motits. *(After Win Maung (Tampawaddy))*

'Silver coins with Rising Sun and *Bhadapitha* on reverse and *Srivasta* on obverse. *(Archaeology Museum, Yangon)*

South Asian pieces, notably of the Andhra region, in the early centuries AD. Many South Asian coins displayed motifs of the issuing authority on the obverse and a trader on the reverse, although the Pyu and Mon coins appear to synthesize symbols of royal authority and cosmological significance mirroring the merging of these roles in local norms of kingship.[40]

Each coin is different, but all employ a common repertoire of nature symbols. The four most often seen are the *Srivatsa*, the *Bhaddapitha*, the *Swastika*/Rising Sun and the *Sankha* or conch. Of these, the *Srivatsa* and the Rising Sun are the dominant motifs on the obverse. The *Srivatsa* symbol, the 'shrine of *Sri*' and the ancient mother goddess who ensures fertility, was a common symbol of Indian kingship.[41] The two curved sides of the *Srivatsa*, perhaps derived from the *Naga*, form a shield that encloses one of a number of motifs. There may be groups of three, six or nine raised dots, possibly of cosmological significance. A more geometric depiction using a dot, line and triangle is seen on some of the coins from Beikthano, where its presence on stamped pottery as well suggests local manufacture.[42] Mahlo has identified the more stylised motifs as 'debased' recopying.[43] In other cases, the shield surrounds a conch, or a cylindrical form or Shiva *linga*. One example from Tagaung bears a triangular 'head,' close to being a depiction of the fertility goddess and in this regard reminiscent of the bronze 'mother-goddess' figures of the Samon culture.[44] Both this example and the geometric versions are more likely to have been local adaptations rather than later usage with no meaning to the populace.

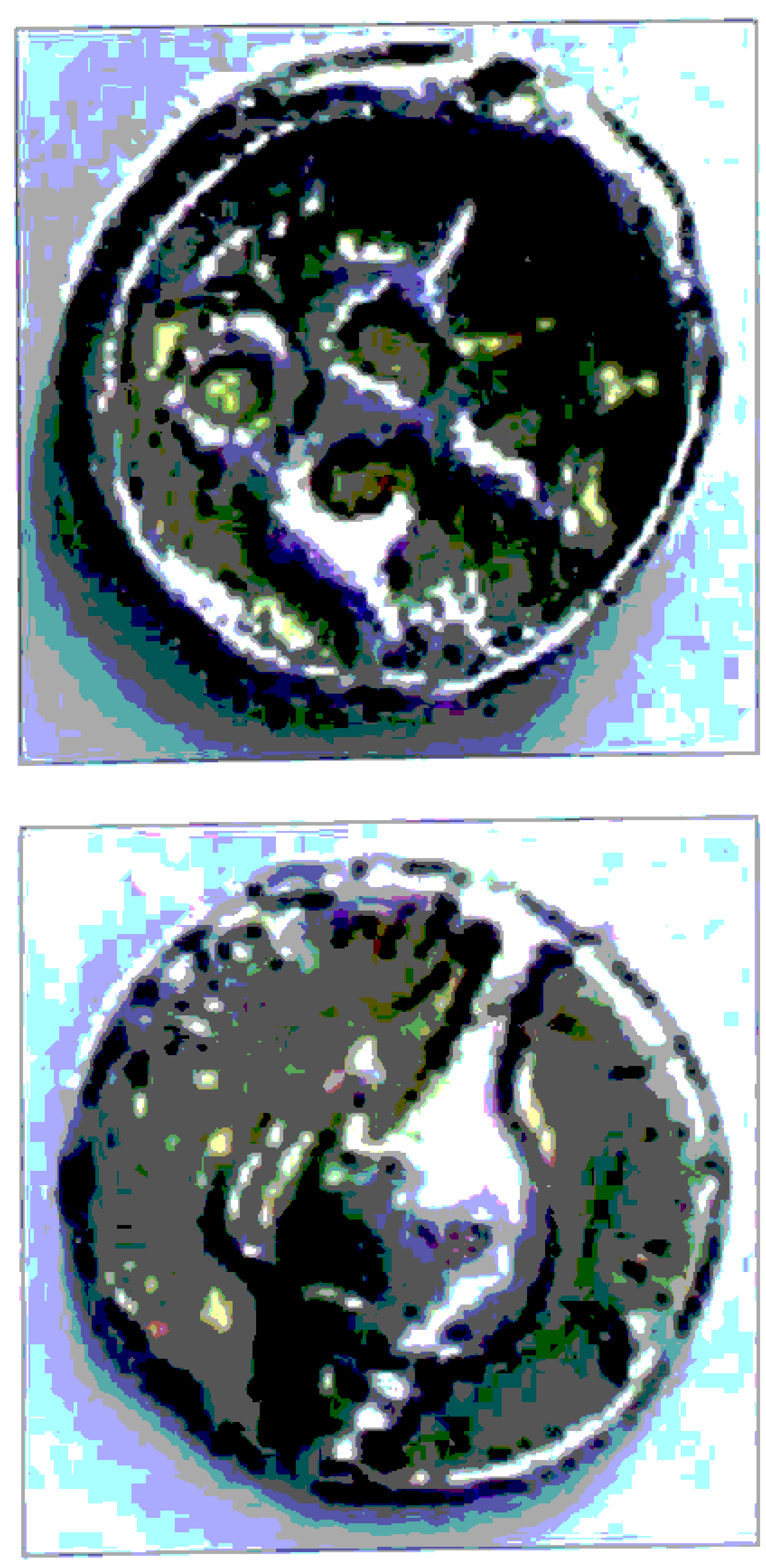


'Bago-type' *Srivasta* and conch designs. *(After Win Maung (Tampawaddy))*

The *Srivatsa* is often flanked by smaller motifs, most commonly a sun and moon, a *Swastika* and/or a *Vajra*. Below the *Srivatsa* further motifs are seen such as lines of water depicting the seven rivers and the ocean. This juxtaposition of the *Srivatsa* with celestial and water symbols is not seen in India, a possible emphasis on the role of the ruler as guarantor of the coin's value and his ability to regulate the forces of nature and ensure prosperity.[45] The *Bhaddapitha* has been viewed as a throne, a stool for offerings, a ceremonial drum, Mt. Meru or *axis mundi,* and in Middleton's view, perhaps a fire altar.[46] The use of the Rising Sun is at times is seen as dynastic descent from a solar line, common to not only the *Glass Palace Chronicle* but chronicles of Rakhine and Thailand.[47] Win Maung (Tampawaddy) has suggested likenesses between the Rising Sun and the *Dharma-cakra* or Wheel of Law, with the change paralleled by a broadening and elaborating of the *Srivatsa* on the obverse.[48] The *conch* was used as a water symbol, linked to royal lustration ceremonies and fertility. Some authors associate it with Vishnu, although its use was probably more generally linked to prosperity.[49] The pairing of motifs has been used to propose three groups of coins:

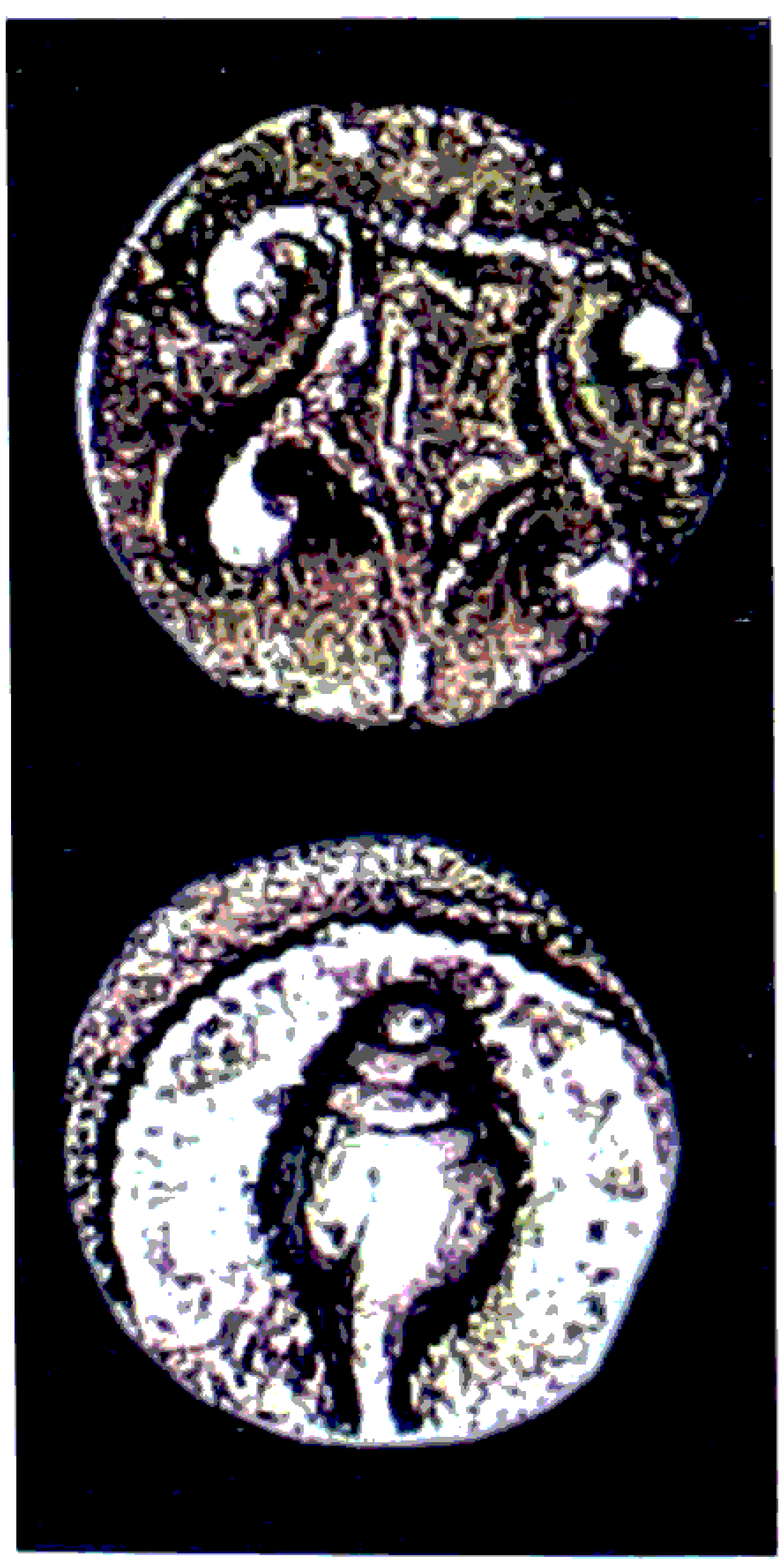
1. *Srivatsa* on the obverse and Rising Sun on the reverse.
2. *Srivatsa* on the obverse and *Bhaddapitha* on the reverse.
3. *Conch* on the obverse and *Srivatsa* and *Bhaddapitha* on the reverse.

San Shwe sees the first type, *Srivatsa* and Rising Sun, as the



Anthropomorphic *Srivasta* (diameter 1.8 cm) and conch silver coin (diameter 1.5 cm) from Thein Zayat near Kyontu, Bago Division.

Srivasta and conch coins from a monastery at Gawt, south Thaton, Mon State.



earliest (*circa* 2nd century AD) and possibly the most frequent combination, marking out a trade route from Oc-eo to Vesali. The motifs can be quite elaborated, one example from a Halin fortress site bearing a sun and moon on either side of the *Srivatsa* apex, a small *Swastika* and *Bhaddapitha* on the right and left of the shield, and a curve of three dots on the bottom border.[51] The second type, pairing *Srivatsa* and *Bhaddapitha,* is dated to the late 5th century AD or earlier, and has been found at Sriksetra, Halin, Beikthano, Maingmaw, Thegon, Waddi, and in Bangladesh.[52] At Beikthano and Sriksetra, the combination of *Srivatsa* and *Bhaddapitha* appears to be the most common although few of this type have been found outside Myanmar.[53] At Sriksetra, one coin of this type had a *linga* or possibly a pillar bordered on both sides by four dots inside the shield, flanked by a *Vajra* and conch.[54] At Halin, Myint Aung distinguishes three variations of the *Srivatsa* plus *Bhaddapitha,* all with *Bhaddapitha* on the reverse:[55]

- *Srivatsa* surrounding conch on the obverse.
- *Srivatsa* flanked by *Swastika*.
- *Srivatsa* surrounding 9 dots in 3 rows of 3 each.

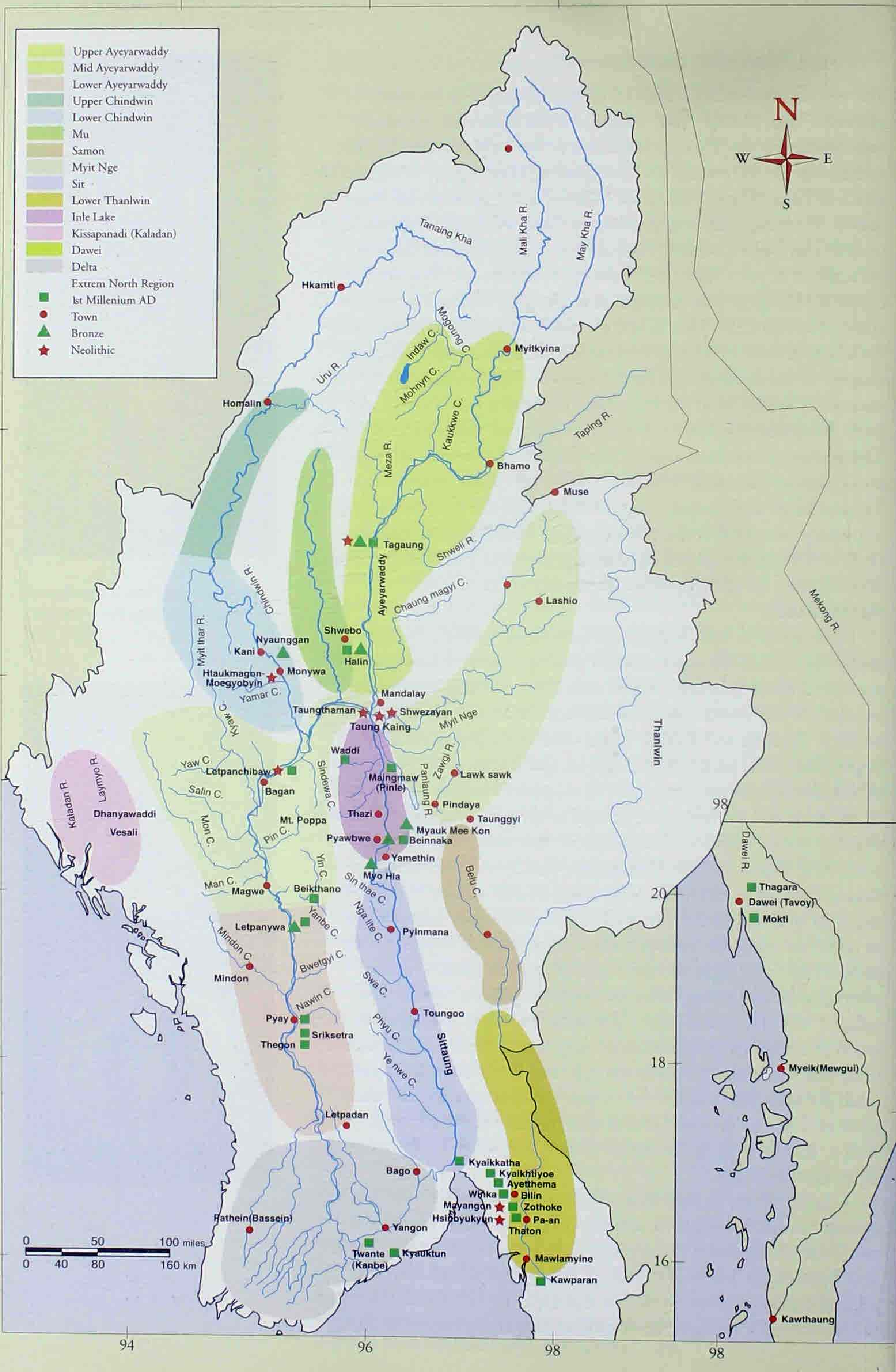
San Shwe's third type, *conch* and *Srivatsa* or *Bhaddapitha,* has not been noted at Beikthano, but is seen at Halin and Sriksetra where a conch coin was part of the Khin Ba Gon relic chamber.[56] Mitchiner identifies a different type of *conch* plus *Srivatsa* coin, seen in Rakhine and Mon areas such as Bago, where the *Srivatsa* encloses a *linga*/pillar.[57] These are sometimes dated to the 6th to 7th century AD but at others are put to the early centuries AD. This Bago-type of conch coins is not found at Pyu sites but is seen at other sites near Kyontu, at Kyaikkatha and also Dvaravati sites in Thailand. For example, on the opposite bank of the Sittaung River from Yangon at Thein Zayat, two thick and slightly curved silver coins (16 mm and 20 mm in diameter) were found bearing a conch on the obverse and a anthropomorphic version of a *Srivasta* motif on the reverse. This coin type sets out a different pattern, one suggesting active maritime and overland contact between these areas. An associated group is the small gold coins from Khlong Thom, Krabi Province, that bear a conch and *Srivatsa* with similar examples collected from Kyaikkatha in recent years.[58] One coin of this type was recorded from Malawchaung during the 2000 excavations at Kyaikkatha, along with thirteen gold beads of two types and two gold plates.[59] The coins from Rakhine are distinct, some of the earliest having only a conch inscribed on one side, others bearing the figure of a bull, above which was inscribed the Sanskrit name of a ruler. The names begin with *Deva*, thought to be the fourth king of the Candra dynasty (mid-4th to late 6th century AD) named in an inscription on the Shittaung pillar, now at Mrauk-U.[60] No definitive model has yet emerged apart from indication that the Rising Sun coins may be earlier. The reason for including their detail here is to highlight the variation in an iconography centred on natural elements for this strongly suggests the very same type of localised appropriation found in the overall form of both the Mon and Pyu walled sites.

'Pyu' and 'Mon' site distribution

The distribution of 'Pyu' sites in Upper Myanmar is far more extensive than that of 'Mon' sites in Lower Myanmar. Artefacts associated with the Pyu are abundant in the valleys of the Middle and Lower Ayeyarwaddy, the Mu, Samon, Myit Nge or Dhotawaddy and Inle Lake. These valleys are located in the present day Shan States, Mandalay, Sagaing and Magwe Divisions with Sriksetra in present day Bago Division. Despite Neolithic and early Bronze occupation of the Chindwin, there are relatively few Pyu artefacts found in this area. Documentation of the pre- and proto-historic cultures of the Chin State is in its infancy although in this instance the absence does fit with the traditions we considered in the last chapter in connection with line-designs on beads. Artefacts commonly called Mon are found in the present day Yangon and Bago Divisions, the Mon and Kayin States and Tanintharyi Division. These are concentrated around the Gulf of Muttama in lateritic areas such as Twante and Maubin, south of Yangon west of the Yangon River and Syriam, Bago Division and the Mon State. It is important to note that the administrative boundaries around the Gulf of Muttama changed significantly under in the 19th and early 20th century, dividing up what previously referred to as Hanthawaddy.[61]

Some finds in both regions are from large walled centres, but many discoveries are made outside these enclaves. A large number are casual or surface discoveries, with Pyu excavation and study focused on the walled sites of Beikthano, Sriksetra, Halin and more recently Tagaung and Bagan. These were not a homogenous Pyu population, with particularly Tagaung and Bagan possibly occupied by competing groups, giving rise to repeated mention in chronicles of ruptures and movement of groups to different regions. A number of other walled sites have been located but minimally surveyed or excavated. These include Maingmaw, Waddi and Beinnaka, the Eleven *Ledwin* or ricefields of Kyaukse in and around the Samon valley as well as a number of walled sites in the Mu valley. Many of these are called by various names, some such as Allagappa are known from chronicle accounts and others identified on aerial photographs and named after the most prominent present day village.[62] Comparatively little excavation has been conducted in the south at sites such as Kyaikkatha, Ayetthema, Winka and Thagara. Only one preliminary excavation has been carried out at Thaton, a small pit along the eastern earthwork.[63] The area of the so-called Mon or 'Laterite Culture' area is also fraction of the northern 'Pyu' region, including only Twante to Thaton and south to Ye, part way down the peninsula.

Further south, in Tanintharyi Division, a different zone exists, coastal but not laterite-rich as found in the northern part of the peninsula. Preliminary excavations have been carried out at Dawei and Tanintharyi, south of Myeik. At the walled site of Thagara, objects similar to those from Pyu and Dvaravati sites exemplifies the rationale for bringing both spheres of evidence together here.

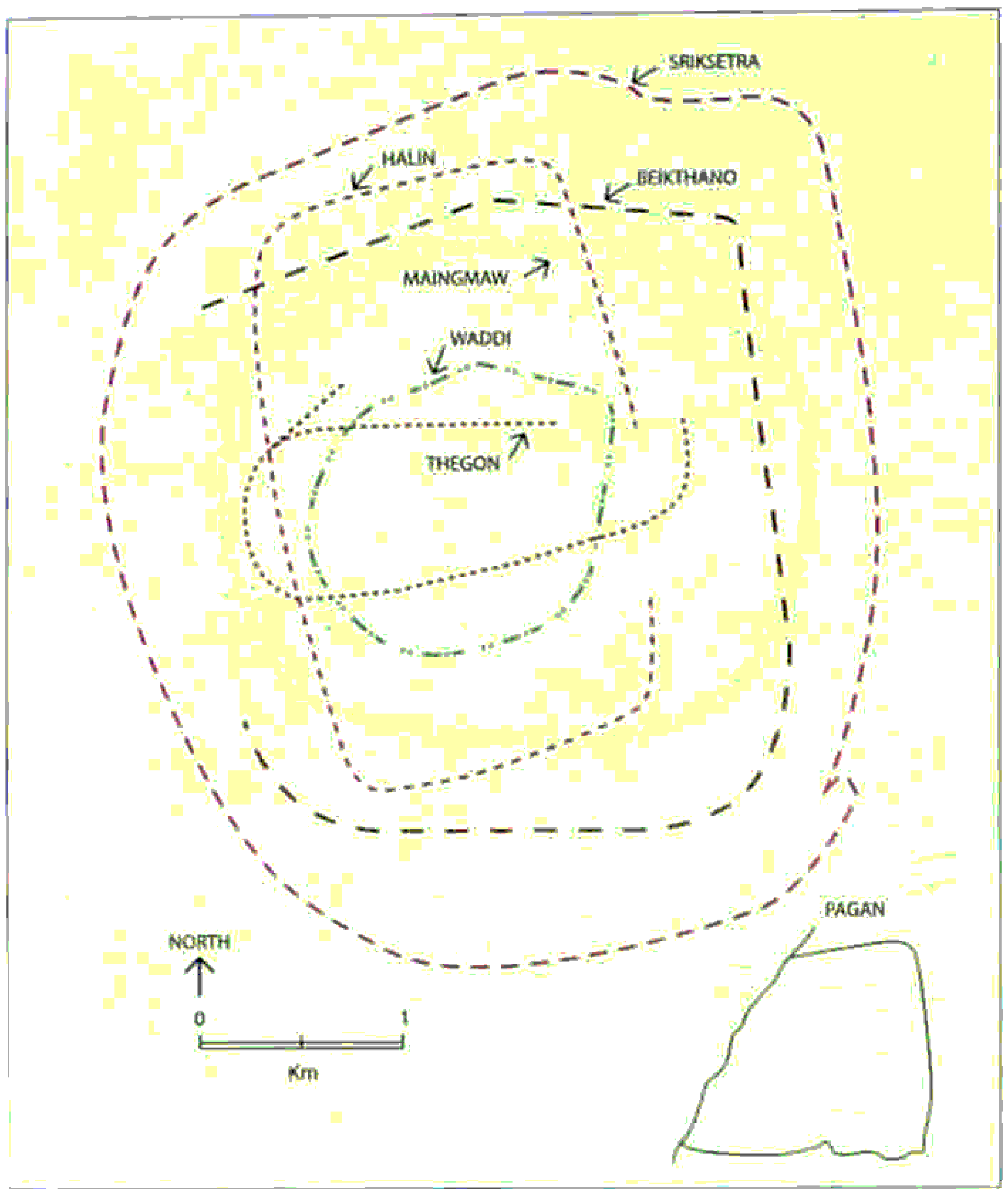


Upper Ayeyarwaddy
Mid Ayeyarwaddy
Lower Ayeyarwaddy
Upper Chindwin
Lower Chindwin
Mu
Samon
Myit Nge
Sit
Lower Thanlwin
Inle Lake
Kissapanadi (Kaladan)
Dawei
Delta
Extrem North Region
Ist Millenium AD
Town
Bronze
Neolithic
N
W
E
S
94
96
98
24
22
20
18
16
Tanaing Kha
Mali Kha R.
May Kha R.
Hkamti
Mogoung C.
Indaw C.
Mohnyn C.
Myitkyina
Uru R.
Homalin
Kaukkwe C.
Meza R.
Taping R.
Bhamo
Muse
Tagaung
Shweli R.
Ayeyarwaddy
Chindwin R.
Chaung magyi C.
Lashio
Mekong R.
Myit thar R.
Nyaunggan
Kani
Shwebo
Halin
Htaukmagon-Moegyobyin
Monywa
Yamar C.
Mandalay
Taungthaman
Shwezayan
Taung Kaing
Myit Nge
Kyaw C.
Thanlwin
Waddi
Yaw C.
Letpanchibaw
Maingmaw (Pinle)
Zawgi R.
Panlaung R.
Lawk sawk
Sindewa C.
Bagan
Salin C.
Kaladan R.
Laymyo R.
Dhanyawaddi
Vesali
Mon C.
Pindaya
Thazi
Mt. Poppa
Taunggyi
Myauk Mee Kon
Pin C.
Pyawbwe
Beinnaka
Yamethin
Belu C.
Yin C.
Myo Hla
Man C.
Magwe
Sin thae C.
Beikthano
Dawei R.
Thagara
Dawei (Tavoy)
Mokti
Letpanywa
Yanbe C.
Nga lite C.
Pyinmana
Mindon C.
Bwetgyi C.
Mindon
Swa C.
Nawin C.
Toungoo
Pyay
Phyu C.
Srikestra
Thegon
Ye nwe C.
Sittaung
Myeik (Mewgui)
Letpadan
Kyaikkatha
Kyaikhtiyoe
Bago
Ayetthema
Winka
Bilin
Mayangon
Zothoke
Pathein (Bassein)
Hsinbyukyun
Pa-an
Thaton
Yangon
0
50
100 miles
0
40
80
160 km
Twante (Kanbe)
Kyauktun
Mawlamyine
Kawparan
Kawthaung

Upper Myanmar 'Pyu'	Township	Division
Tagaung	Thabaikkyin (Thabeikkyin)	Mandalay
Halin	Wetlet	Sagaing
Waddi	Natogyi	Mandalay
Maingmaw (Pinle)	Myittha	Mandalay
Beinnaka	Pyawbwe	Mandalay
Beikthano	Taungdwingyi	Magwe
Taungdwingyi	Taungdwingyi	Magwe
Sriksetra	Pyay	Bago
Thegon	Thegon	Bago
Rakhine		
Dhannyawadi	Mrauk-U	Rakhine
Vesali	Mrauk-U	Rakhine
'Mon'		
Twante (Dala)	Twante	Yangon
Khabin	Twante	Yangon
Padagyi	Thanlyin	Yangon
Bago	Bago	Bago
Kyontu	Waw	Bago
Sittaung	Sittaung	Bago
Kyaikkatha	Kyaikto	Mon
Kaw Htin	Kyaikto	Mon
Kelasa-Winka-Ayetthema	Bilin	Mon
Zothoke	Bilin	Mon
Muthin	Bilin	Mon
Donwun	Theinsaik	Mon
Gadaik	Thaton	Mon
Mayangon-Hsinbyukyun	Thaton	Mon
Thaton	Thaton	Mon
Pa-an	Pa-an	Kayin
Sanpannagon (Hmawbi)	Hmawbi	Kayin
Tanintharyi		
Thagara	Dawei	Tanintharyi
Mokti	Dawei	Tanintharyi

First millennium AD walled sites have been identified in Upper and Lower Myanmar and in Rakhine. Related artefacts, however, come from many areas in these regions not within walled enclosures. *(After Win Maung (Tampawaddy) and Cho Zaw)*

As many of the ancient sites are deserted with only small associated villages, they are commonly referenced to the Township and Division within which they are located.



The walled site of Bagan is small in comparison with the major 'Pyu' sites. *(After Aung Myint)*

Thagara is not Pyu and it is not Mon or Dvaravati, but has affinities to both. The distance from Tagaung to Thagara is some 1,300 kilometres but at sites throughout this north to south expanse, large bricks sometimes with finger-markings across the lateral face, beads, and terracotta burial urns are typical. Tagaung and Thagara – and all the sites in between – make up the walled site context. It is thus vital to consider the evidence within a framework that allows us to use the differences between them to construct a profile of first millennium AD Myanmar. We will return to the framework after describing some of the artefact groups and aspects of the principal sites that have been investigated.

Rakhine, Mon and Pyu

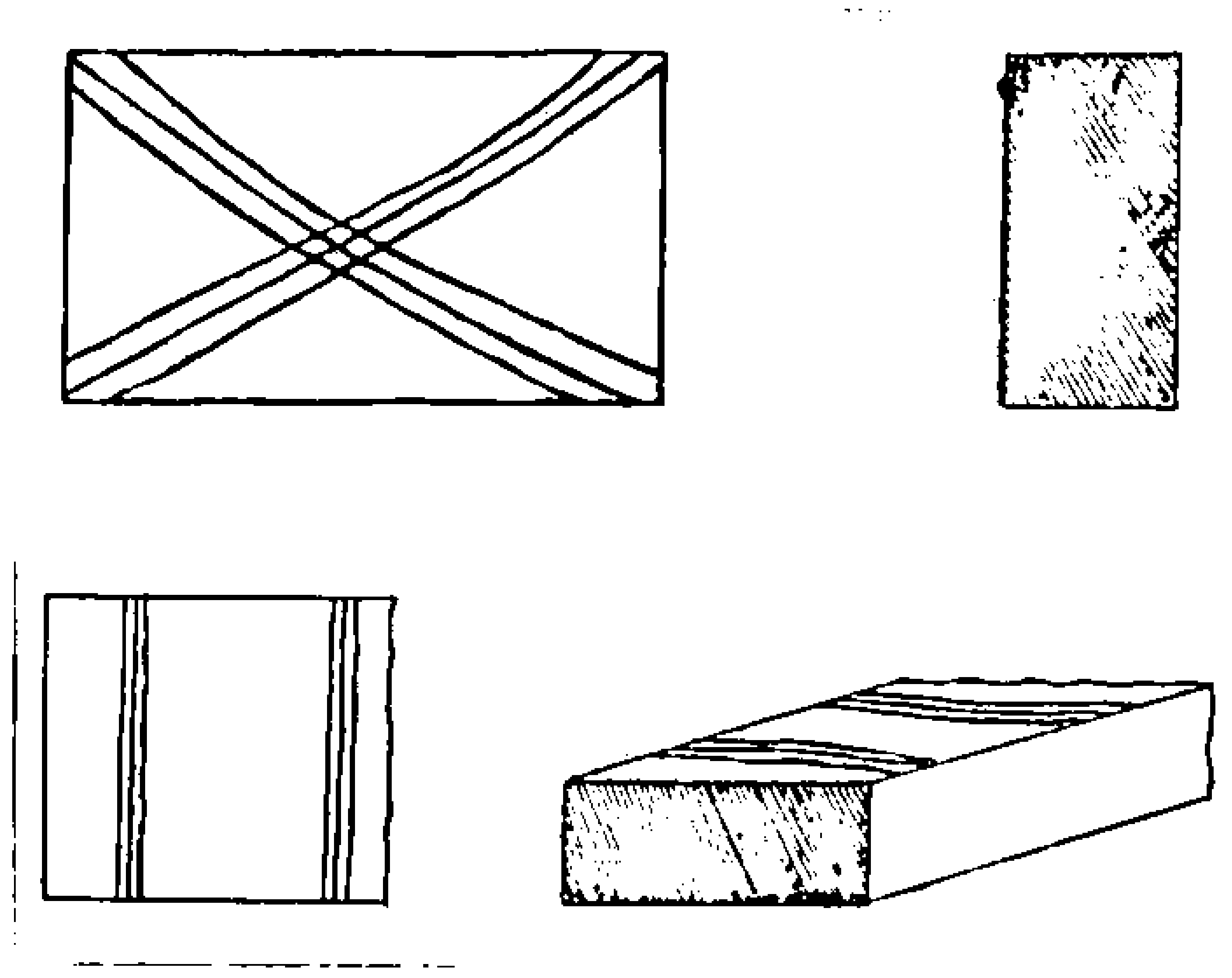
The early Rakhine history stands somewhat aside from record of interaction between the central plain and the southern coast. We will look only briefly therefore at the two earliest known walled sites in Rakhine, Dhanyawadi and Vesali. The founding of Vesali followed the demise of Dhanyawadi and is dated to *circa* the 6th century AD. These have similar traits to both Pyu and Mon walled sites such as enclosure of sites with walls and the use of silver coins. The walled area of Dhanyawadi (4.42 square kilometres) is similar to that of Halin while Vesali (7.02 square kilometres) is larger.

And like the Pyu walled sites, Dhanyawadi and Vesali both have a central citadel-palace enclosure.[64] The location of the Mahamuni shrine on the northeast wall of the palace-citadel at Dhanyawadi has been linked to propitiation of the sun and ancestral veneration. This is also a pattern that may be seen at some of the Pyu walled sites, where the most important *stupa* bordering Beikthano, Halin and Sriksetra are all on the periphery of the walled boundary. However, the closest Indian style and iconography of the Rakhine artefacts is that of Mathura whereas Pyu and Mon links are more akin to the styles of Amaravati and Gupta India. In later periods, there is interaction between Rakhine, Pyu and Mon rulers but in the context of that with Bengal to a degree that demands a wider scope than that attempted here where our focus is the interaction between Upper Myanmar and Lower Myanmar cultures.

Upper Myanmar dating

Dating for Upper Myanmar sites is sporadic and often with little information on the context from which the dated material was obtained. This has been used to describe the Upper Myanmar sites as the earliest urban developments in Southeast Asia – large irrigated cities which were capitals of early states. In fact, all of Upper Myanmar, as we have seen in the previous chapter, was well settled in the first millennium BC with good evidence particularly in the Samon valley for a large number of independent chiefdoms.

In the transition between the 'mother-goddess' culture of the Samon and the walled sites of the Pyu, there is good evidence of disruption, economic competition, religious change, political fission, and possibly new population groups. The *kye doke* or bronze packets and other aspects of the Samon Bronze-iron culture show wealth coming from rice agriculture. Small scale water control was an essential part of this expansion, one that continued in the first millennium AD. However, with the increased Indian contact, bricks in dimensions (50 x 26.5 x 8.75 cm) very like those of Asoka's were used to augment earlier systems of site enclosure, water control and construction of buildings.[65]



Drawing of finger-marked bricks excavated at SGR1, Thagara, Tanintharyi Division.
(After excavation sketches)

The major walled sites were not static; their walls were built repeatedly, expanding and contracting as needed. Thus the walls of Beikthano, Maingmaw, Halin and Sriksetra seen on the ground today record only the last phase of wall building, by no means telling us when the sites were first inhabited or when their status declined. It also tells us very little to explain the widespread distribution of artifacts associated with Pyu sites over much of Upper Myanmar. There was much more going on, particularly in the first half of the first millennium, than the massive, but few walls that stand today.

Lower Myanmar dating and gaps

If the Upper Myanmar dating is sporadic, that of the south is even less. The colourful chronicle accounts such as the 300 BC arrival of Buddhism have generated legitimate scepticism in light of the scant archaeological record. We have several times re-iterated some of the very good reasons for this – climate, poor access due to infra-structure and insurgency and relatively little excavation. The first excavation of Pyu sites was over a hundred years ago but Lower Myanmar sites have begun to be investigated only within the last 30 years. While some preliminary digging has been carried out in the last five years, the artefacts from these have received little analysis or comparative study.

The excavations have all been short which has affected the saving of material. For instance, during 2000 AD work at Kyaikkatha, a large walled site at the mouth of the Sittaung, a large rectangular brick structure (KKT7) was unearthed. On the lower wall, a number of terracotta plaques with animal figures dating to the mid-first millennium AD, were found but not able to be saved or recorded. It also may be that the cultural layers at southern sites are farther below ground level, in contrast to Upper Myanmar sites where finds are often close to the surface. In addition, many questions remain about how long sites were occupied and the overall deposition of cultural material. During the same excavations at Kyaikkatha, six layers were distinguished. The top two were present habitation brown humus (Layer 1, 5 cm thick) and brown soil with no artefacts (Layer 2, 105 cm). Thus the first layer of cultural debris (50 cm) was Layer 3, more than a metre below the ground. This was followed by a further thin layer of habitation debris in yellow soil (Layer 4, 15 cm), and then Layer 5 (30 cm), being black soil without artefacts. At some two metres below the surface, the basal Layer 6 was identified.[66]

This data, from a brief excavation, typifies the disparity between evidence from Upper and Lower Myanmar. A case cannot be made on what data is not present, but the reasons for this may not be that it is not really there. As we noted earlier in the Samon valley finds, excavations have increased with construction of roads and irrigation structures over the last decade or two, but similar developments are only just beginning in the south. The scant remains may also reflect the type of commodities that were traded. For instance, literary records suggest a range of valuable commodities was exported from entrepôts such as Tun Sun and P'an-p'an on the peninsula in the early centuries AD. These included a range of timbers, ivory and horn, tin, and spices. However, none of these survive to provide archaeological evidence.[67] For all of the reasons above, there are only two absolute dates for Lower Myanmar and they are very problematic. The dates were obtained from two potsherds recovered from a wall (AYT1) on the north side of Ayetthema, one of two sites at the foot of Kelasa, Bilin Township, that yielded thermo-luminescence dates of about 476 and 313 years before present, corresponding to 1499 AD and 1662 AD.

An earlier chronology for the south, however, is supported by the stone tools, rings and pottery described earlier in the context of Neolithic or metal-using sites near Thaton. In the first millennium AD, it is seen in images of the Buddha, votive tablets, terracotta reliefs and architectural elements all dating to *circa* the 4th to the 7th century AD. There are a few portable objects dated to the 3rd century and a larger number with somewhat better provenance from the 7th to 8th century. As we will see, the Upper Myanmar chronology is similar for from the early centuries AD, there are a few portable objects and two radiocarbon dates, if one accepts the bottom end of the range, and if one rules out mature wood being used to erect wood pillars. As with Lower Myanmar, the majority of the Upper Myanmar artefacts and inscriptions conservatively fall within the 6th to 8th century AD. The few somewhat earlier objects, such as the Sriksetra gold plates, with the different interpretations arising on palaeographic dating and the archaic tendency of the scripts used, remain open to debate, despite rigorous study.

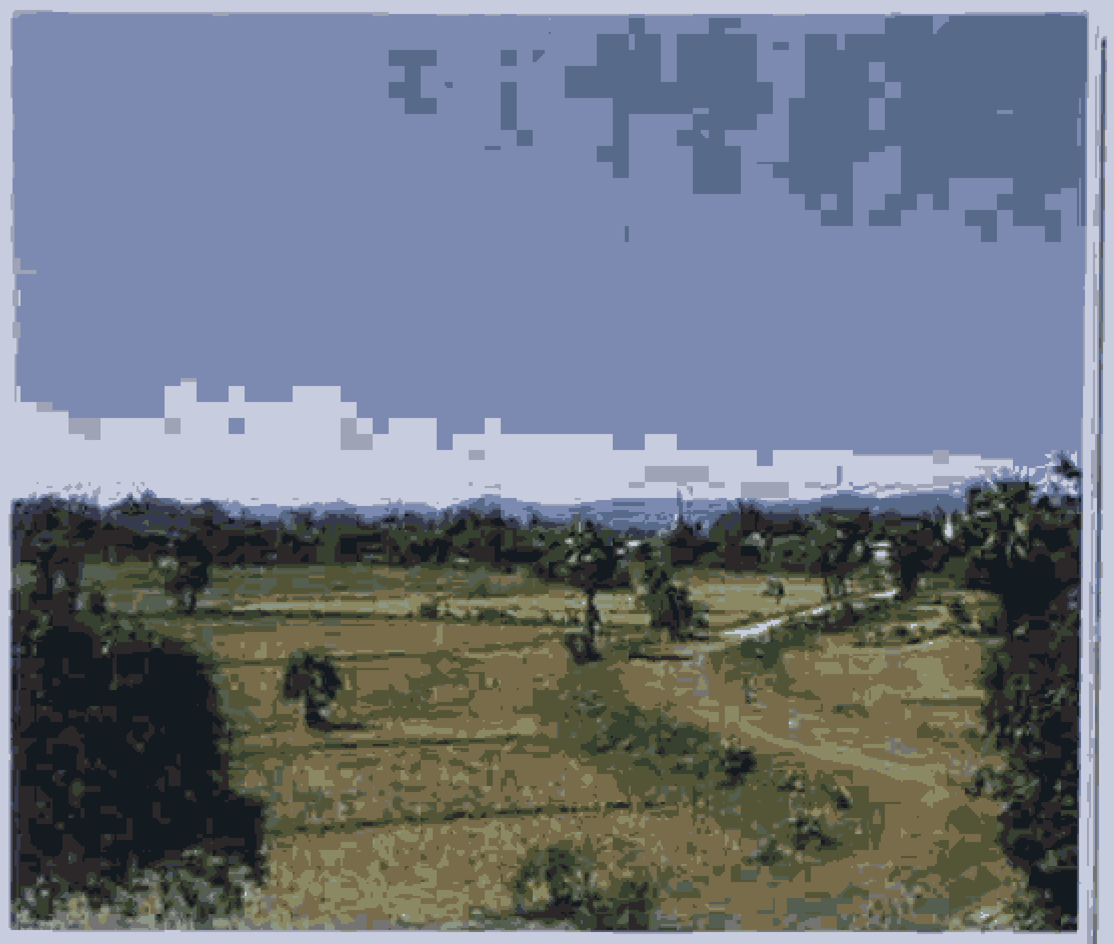
Ecological issues in the south

As explained earlier, Lower Myanmar walled sites are referred to here as 'Mon', but this ethnic label is used reluctantly. For one thing, the sites are also found in other divisions. Many of them can be called 'Laterite sites' but not all. Neither would it, however, be comfortable to call Kyaikkatha 'Pyu,' for even though the north and south share similar artefacts – and long term interchange – the contrasting ecologies demanded different adaptation strategies. A few points of the earlier general geography are in this context, worth re-iterating: changes to the shoreline and rivers, rainfall and seawater, and laterite.

The most recent change in topography is the 20th century forging of a new channel at the mouth of the Thanlwin. The mouth of this river forms a long funnel at the apex of the Gulf of Muttama and is the only egress at this key point. On the west bank of the gulf where Bago and Twante are located, the new Sittaung channel has resulted in considerable deposition of silt but on the Kyaikto side, the coast has eroded.[69] As a result, Kyaikkatha is now on the river bank, but this was probably not the case in the early first millennium AD. The lower part of the peninsula from Ye to Myeik has probably changed relatively little, but a detailed study of the Gulf of Muttama and northern Andaman Sea is not yet possible to factor into our picture of the ancient coastline. The first inclination is to presume a situation parallel to that found around the Gulf of Bangkok, where analysis of remote sensing imagery by Tiva Supajanya has established that the Dvaravati sites form a horseshoe-shaped arc, one on its north close to Ayutthaya.[70]

However, especially around the major walled site of Kyaikkatha and its probable northern and southern forts at Sittaung and Kaw Htin, there are various patterns of erosion and deposition altering the coast, in some case very recent. The shoreline change near the apex of the gulf may also have impacted on the other two sites the southeast of Kyaikkatha, Winka-Ayetthema around Mt. Kelasa and Thaton. The shoreline change does not mean Kyaikkatha, Kelasa and Thaton were not accessible by water, for the first two in particular probably were. Remains of bolts and cables thought to have been left by ships stranded at Ayetthema on the northwest flank of Kelasa are frequently cited to suggest that the landscape today may not be radically different from that of two thousand years ago.[71] One can easily see the ocean from the top of Kelasa, but the appropriately named 'White Sand' stream winding past its southern flank has deposited great quantities of silt.[72] Much farther down the peninsula at Dawei, tin mining has caused extensive deposition and has dried up the tributary of the Dawei River flanking the south side of the walled site of Thagara. In short there has been alteration to both the shoreline and inland watercourses during the 20th century that greatly affect our interpretation of the ancient topography.

Two other water-related factors are precipitation and salt water, both of which affected the location and form of the southern walled sites. The inundation from rains was considerable. In Thaton, out of the 500 cm of rainfall per year, about 400 cm falls during June to August with little or no rain from November to April.[73] Flooding from the sea also posed a constant threat and bunds were built to carry off excess. Salt was probably harvested in the past as it is



Landscape east of Mokti, south of Dawei, Lower Myanmar.

Shrine dedicated to Shin Upagupta at Mokti. Such images are frequent in Lower Myanmar where rainfall is high, as the monk is associated with control of the weather.

today, but despite good evidence of its importance in Iron Age expansion in Northeast Thailand, we lack comparable documentation in Lower Myanmar.[74] However, it was not just the salt water that threatened crops, for during August and September small marine crabs infest the paddy fields. A number of strains of rice were planted, including some varieties able to resist the effects of salt. Dry season water-harvesting included damming small hill streams, channeling tidal creeks, and a baling system with bamboo tripod and baler (*khanwe*) attributed to the Karen.[75]

A further crucial difference between Upper Myanmar and the northern part of Lower Myanmar is lateritic soils. In what is today the southern part of Yangon and Bago Divisions and throughout the Mon State, are found extensive tracts of laterite, an iron-rich precipitate that attains depths of several centimeters to a metre. These may be visible at ground level or be located below the surface.[76] In the Thaton area, for instance, the red-yellow laterite soils, poor in fertility, are found as clay layer some 10 cm below the surface. Soft when dug, laterite hardens upon exposure to form an extremely durable building material. As noted, earlier in connection with brick use, the use of lateritic clays for the making of blocks and mortar in continues in Bangladesh today, where its availability and durability are well known.[77] In Lower Myanmar, Nai Pan Hla has suggested that walls may first have been built with laterite blocks and only later augmented by clay bricks.[78]

Be that as it may, the form of a number of walled site moats and earthworks in these laterite areas is derived from the contours of the land. At some, such as Kyaikkatha, an inner set of multiple moats and earthworks is paired with an outer set that extends the territory of the site. As in Upper Myanmar, these territorial-type extensions enclose variable lands so while their shape is related to the terrain, unlike the inner moats, the shape of extensions are not controlled by the topography. Laterite (*gawun*) was also used extensively in the northern part of Lower Myanmar for stupa foundations and for reliefs at entryways. Remains of laterite wall and stupa constructions often contain sizeable pieces, seen for instance at in the laterite Kumara/Rajamuni Zeidi in Winka and nearby in blocks some 60 cm in length at Zothoke stupa and its Hsindat Myindat wall remnant, now 100 m long and *circa* 2.25 m in height. The name of the Zothoke wall, meaning 'elephant and horses', may recall carvings on other wall sectors of the site, for the remaining sector has been carved with large figures of elephants and lions.[79] The carvings are akin to those found at Dong Si Mahosot and Dong Lakhon, Prachinburi, on the eastern side of the Gulf of Thailand. There,

Detail of elephants and lions on Hsindat Myindat wall remnant, Zothoke, Mon State.

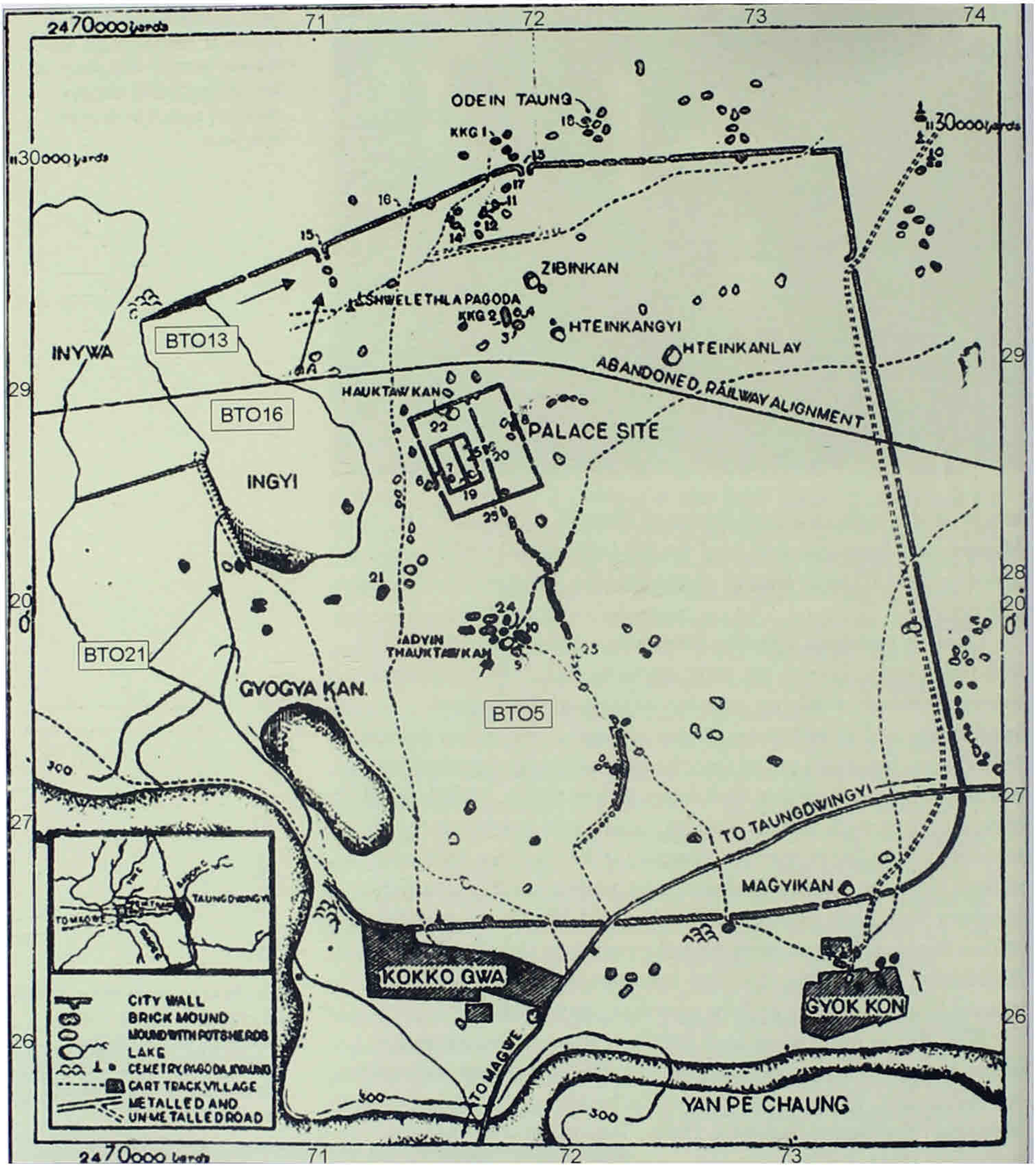
Large laterite blocks on lower portion of Zothoke stupa, with a restored pavilion with image of Shin Upagupta and Monday planetary post, Bilin Township, Mon State.

reliefs on the walls of a tank depicting lions, elephants and *Makara* have been dated to *circa* the 6th century AD while a pair of footprints (3.5 m in length) of the Buddha are placed in the 8th century AD.[80]

Lateritic materials may also have been a source of early local iron production. During the early centuries AD, iron implements were increasingly available, seen for instance in the form of implements and architectural fittings at most of the Upper Myanmar walled sites. Stargardt noted that the iron tools and weapons typical of Halin were not found at Beikthano, where nearly 250 kilograms of iron objects such as nails, sockets, bosses and strips were recovered from the monastery structure (KKG2) along with iron sockets from the southern pillared memorial hall (KKG9) and the northern Beikthano gateways (KKG13 and KKG15).[81] Investigation of iron furnaces has not been part of excavation of Sriksetra, Beikthano or Halin, but there has been documentation of kilns around Bagan, Tagaung and the nine fort cities of Halin.[82]

With this in mind let us look briefly at some of the many sites where finger-marked bricks support investigation of first millennium AD habitation. We have begun with the better known sites of Upper Myanmar: Beikthano, Sriksetra, Halin, Tagaung and Maingmaw. Following these descriptions, we compare some of the sculpture, votive tablets and images of the Buddha where dating highlights interchange between Upper and Lower Myanmar sites. We then turn to the south, looking briefly at sites in lateritic zones: Bago, Kyaikkatha, Sittaung, Kaw Htin, Winka, Ayetthema at Kelasa, Zothoke and Thaton. The last are Thagara and Mokti, two sites around Dawei that are not Pyu or Mon, not in a laterite zone but are walled with finger-marked bricks and have unique styles of burial urns, beads and other markers of first millennium AD culture.

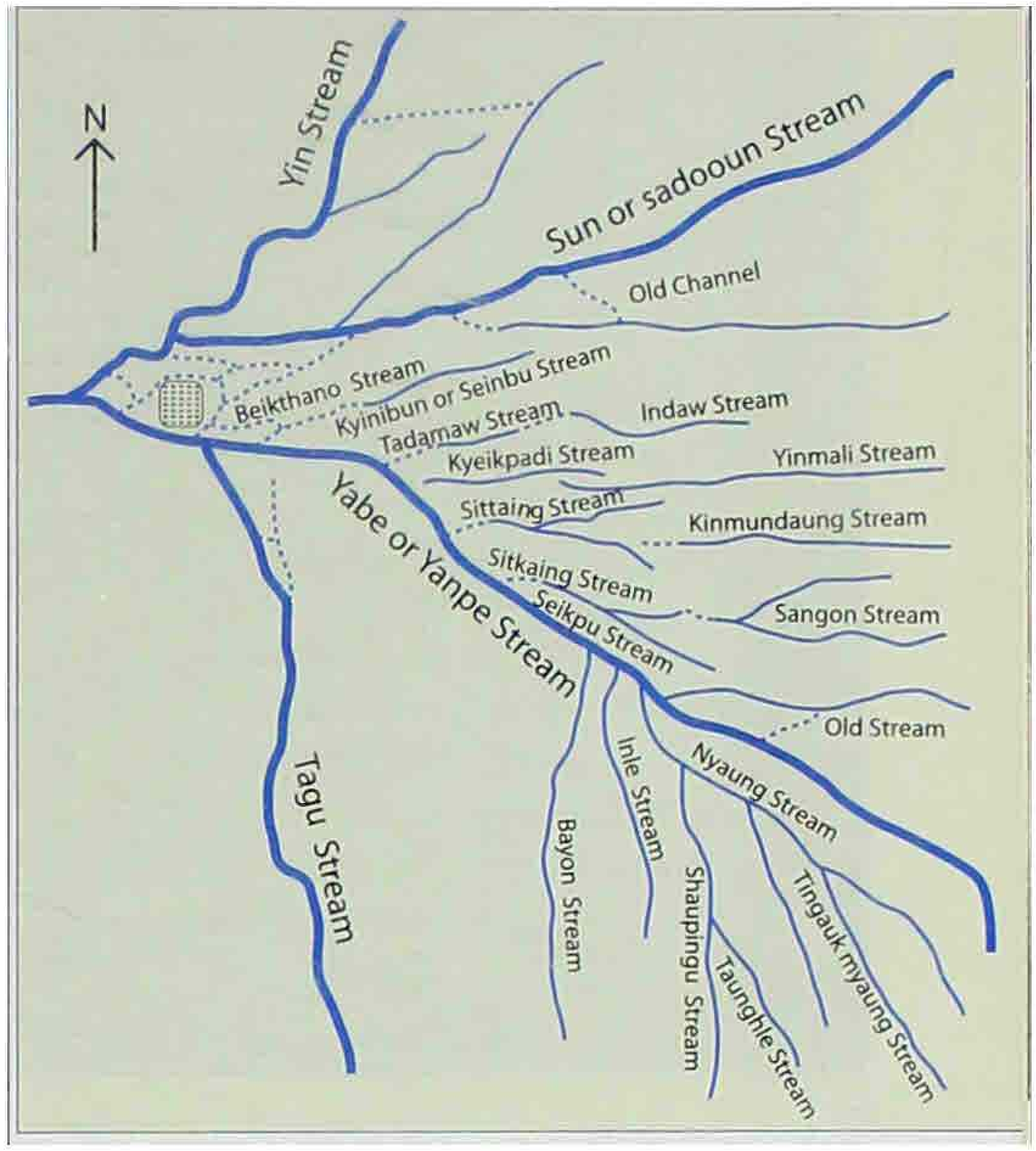
Lateritic areas north of Kyaikkatha are complemented by a large water body on the interior southeast of the site, Mon State. This was probably originally a natural seasonal lake.



The excavated sites at Beikthano are inside and outside the walls. The first series of excavations are called KKG after Kokkogwa village to the south, while more recent ones are labelled BTO after the site name. *(After Aung Thaw, San Shwe)*

Beikthano *In-gyi*, Taungdwingyi Township, Magwe Divison.

Beikthano



The walled site of Beikthano is cradled between flanking streams and tributaries, all draining west into the Ayeyarwaddy.
(After Aung Thaw, San Shwe)

Beikthano, or Peikthano-myo (Vishnu city), is commonly referred to as 'Vishnu city' or 'City of Panthwa'. The remains of Beikthano are located in the Yin valley, just north of the village of Kokkogwa, Taungdwingyi Township, Magwe Division. To the east of Beikthano is the Bago Yoma range and foothills, where the Yin and Yanpe Rivers rise. The site is well situated, with access to the rice-producing area of Minbu to the west and the Kyaukse plains to the northeast.[83] The city wall may once have included the swampy area and lake on the east, as well as the Shweyaungdaw pagoda, some 360 m beyond the present wall. The Yin and Yanpe flow west across the sloping land and emptying into the Ayeyarwaddy at Magwe. On the west of Beikthano, the In-gyi and *Gyogyakan* lakes have merged on the lower land bordering the site. The flooded area expands during the rainy season and with its terrain sandwiched between the villages of Inwagyi on the north and Kokkogwa on the south, provides a broad cultivation area making up the western side of the site. A similar use of water and lower-lying land is seen at Taungdwingyi, 16 km to the southeast, where a natural lake provided defence, a water reservoir and a means of communication.[84]

North of In-gyi lake is the village of In-ywa-gyi. The wall on the north has two segments, the one on the west angled southward towards this village. Mounds and excavated structures are clustered along this wall, probable reminders of the different production centres located along its flank. Water also protects Beikthano on the

Beikthano western sector with Shwelethla Pagoda looking towards *In-gyi*.

south, where outside the wall, the Yanpe River flows towards the Ayeyarwaddy. The Yanpe is mentioned in chronicles, when King Duttabaung of Sriksetra overcame the magic power of the Beikthano queen to be able to make the river rise and drown all attacking troops. It may be that the building of walls around Beikthano began in the south to guard against the flooding and that the segmented wall on the north was built or rebuilt during a later phase. This is perhaps supported by the northern wall, which like a partition wall running across the south of the site, is built on a dike of yellow clay, unlike the other walls that were constructed directly on the surface of the land.

Archaeological explorations at Beikthano were first described by Taw Sein Ko from 1905 and Beylié in 1907.[85] From 1959-63, features excavated by Aung Thaw were recorded in reports as KKG after Kokkogwa village to the southwest. Additional excavations 1996-99, and other features more recently dug are called BTO.[86] While polished stone tools from Beikthano are part of the National Museum's holdings some say the tools are mislabelled. To date, little evidence of earlier phases of occupation has come to light within the walls although this may well change with continued exploration. At present, Beikthano remains notable for a scarcity of bronze artefacts combined with a wealth of brick structures and pottery. This includes a number of stupa-like rectangular buildings with circular cores, with a many of the terracotta burial

In-gyi on west side Beikthano. Recent survey by the Department of Archaeology suggests that a wall may have been built on this side of the site at one point. Walls could have been erected quickly, in response to ecological need, in this case the fluctuations of the seasonal lake (*in-gyi*).

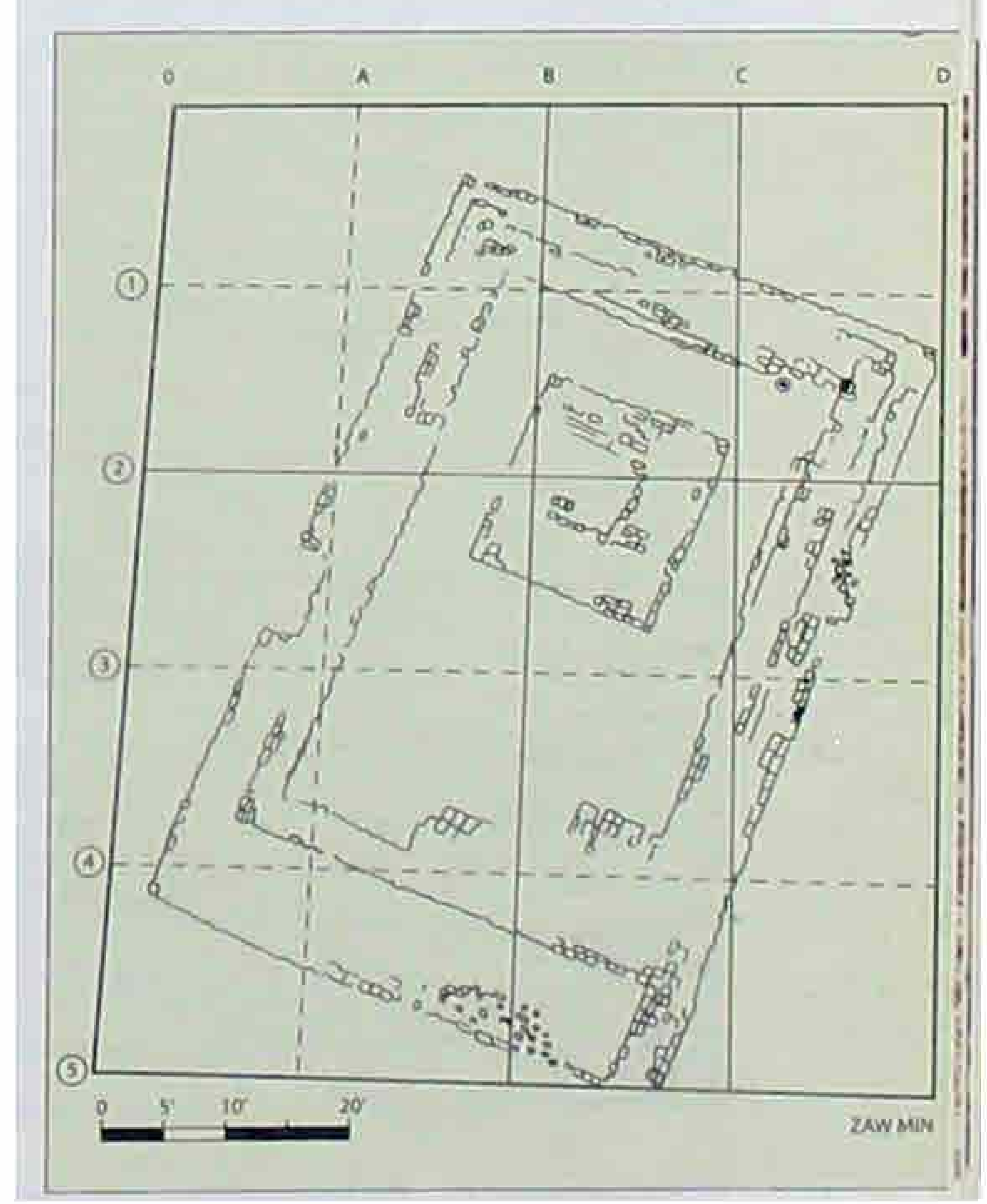
View south across Beikthano with BTO13 excavated structure.

urns from this type of building. Larger concentrations of urns have been recovered from Beikthano than reported from Halin or Sriksetra. For instance, 73 urns were found at BTO-5, a square structure with circular core in the southern part of the site, and 80 urns and one skeleton from KKG12 near the northern wall. The link is not absolute, however, for 73 urns are also recorded at KKG5, a rectangular structure in the west court of the palace area with multiple chambers. It was also from KKG5 that Aung Thaw recovered a terracotta figurine identified as a mythical *kinnarai*.[87]

Beikthano Dating

Habitation at Beikthano is dated to *circa* 200 BC based on four radiocarbon results from wooden pillars obtained in the late 1960s. Two of the Beikthano dates, calibrated to 180 BC-260 AD and 100 BC-390 AD, are from KKG9, a rectangular brick building near to the *In-gyi* or large seasonal lake in the southern part of the site, midway between the rectangular palace-citadel and the southern wall. The KKG9 structure is located just west of an inner wall (KKG23) that extends from the southern wall of the citadel-palace about 80 percent of the distance towards the south city wall. The junction of KKG23 and the south wall of the palace was constructed over the debris of an earlier platform, so that the southern 'leg' was constructed on a dike of yellow clay, possibly for water control. The dike's alignment follows on from the tracks and channels coming through the 25 m long and 4.5 m wide north gate (KKG13) so it may have connected to the area around KKG9 and the angled north wall. It is from this area, 98.14 m high, some 1.8 km north of KKG9, that the two other radiocarbon results,

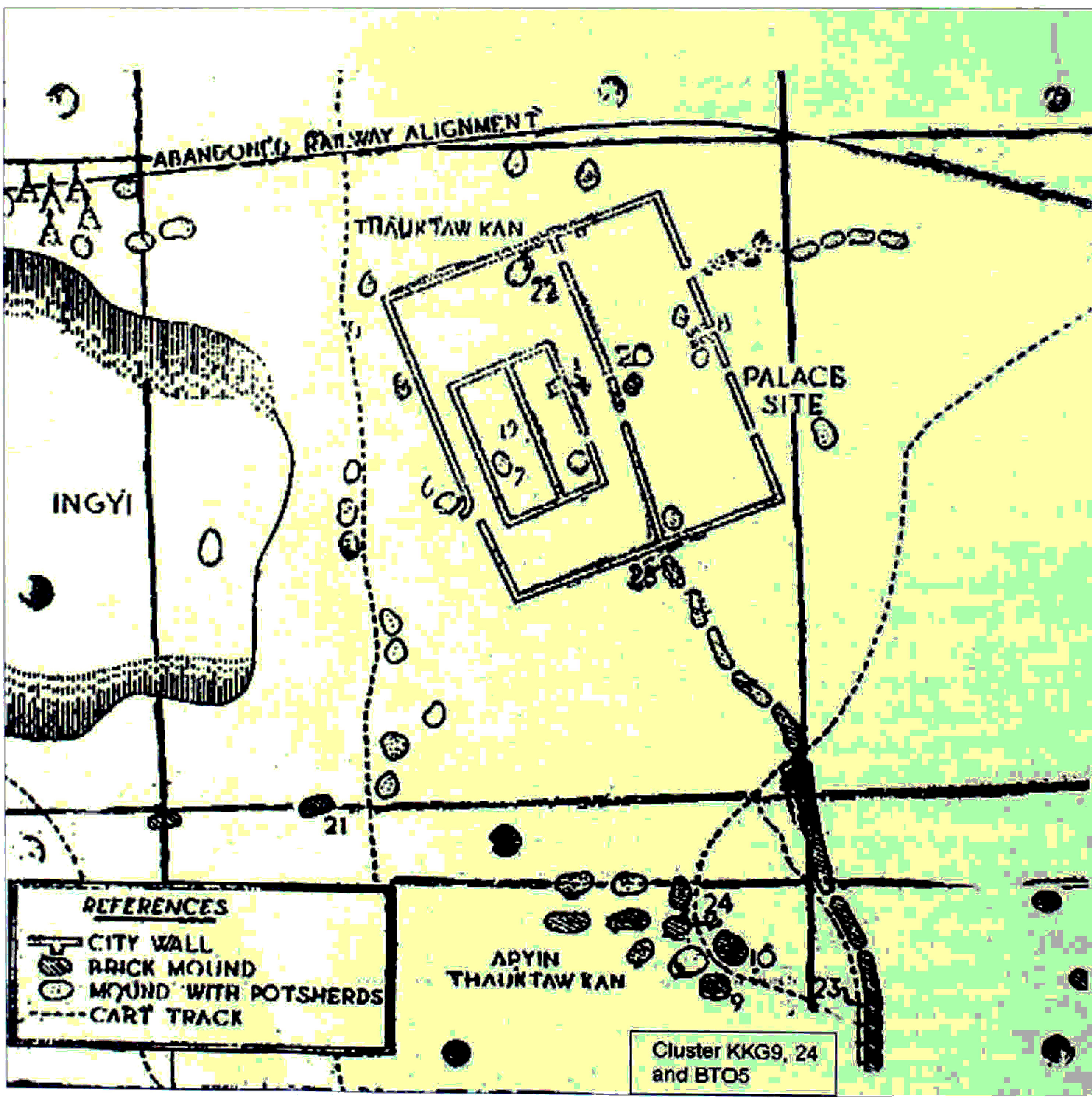
Drawing plan BTO13 structure, Beiktano.



calibrated to 80-540 AD and 210-610 AD were obtained, both from wooden pillars of KKG11.

The dates thus come from widely separated structures and at the outside of the date range, they span 800 years. Significantly, both KKG9 and KKG11 overlie earlier structures that were not completely excavated. While both are inside the walls of Beikthano as we see them today, it is important to keep in mind that none of the walled sites arose instantly – all developed over time with fluctuations in separate areas. We do not yet know the sequence of the wall construction, but given the ecology of the arid central region, work could have been completed in a short period in response to an external threat. They did not delimit the domain of the site, for structures flank the outside perimeter of all the Pyu walled sites. The walls also would have controlled water flow, helping to divert it in times of flood or help to channel streams for agricultural purposes. Many of the canals seen today have been in

Beikthano was rebuilt many times. For instance, excavations showed that the junction of the southern partition wall (KKG23) with the south wall of the palace site (KKG25) was constructed over earlier debris. *(After Aung Thaw)*



Approach to KKG3 structure, Beikthano.

Stupa-like structure at KKG14, Beikthano.

View towards north wall with BT016 and BT013, Beikthano.

Group of three urns, BT016 Beikthano. Data is scarce but the clustering of urns may have reflected lineage or monastic groups.

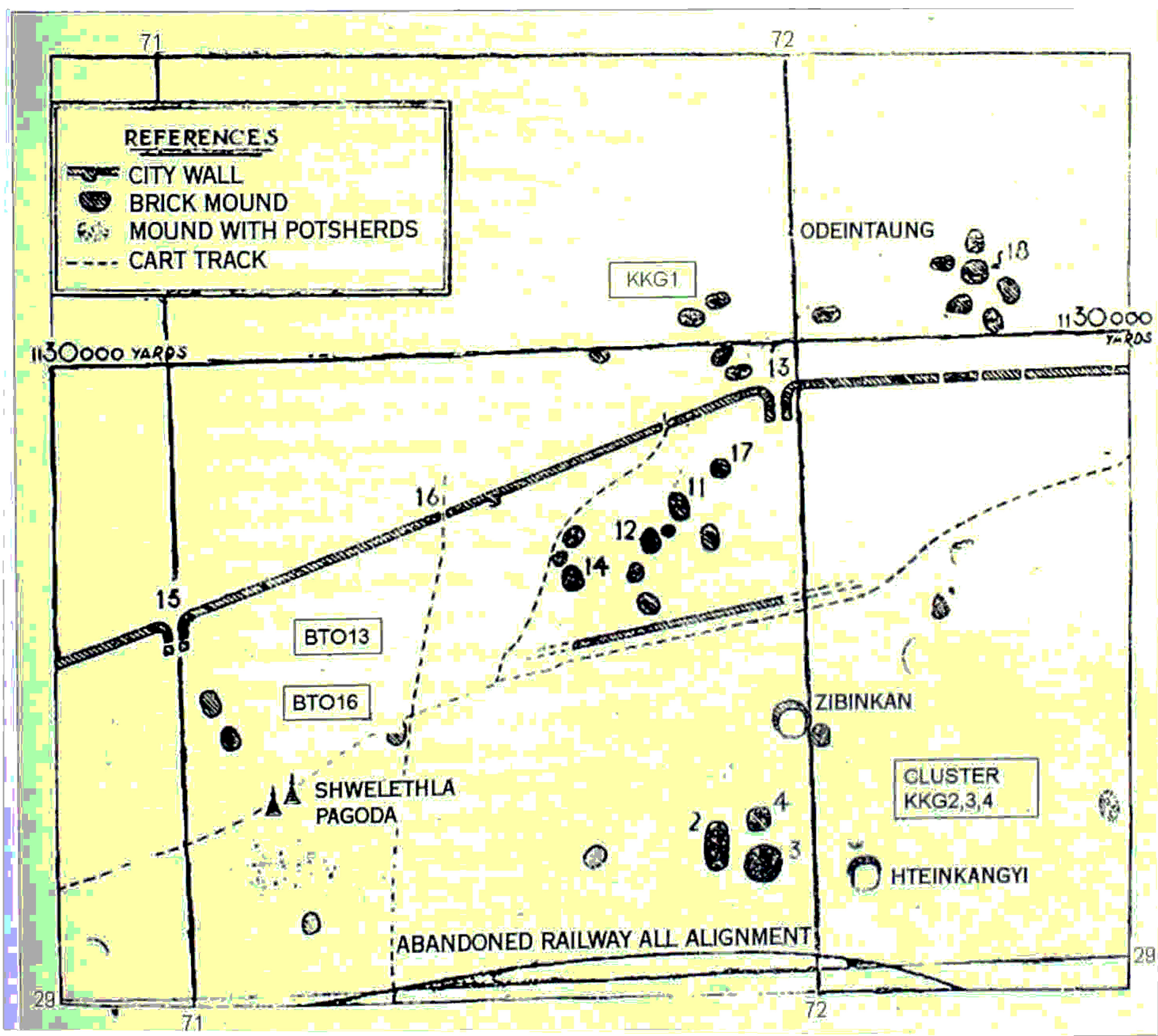
use at Beikthano over the last thousand years, making it impossible to give a date to augmentation of natural water flow into the canals seen today. Each sector operated in relation to a localised topography, something illustrated well by the north wall of Beikthano. San Shwe has noted that the wall on this side of the site is not strong, thought to relate to its construction on top of a dike of rammed yellow clay.[88]

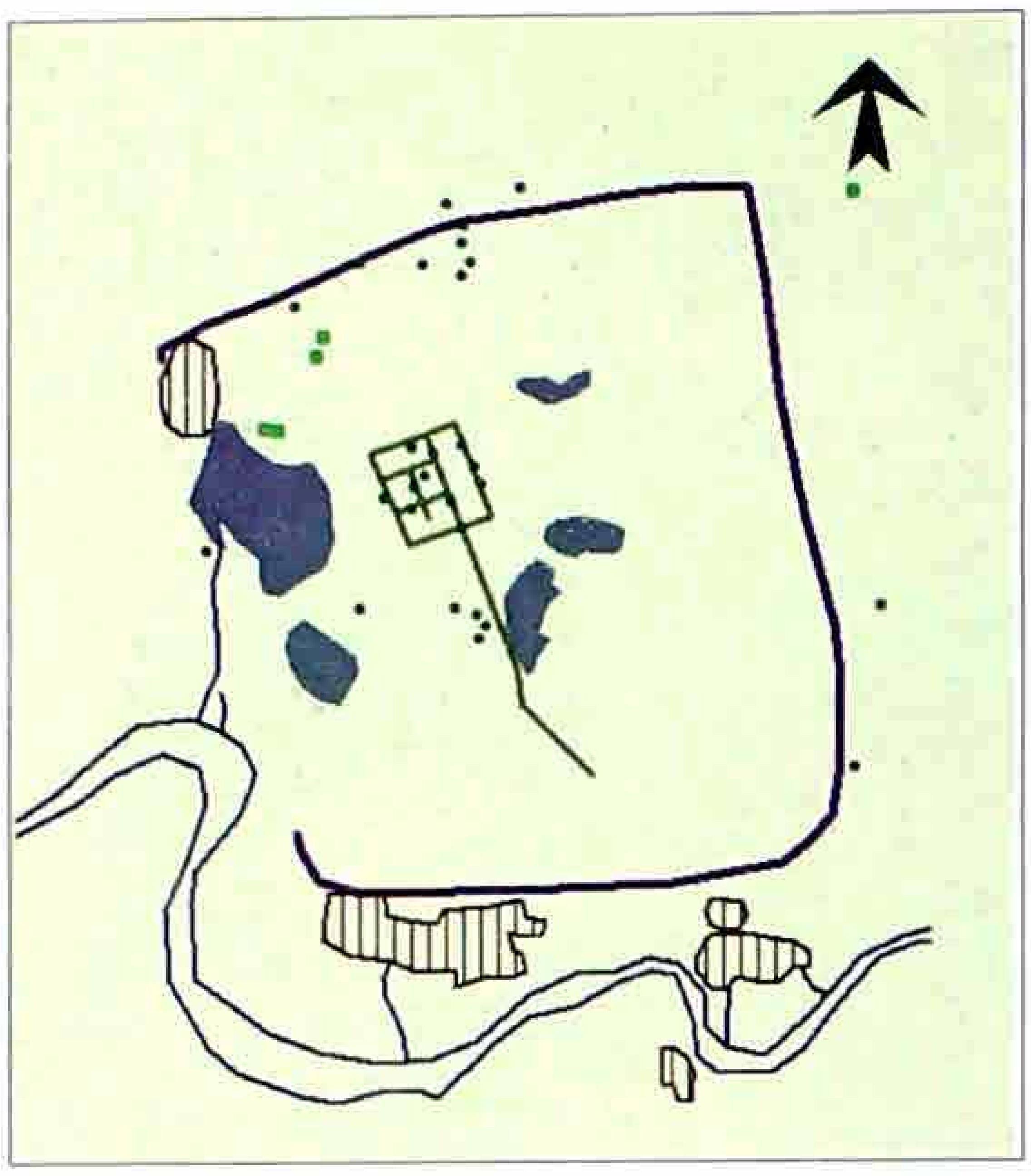
North wall Beikthano

Just south of the north wall gate (KKG13), a cluster of seven structures form a northeast to southwest alignment. Nearest to the gate is KKG17, a rectangular building (7.3 x 3.3 m) with an entry on the east side. U Aung Thaw recorded a total of 588 terracotta beads from KKG17, out of a total of 708 beads from the excavations at the site. Most of these were made of terracotta, but carnelian, amber, crystal and amethyst examples were also found. A number of imported potsherds were also found at KKG17, some stamped with figures of a man. Evidence of rebuilding was seen in the discovery of two floor levels on the interior leading to suggestions that it may have served as a 'control point' or warehouse for traders.

Bronze and iron artefacts have been found in villages northeast of this wall, and Shweyaungdaw, the principal *stupa*, is also located on the northeast. This is the highest part of the land around Beikthano, with water flowing from here through the site to the southwest. It is also on the north that KKG1 is located, just outside and west of the north gate (KKG13). It is one of many burial mounds located in the perimeter outside the city walls. The 14.4 x 7.2 m building enclosed multiple chambers arranged in rows. All but the central chamber contained burial urns filled with bones and densely packed earth and covered with lids, some knobbed. In recent years, the Department of Archaeology has begun to excavate a further series of structures such as BTO18, BTO19 and BTO20 to the northeast of KKG1 outside the north wall, furthering the picture of a series of villages – perhaps with fortifications – arising in different part of the site. Some 41 urns were recorded at BTO20, similar in plan to KKG1. A further clustering outside the gate area is seen on the southeast side of Beikthano. Similar patterns of a number of structures and burials flanking the exterior wall of the

North wall cluster with KKG1, KKG11, KKG12.
(After Aung Thaw, San Shwe)





Sketch of Beikthano showing clustering of structures excavated around north wall and central palace. *(After San Shwe)*

Above right: Pottery from BTO13 Beikthano.

site are seen on the south and southeast of Sriksetra and the south of Halin. In all cases, these appear to mark the buttress area as one whose economic importance, perhaps for nursery rice cultivation, was understood as an integral part of the site domain.

Terracotta sealing, pottery and Buddha image

The earliest written evidence from Beikthano, is from a terracotta sealing, its Brahmi script dated to the 2nd to 3rd century AD. The terracotta sealing is circular with letters in relief round a central dot. There have been several readings of the letters, which appear to be '*Samghasiri*' with titles having a *–siri* suffix seen in 1st century AD Amaravati inscriptions. However, writing on a related Sriksetra seal has been read as dating to the 5th century AD, and similar examples from Cambodia and the Malay peninsula are thought to be later. To date at least, inscriptions on stone have not been recorded at Beikthano. This and the chronicle accounts have perpetuated the sense that Beikthano is the earliest of the large Pyu settlements. The demise of the city in the 5th century probably reflects only a growing dominance of Sriksetra, and gives little idea of the range of artefacts found at the site. The stamped pottery, images of the Buddha and architecture which illustrate this, all suggest a wide timespan and various religious sects.

Pottery *in situ* at Beikthano BTO13 excavations.

Pottery is the most abundant artefact from Beikthano, with arguably the most elaborate of the terracotta urns coming from this site. None of the urns have been dated, nor a detailed study made of their contents. However, as it appears that they were deposited at the time buildings were erected their use is dated to 200 BC based on one of the dates from the wooden pillars of KKG9 discussed above. Stamped and moulded decorations seen on pottery from Beikthano, once taken to be imported from India, are considered to be a local product, with Glover and Bellina dating production to around the 2nd to 4th century AD.[93] Potsherds dated by thermoluminescence at the Australian National University gave absolute dates of 390 AD for a potsherd from KKG3, 440 AD for a potsherd from the northwest gate KKG15 and AD 770 for a sherd from KKG2.

A similar timeframe is suggested by some structures at Beikthano, notably the many *stupa*-like buildings with a cylindrical core. These generally have semi-circular and mango sprout bricks and associated finds of urns and skeletons on the interior and exterior areas. Stargardt has suggested links for these to the *uddesika* stupas of Nagarjunakonda, and even more to the 2nd-4th century AD Mohra Moradu *stupa* near Taxila.[95] San Shwe gives a similar date to a bronze bell (6 cm height) excavated at BTO13. The bell is a simply made, with a small ring at the top but no clapper, likened to bells from Prakash in Central India which are dated to the 2nd to 3rd century AD.[96] BTO13 is rectangular, with an interior square construction at one end, a plan also seen in BTO19 – where 41 urns were recorded – and BTO21 north of the north wall. It is adjacent to BTO16, a *stupa*-like structure with a cylindrical inner core where a group of three urns was found flanking the north wall of the structure. Further study may be able to show whether the two were built to complement each other or if they were erected in different periods.

Documenting pots at Beikthano BTO13 following excavation.

The rectangular KKG2 monastery with the multiple small cells also can be compared to monasteries at Nagarjunakonda.[97] However, San Shwe feels ties to Taxila preceded those with the Andhra region, supported by structures, pottery and other ornaments. For instance, miniature *stupas* at Dhamarajika, Taxila are similar to Beikthano's *stupa*-like domes, and if a *dharmacakra* plan is accepted for KKG3, the wheel-like *stupa* is seen earlier at Taxila than at Nagarjunakonda. In addition, the form of many terracotta vessels at Beikthano is seen at Taxila in bronze or stone. These include drum-shaped cylinders, rounded begging bowls, water pots, flagon-shaped '*lota*' pots and carinated cooking vessels. Additional objects paralleled at Taxila include a small intaglio carved stone for making metal jewellery or ornaments, and a stone quern and pestle. Tanged bronze mirrors from Halin also are seen in copper at Taxila.[98]

Two urns from Beikthano, one decorated with animal figures.

The pottery and small objects indicate a 2nd to 4th century AD timespan but the two images of the Buddha from Beikthano are somewhat later. One image, 13 cm in height, was unearthed in 2004 excavations just south of the north wall at BTO13. The figure is seated in *pralambanâsana* or 'European position' with the right hand in the *Vitarka mudra* and the left hand resting on the knee.

The U-shaped fold of the robe hanging between the knees is close to that seen on seated images from Dvaravati sites such as Nakhon Pathom in Central Thailand, where they are dated to the 7th or 8th century AD.[99] A similar U-shaped fold is seen on a seated

Seated image of the Buddha excavated at BTO13, before and after conservation. *(After San Shwe)*

image (13 cm) from Thagara and another from Twante.[100] In all three cases, the robe covers only the left shoulder, with the right hand raised.

Based on the image's large hair curls and face and resemblance to a relief in the Lemyathna pagoda, Sriksetra, San Shwe dates the seated Buddha to the 5th to 6th century AD.[101] The Lemyathna Buddha is flanked by two stupas, a convention that Brown, however, places within a general argument for dating many Pyu sculptures and votive tablets to the 7th century AD.[102] In several cases, this is based on resemblance to Dvaravati pieces, something also seen in a small (5 cm) seated image of the Buddha reportedly found at Beikthano in 1996, now enshrined in the Sacred Tooth Relic pagoda in Yangon.[103]

Continued occupation at Beikthano is seen particularly in stucco architectural ornaments from KKG21,'big monastery mound' (*Kyaung-gyi-gon*) or 'gold-sifting mound' (*Shwegyingon*) just south of the large *in-gyi* or lake on the west side of Beikthano. The KKG21 building is a 13.2 x 8.4 m structure with a 7.5 x 4.7 m antechamber. This plan, along with the stucco finds and size of bricks (37.5 x 17.5 x 6.25 m) date it to 11th to 13th century AD Bagan period. The stucco pieces included animal figures, *devas* and ogres or *bilu*, similar to those found at the HL19, a Bagan period monastery outside the southeast wall at Halin. Due to these Bagan period finds and a modern well southwest of the KKG21 mound, little further work has been carried out at the site. Nonetheless, a Pyu period urn was excavated here – an important reminder of its earlier occupation.

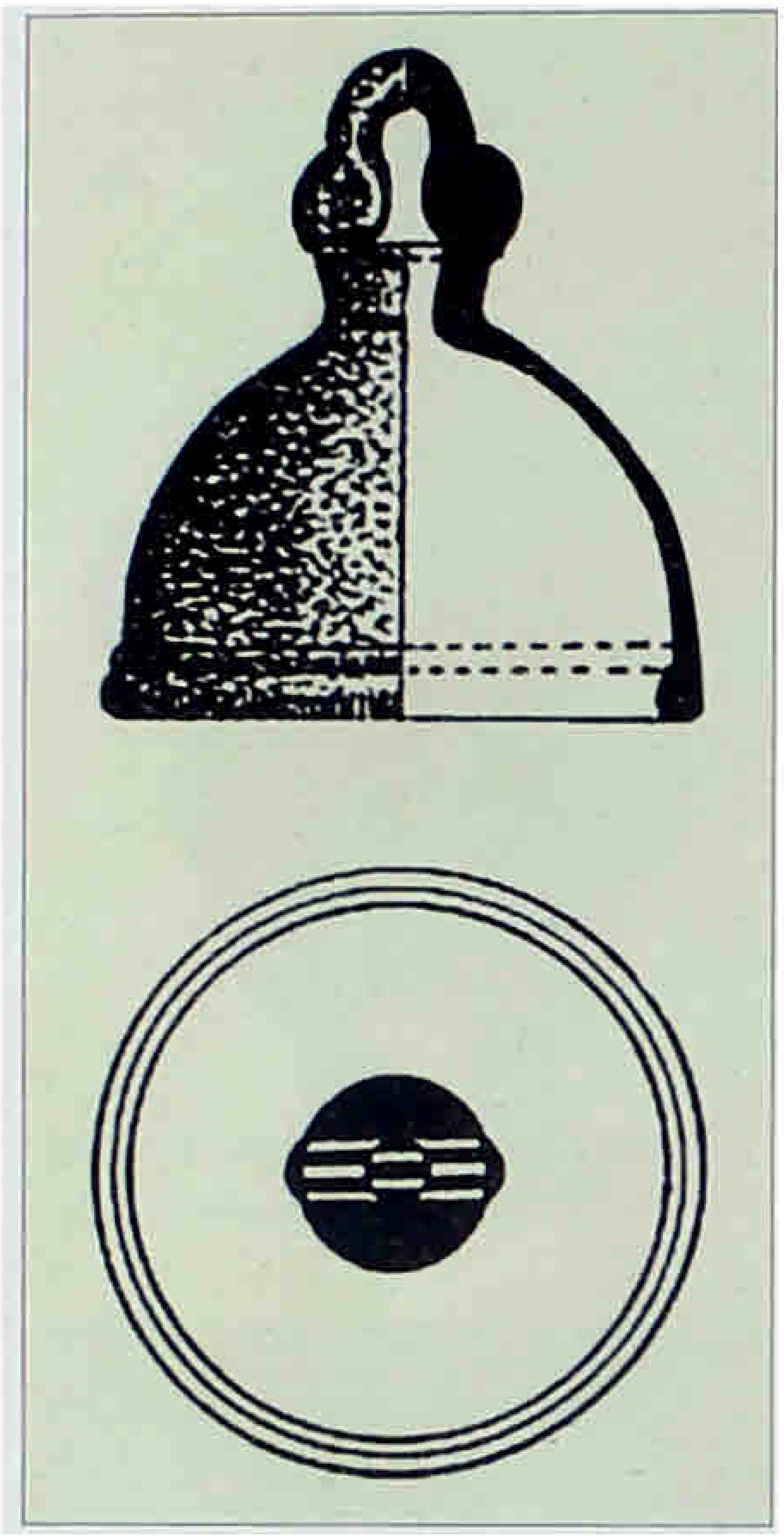
There are at least seven different clusters of mounds that can be seen at Beikthano. Two are on the east, around the gate on the southeast and on the northeast around the Shweyaungdaw pagoda. Another large group is seen around the north gate where the KKG11 dates of 80-540 AD and 210-610 AD were obtained. There are further clusters midway between the wall and the palace and around the large circular *stupa* (KKG3) that San Shwe distinguishes within a possible 2nd to 3rd century AD Monized phase. Another cluster is seen along the southern partition wall, where the KKG9 dates of 180 BC-260 AD and 100 BC-390 AD were obtained. To restrict any one of these areas to a single phase would be deceptive for prehistoric habitation certainly would have included what is now the walled area. And while the walled zone afforded protection as needed, the distribution of structures, probably some considered apotropaic, outside the wall points to its inclusion with site's domain. However, within the framework of the site alone, a general south to north development may have occurred, from the lower more flood-prone areas to the higher terrain.

This hypothesis fits generally with that of Aung Thaw, who placed KKG9 in the 1st-2nd century AD, KKG11 in the 3rd-4th century AD and KKG21 in the 11th century AD.[104] Than Tun, however, based on the 13 degrees west inclination of the north-south alignment of the east wall (3,048 m), dates its construction to

Women collecting firewood, north of north wall at Beikthano.

Flat terrain around BT021 south of west *in-gyi*, Beikthano.

the 1st or 2nd century BC.[105] No Pyu inscriptions were found at Beikthano, leading to an early suggestion by Than Tun that the site was occupied by a Tibeto-Burman group preceding the Pyu, and that this group was later displaced by the Pyu.[106] This echoes Taw Sein Ko's note that natives of Taungdwingyi near Beikthano identify with the Tibeto-Burman Kadu, while Pyu and then Bamar groups settled at Sriksetra.[107] Or it may have been, in Chen Yi-Sein's reading of Chinese records, that there were of periods of intermittent Mon-Khmer habitation at Beikthano.[108] These varied citations all highlight a point re-iterated many times here, of a need to research the many fluctuating groups present in pre- and proto-historic periods.



Drawing of a bell from BT013, Beikthano. *(After San Shwe 2004)*

Our understanding of Beikthano's interaction with surrounding areas has been boosted in recent years with excavations undertaken at Letpanywa (19.48n x 95.58e) for it is one of the few non-walled site excavated sites Pyu artefacts. Excavations were undertaken in 2001 and 2002 by the Department of Archaeology, at the village of Letpanywa, 30 km southwest of Beikthano. Finds included skeletons inside and outside the boundaries of two rectangular buildings with finger-marked bricks. All skeletons were associated with iron artefacts such as swords, hammers and spears. Among the other finds were two flat bronze bands *circa* 2 cm in diameter, each bearing large-nosed human faces worked in relief. The faces are reminiscent of the Samon Bronze-iron workmanship, although the location of the site suggests a possible satellite fort of Beikthano along the lines of the fortress sites documented by Win Maung (Tampawaddy). To date, similar excavation has not been carried out at these or at Thegon, which probably served a similar guardian function for Sriksetra.

Repaired outer wall of monastery structure at KKG2, Beikthano.

North (*nat*) gate of Sriksetra.

Sriksetra

Sriksetra is called Thayekhittaya in Myanmar, and also mentioned as Yathet-myo or 'city of the hermit.' Other references to the site include Hmawza, the name of the village and railway station inside the walls, and the city of Pyay (Prome) located some 6.4 km to the west on the bank of the Ayeyarwaddy. The continued pairing of Sriksetra and Pyay can be seen in the 1093 AD inscription of Kyanzittha at the Shwesandaw recounting the Buddha's prophecy of the founding of the Sriksetra in the 101st year after His demise. Both Hsüan Tsang (Xuanzang, c. 643AD) and I Ching (Ijing, c. 680 AD) refer to Sriksetra, with I-tsing (Ijing) noting,

"It is more than a month's march to reach these mountains. To the south, the country borders on the sea: it is the kingdom of Sriksetra."

The name Sriksetra, 'field of glory' or 'auspicious land' could be an honorific rather than a contemporary placename, for neither Hsüan Tsang nor I Ching actually visited the city. Sriksetra was first investigated archaeologically in the early 20th century. Taw Sein Ko, after an initial visit to the site with Beylié in 1906-07, carried out excavation and repair at the site, recorded in his reports for a number of years from 1907 to 1914.

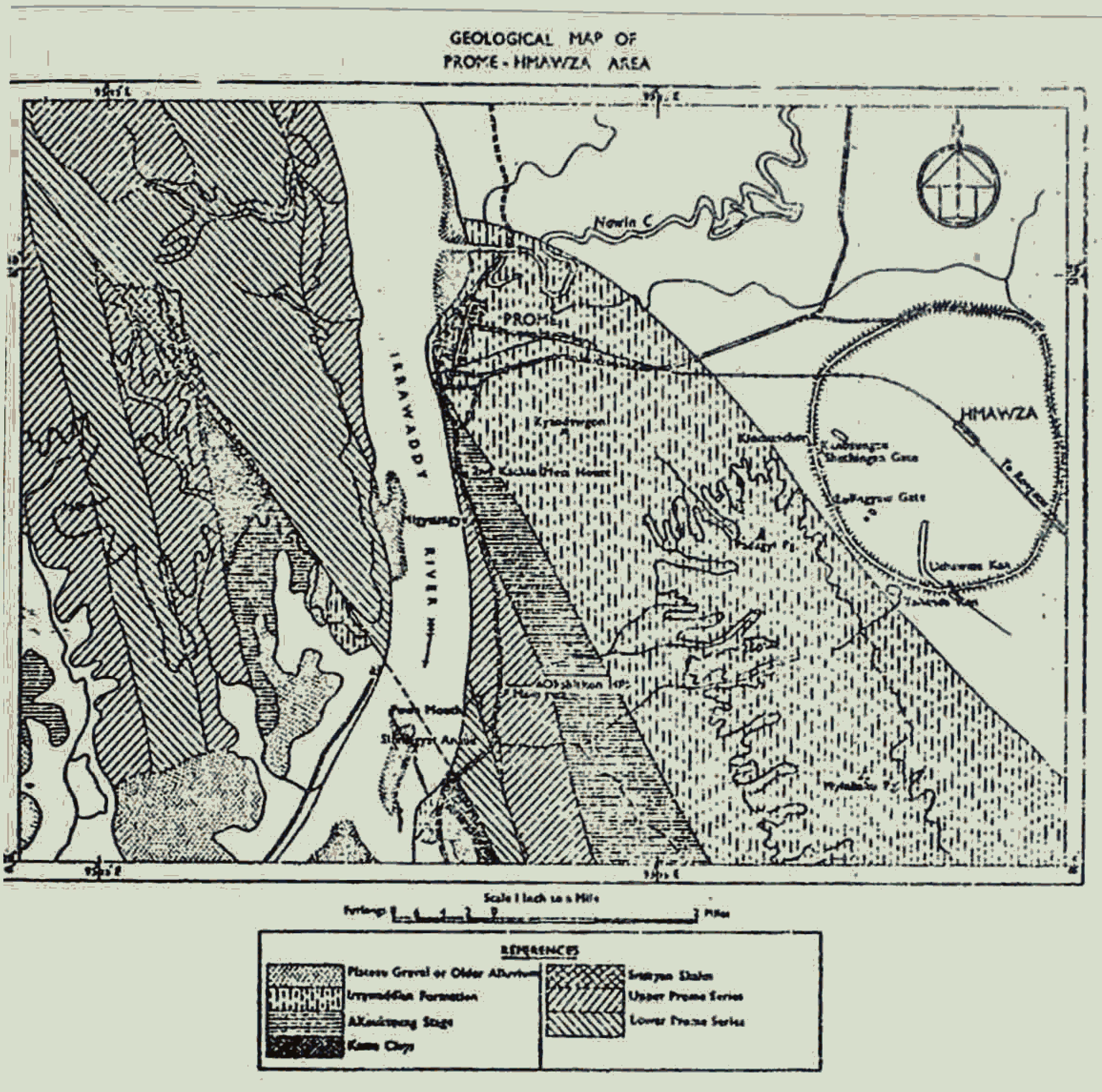
The walls of Sriksetra are rounded, with a circumference measured from aerial photographs of about 14.6 km.[113] Enclosing an area of approximately 30 sq km, it is the largest of the known Pyu centres.

The walls at Sriksetra may never have enclosed the site although they give an impression of 'completeness' on aerial photographs. Multiple walls may have been built at critical points for water management, perhaps during a short time period. Recent excavations at Lu Lin Kyaw gate, north of Yahandar Gate, unearthed a large external assembly area and a burial urn. *(After Aung Myint)*

Main road at Hmawza, Sriksetra.

A wall runs along the north and is noticeably less massive on the east. The land on the east is lower and flatter, with a large *in-gyi* where the stream bends around from the north. On the southeast three 30 m wide walls are found, diminishing to two on the west – although updating of maps is underway. The correlation between the wall constructions, rice cultivation and local production centres can be seen by this clustering on the south and southeast of walls at ritual structures and villages such as Kalagangon where a gilded silver casket was found. The eastern wall connects on the north to the Nawin Chaung, which flows west past Pyay to empty into the Ayeyarwaddy. It is possible that the lower-lying swampy area to the east once was a stream forming the perimeter of the site, with the present wall being a later construction following a drying out of the area. In general, Sriksetra receives somewhat more rainfall than the other Pyu sites farther to the north, its average of 1,250 mm per annum comparing to some 750 mm at Halin and 870 mm at Beikthano.[114]

The elevation just east and north of the site is some 30 m, rising to 42 m on the east end of the triple layers of wall, where the railway line passes into the ancient city. To the west the land rises quickly to 121m, and it is in this south and southwest area that a number of burial urns have been unearthed.[115] Where the west wall was constructed, the recent alluvial soils of the site's interior change



The southwest area of Sriksetra is located on higher ground, part of the underlying Irrawaddian Formation.
(After 'Report of the field work at Hmawza (Sriksetra) and Prome' by Drs. Tha Hla & Nyi Nyi in Journal of the Burma Research Society *41(1): 83-96)*

to the hilly rock formations of the Irrawaddian Formations. One resource of this area, silicified fossil wood, was used to make the black and white beads with line drawings discussed in the last chapter. On hilltops in this area between Sriksetra and Pyay, a number of small monasteries and pagodas are found, noted as a meditation centre likened in importance to the monasteries around Sagaing opposite Mandalay. Just southeast of Pyay are further Buddhist establishments, as well as Chinese, Christian, Muslim and Hindu cemeteries.[116]

The majority of above ground structures are in the south part of the city, both inside and outside the walls.[117] Four of these are found within 100 m south of the wall. From east to west, these are the Lemyethna, the Bèbè, the Bawbawgyi, and the Yahandar-gu. Preservation work and excavations are noted at the Bawbawgyi, the Bèbè and the Leymyethna from 1907.[118] The Bawbawgyi is about 250 m south of the wall, standing 46 m high. The structure rests on five terraces, their circular form supporting an early dating for their construction. The cylindrical brick structure was once plastered, as seen by the notched bricks of its surface. The lower two-thirds of the Bawbawgyi is hollow, up to a height of some 24 m.[119] Additional constructions are located further south, including several fortresses (*Pyudaik*). As we noted earlier, several basins were found near one of these, and the 'Beikthano Queen's cemetery' is in this area.

Sandstone pillar, four faces carved with 3 rows each of images of the Buddha and *stupas*, Hmawza.
(Archaeology Museum Sriksetra)

Bawbawgyi stupa, Sriksetra, with detail below.

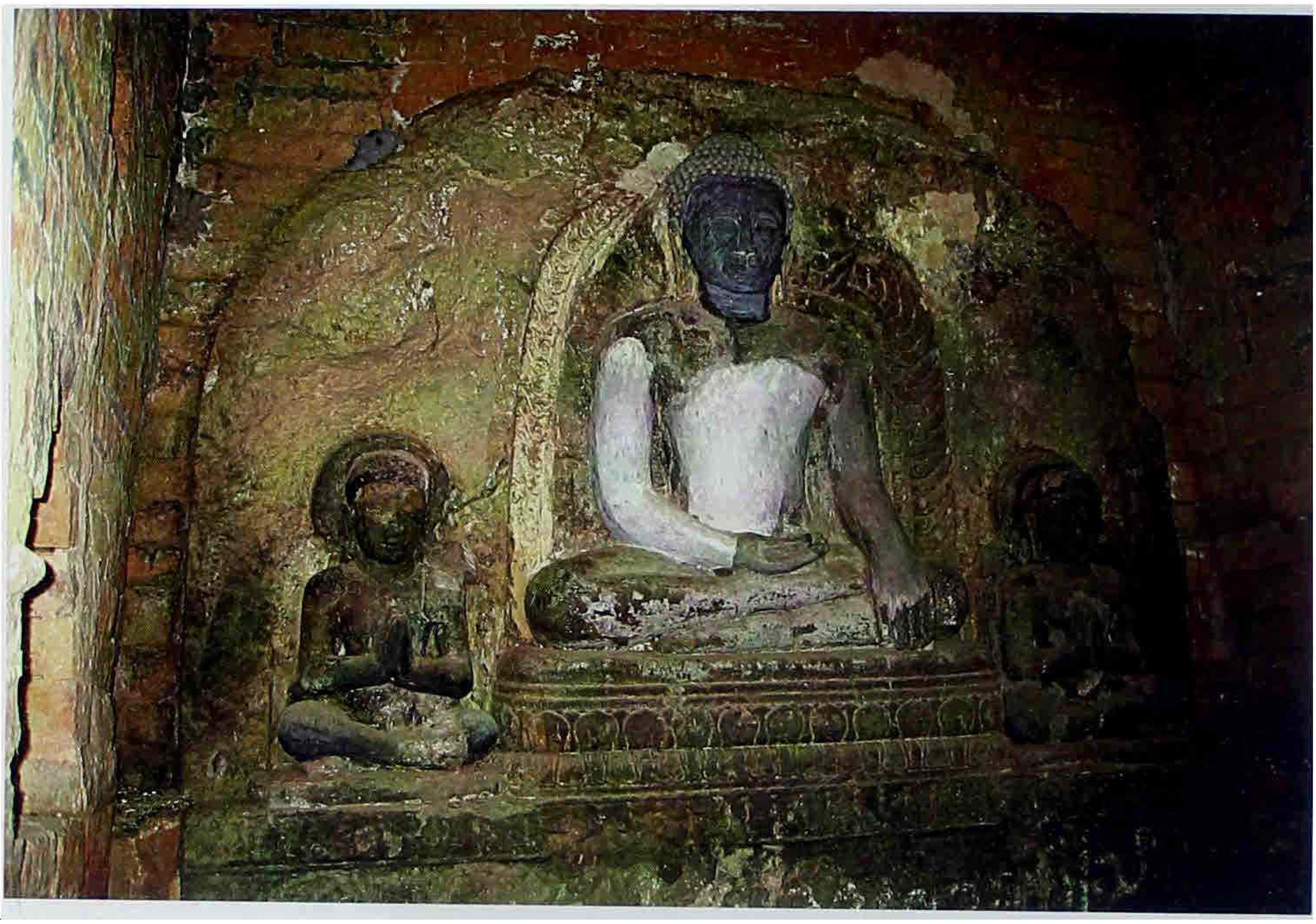
The Bèbè (SK12) is a 4.8 x 5 m square structure, with an entrance on its east side. It forms a hollow cube, above which are three receding terraces, and cylindrical pinnacle. The rounded top may have once been more angular, its shape sometimes described as a *shikara*-type.[120] The exterior is decorated with false doors and pilasters, while the interior walls have arched niches. A large (245 cm) stone slab depicting a seated image of the Buddha flanked by two disciples was found on the interior resting against the west wall, the style used to give a 7th century AD date. The *Bhumisparsa mudra* of the image is unusual, with the right hand in the lap and the left hand touching the earth.[121] It has plausibly been suggested that a number of the rectangular structures may date to the Bagan period with older Pyu pieces re-installed. Elements such as arches, the use of stucco decoration and the mouldings of door jambs also suggest a later construction.[122]

Hpaya Gyi stupa, Sriksetra.

The Leymyethna (SK3) or 'four faces,' is larger than the Bèbè, with entrances on each of its 6.7 m sides. There are four terraces on the roof, but the pinnacle has disappeared. A moat once surrounded the building, a feature seen at several smaller foundations south of the city wall. The interior of the building has an outer corridor for circumambulation, centred on a square core. On each face, stone slabs carved with a seated image of the Buddha were once placed. The slab on the south side depicts a figure, possibly the future Buddha, Maitreya on the right of the Buddha. The carving is akin to Gupta pieces and dated to about the 7th century AD. Other sculpture from Sriksetra also bears Gupta influence, although possibly a century or two later. These include a 37.5 cm slab from Shwe-nyaung-binyo mound, carved with an image of the mother of the Buddha, Queen Maya and her sister. Both are shown in a slightly flexed *tribhanga* pose. Maya's left arm is draped around her sister's shoulders, while her right arm is raised to hold the branch of the sal tree forming the upper curved edge of the slab.[123]

Leymyethna, Sriksetra.

Still outside the city wall on the south, but further to the northwest, is the Yahandar-gu or 'ascetic's cave.' As its name suggests, it is a narrow cave-like structure with entrances at each end, and another on the east.[124] Perhaps because of the narrowness of the structure, the corridor is vaulted with corbelling rather than the true arch. As with many other buildings at Sriksetra, stone slabs carved with images of the Buddha have been found at the Yahandar-gu. Two slabs were set against the west wall, each depicting a row of eight seated Buddhas. Duroiselle reported excavating earthen urns containing ashes and bones, with nails nearby and from a garden in the village, a collection of 36 urns is mentioned.[125]



Stele with image of Buddha, seen with left hand in *Bhumisparsa mudra*. Stadtner has suggested that the present temple structure may post-date the stele. Bèbè, Sriksetra.

Stele with image of Buddha flanked by *stupas*, Lehmyethna, Sriksetra. The use of *Makara* to flank an image of the Buddha is also seen on the Sriksetra gilded silver reliquary, sometimes dated to the 5th century AD.

Royal inscriptions at Sriksetra

Stone urns

We know little of the different dynastic lines that occupied the Upper Myanmar sites. Some of the most valuable evidence for royal lines comes from Pyu inscriptions on five stone urns from Sriksetra. Written in Pyu with interlinear Brahmi, the script has been dated to the 7th to 8th century AD.[126] The writing includes years, but does not specify an era, leading to continued debate about their dating. Four of the stone urns were unearthed in 1911-12 from a grave some 63 m south of the stupa but within the precincts of the Payagyi, outside the city wall on the northwest. One had been looted but the other contained white pebbles, bone ash, and red earth.[127] Each bore the name of a single person, deciphered by Blagden using the Burmese era that begins in 638 AD:[128]

In 35/AD 673 a relative (?) of Suriyavikrama died.
[Urn height 71 cm, circumference 267.5 cm]

In 50/AD 688 Suriyavikrama himself died, at the age of 64.
[Urn height 95 cm, circumference 210 cm]

In 57/AD 695, 2nd month, 24 days, Harivikrama died, aged 41 years, 7 months and 9 days.
[Urn height 92.5 cm, circumference 182.5 cm]

In 80/AD 718, 2nd month, 4th day, Sihavikrama died, aged 44 years, 9 months and 20 days.
[Urn with lid height 62 cm, circumference at top 186 cm]

A fifth urn was found in 1976 at the Hpaya Htaung (HMA31), a square (11.4 m) *stupa*-like structure northeast of the citadel-palace area.[129] It is the largest urn, measuring 105 cm high and 260 cm in circumference and is inscribed with five lines of writing giving all the names in serial order. Using this information, and basing the era on the Gupta (adding 319 years), San Win obtained a different sequence of names:[130]

On the 9th day of the 7th month in the (Pyu) year 41 (AD 360) King Hri Vikrama died. His age was 57 years, two months and 24 days.

On the 20th day of the 9th month in the (Pyu) year 44 (363 AD) King Singha Vikrama died. He was 80 years old.

The beloved wife of King Suuriya Vikrama (the queen) died. She was 35.

In the (Pyu) year 64 (383 AD) King Suuriya Vikrama died, at age of 50 years and 5 months.

The different proposals all highlight the need for more data. Some suggest that *vikrama* suffix may indicate adherence to Vishnu, a practice used most extensively by Gupta kings of the 5th to 7th century AD.[131] Sculptures of Vishnu have been found in Upper and Lower Myanmar, and in Rakhine as well as Thailand and Cambodia.[132] Many of the Vishnu statues are large, suggesting elite patronage and perhaps alluding to the deity's association with temporal rule.[133] In this context, Luce noted a broken one metre high stele depicting a four-armed image of Vishnu standing on an upright Garuda with Lakshmi on his left standing on a lotus. Two

Palace site is dark northwest-southeast oriented rectangle in centre of photo with Hpaya Htaung mound off the northeast corner of palace. Photo 1144 EA25 01 March 44 F36.
(Williams-Hunt Collection, SOAS)

other large sculptures, both broken, of Vishnu were found in 1920 in the hole of a monitor lizard near Kalagangon mound on the southeast of Sriksetra. One shows Vishnu standing on Garuda (40 cm) and the other Vishnu Anantasayin (39 x 36 cm). Unusually, the lotus stem rising from Vishnu's navel divides into three making thrones for images of Brahma, Vishnu, and Shiva.[134]

A related inscription in Pyu and Sanskrit is found on the throne of a seated (now headless) image (57 cm) in *Dhyani mudra*. Brown feels the style of this image, with its narrow torso, broad shoulders both covered by a transparent robe, and flat layering of the legs, is comparable to 7th century AD images from Sri Lanka.[135] The image, found at Wet-gaung-kan hill at Sriksetra in 1927-28, was donated by Prince Jayacandravarman.[136] He refers to his younger brother Harivikrama and the creation of two cities in one day. In the last verse, it is hoped that friendship and common adherence to the Buddhist teachings of their hermit-teacher will continue to the end of the world.

The Hpaya Htaung urn was close to the centre of the site although the four Payagyi urns were outside the wall. This lack of distinction between inside and outside is seen again in the abundance of structures outside the southern sector of the Sriksetra wall. Even if the walls were rebuilt many times, the distribution of monuments suggests that its gates were only closed in times of military offensive or siege, and that the political domain of the reached far beyond the brick walls. The fortifications were more an assertion of power than evidence of a need to retreat behind walls. Like the fortress sites demarcating a perimeter around Halin, Thegon (18.32n x 95.58e) is located to the south of Sriksetra. In this sense, the walled area, large as it was, was within a defensive perimeter of guard-sites indicating the type of dispersed yet obligated population implied by Chinese accounts of the Pyu.

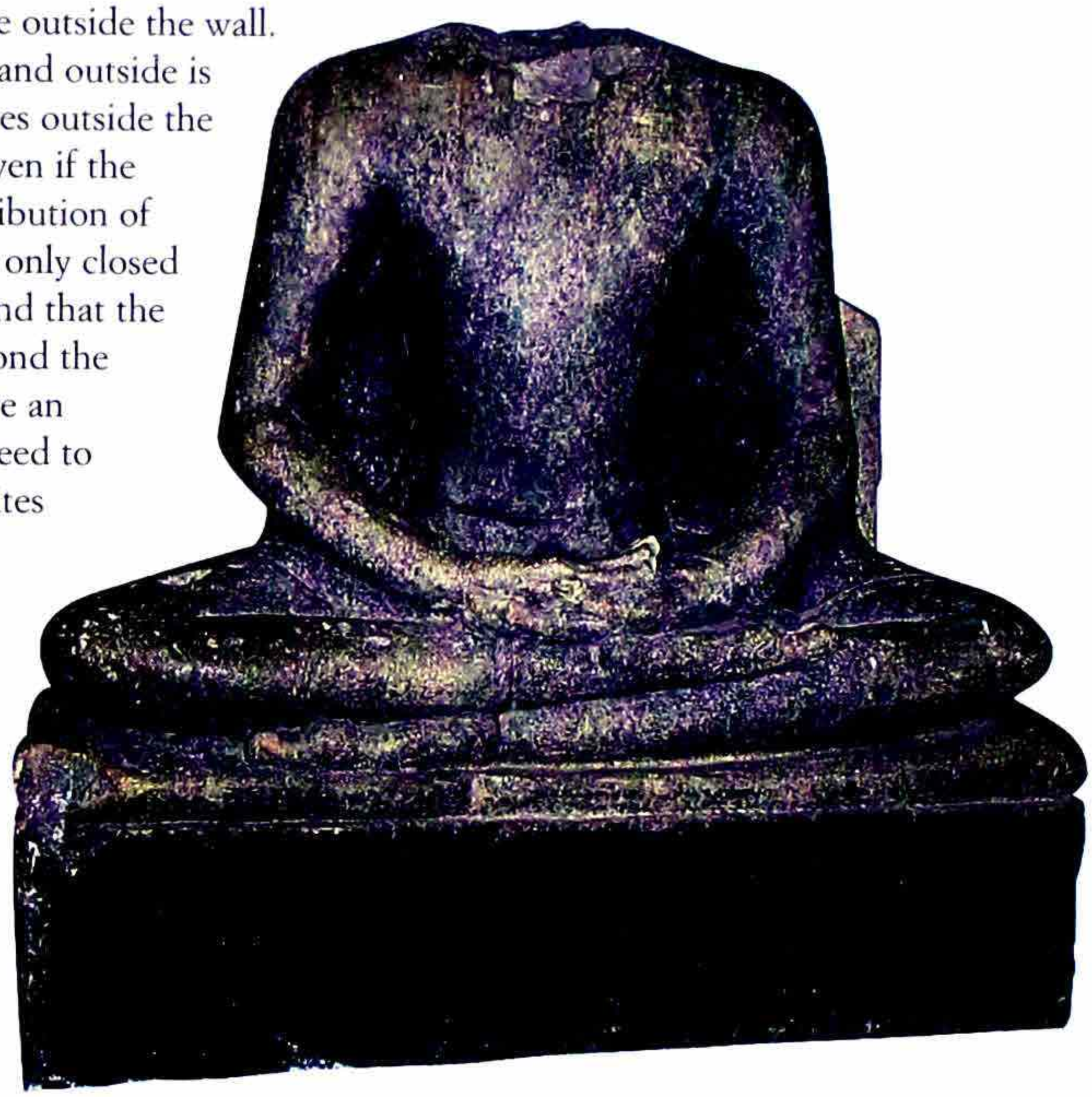


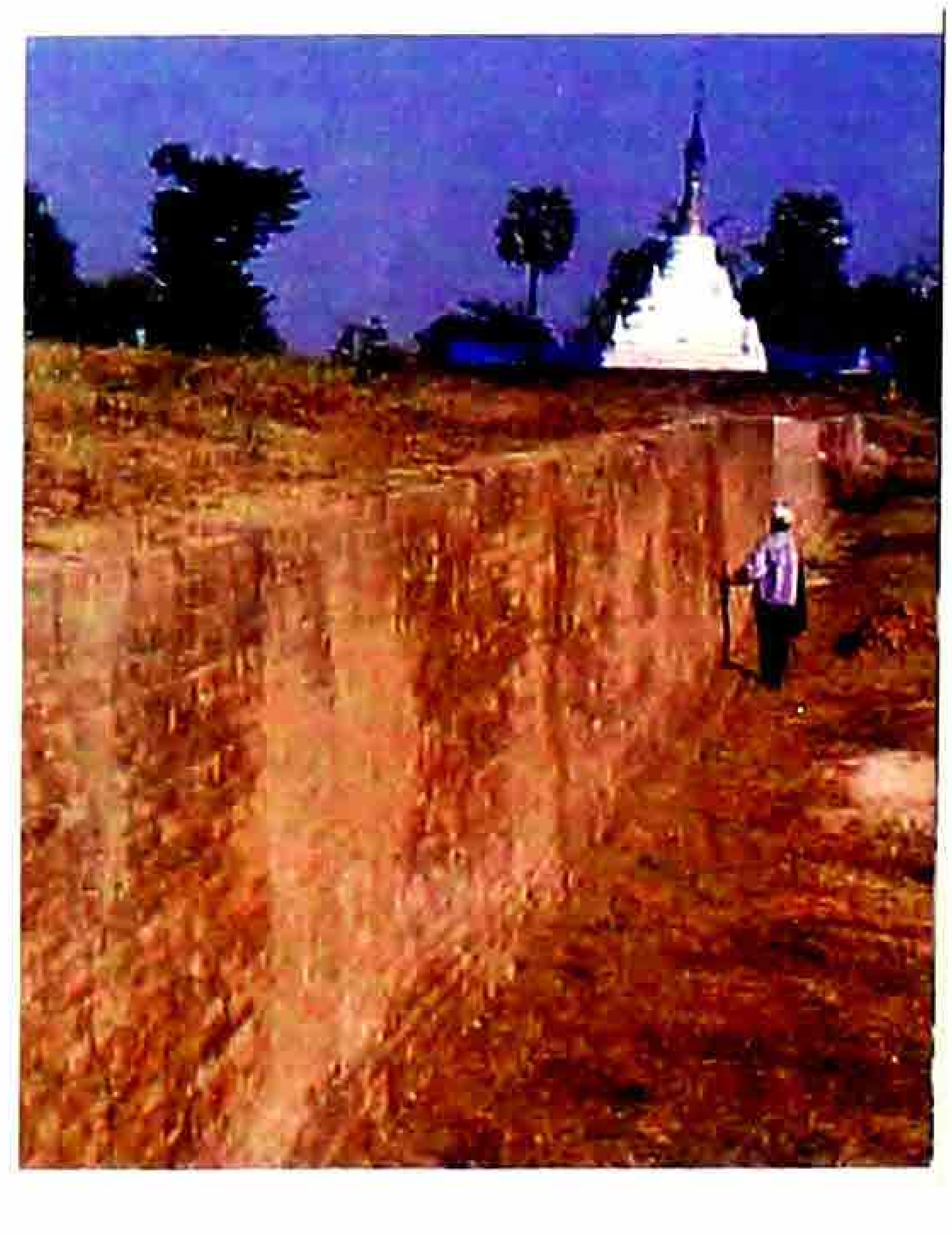
Image of the Buddha, headless, seated in *Dhyani mudra* on inscribed throne. *(Archaeology Museum, Sriksetra)*

Silver Reliquary

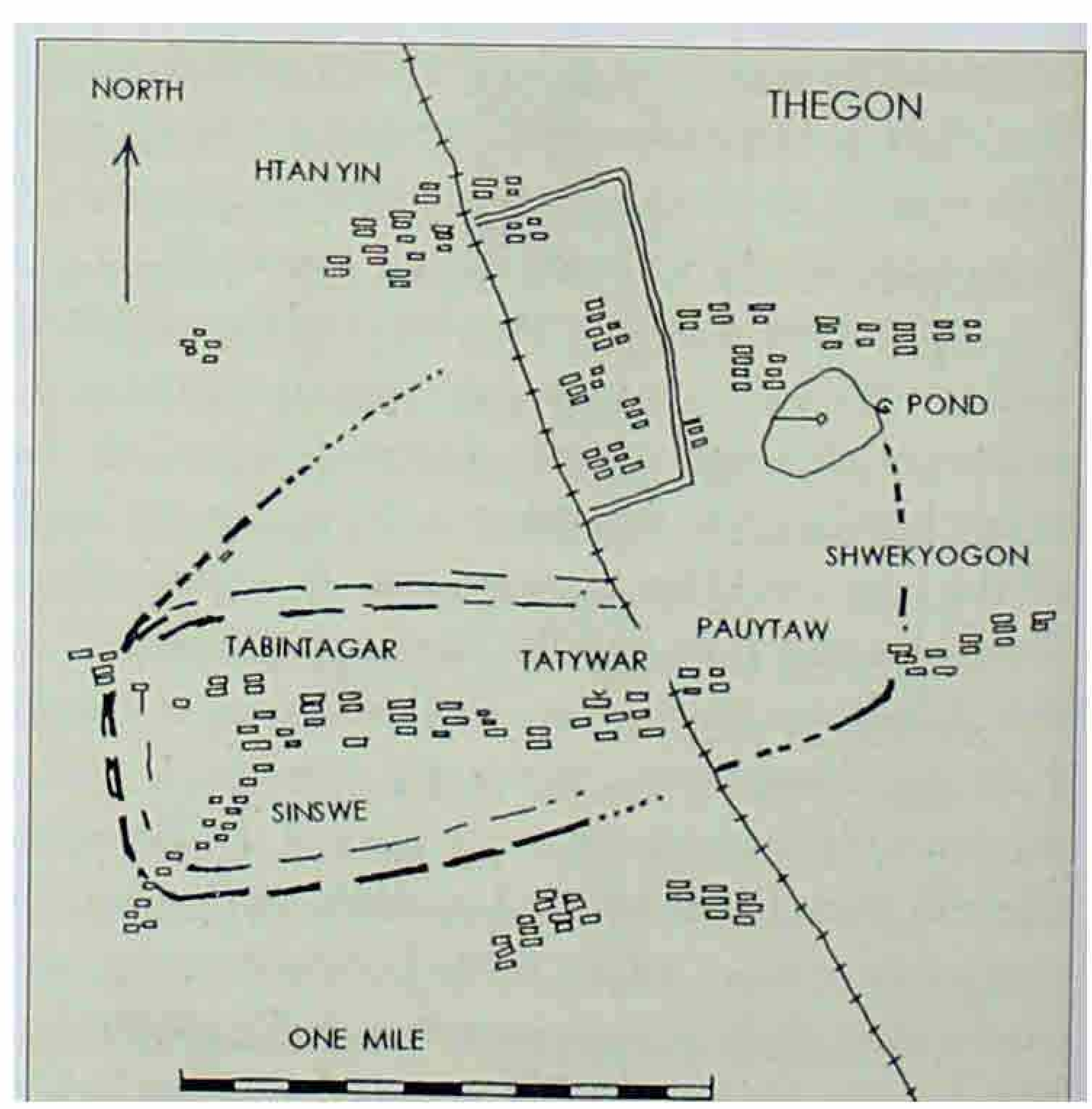
Other royal names are seen on an inscribed silver-gilt cylindrical reliquary casket (66 cm high) that was part of finds in 1926 at the mound of a villager named Khin Ba (Khin Ba Gon) in the village of Kalagangon. Investigation by Duroiselle followed finds of the Vishnu sculptures we noted above, as well as a Shiva *linga* (35 cm). Under the remains of a brick *stupa*, a relic chamber measuring one cubic metre was found. A stone slab (190 x 137.5 x 15 cm) covering the chamber depicts a cylindrical *stupa* with a rectangular *harmika*, five-tiered *chattravali*, and streamers. The sun and moon were on the top corners, and niches with images of the five Buddhas of this era or *bhadrakalpa* are along the base of the *stupa*. The style of the *stupa* has been dated to the late 5th century.[137] A second, similar slab was found nearby.[138]

In the centre of the chamber was the gilded silver reliquary casket with a flat cover supporting the trunk of a *Bodhi* tree. The branches and leaves of the tree were found on the floor of the relic chamber. On the sides of the casket are images in high relief of the four Buddhas of this era in an apparently unusual order: Konagamana, Kakusandha, Kassapa, Gotama.[139] Each image of the Buddha is flanked by smaller figures of disciples of Gotama: Kassapa, Moggallana, Sariputta, Ananda. A spiky nimbus surrounds the heads of the images of the Buddha. The names of the different Buddhas are inscribed in Pyu and Pali on the upper rim of the casket, while at the bottom are the names of the disciples and a later dedicatory inscription in Pyu with the Sanskrit names of the donors, *Sri Prabhu Varman* and *Sri Prabhu Devi*.[140]

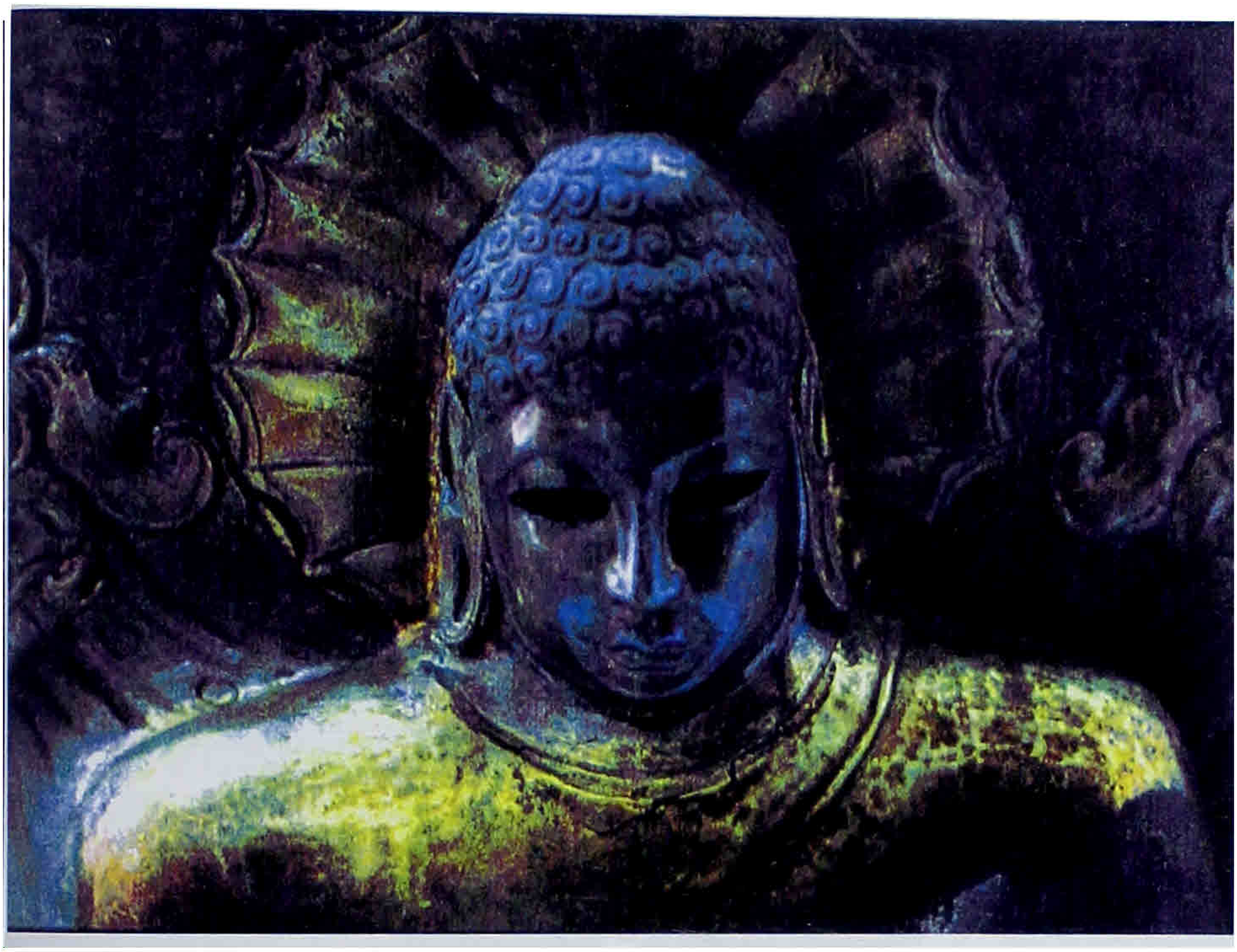
From the white *stupa* on the northeast corner of the palace enclosure, the Bawbawgyi - far to the south - can be venerated. *(Photo by Hla Tun Pru)*



Sriksetra and Kalaganon village where the relic chamber with the silver reliquary was found. On lower left of photo, the southeast walls and moats of Sriksetra are seen. Kalaganon village is to the right of the walls just north of the modern road, the straight northwest to southeast white line cutting across the photo.
(Photo 1141 EA25 01 March 44 F36, William-Hunt Collection, SOAS)



Located south of the larger walled site of Sriksetra, Thegon may have acted as a fortress to Sriksetra. Win Maung (Tampawaddy) has identified a similar arrangement at all the walled sites of Upper Myanmar. *(After Aung Myint)*

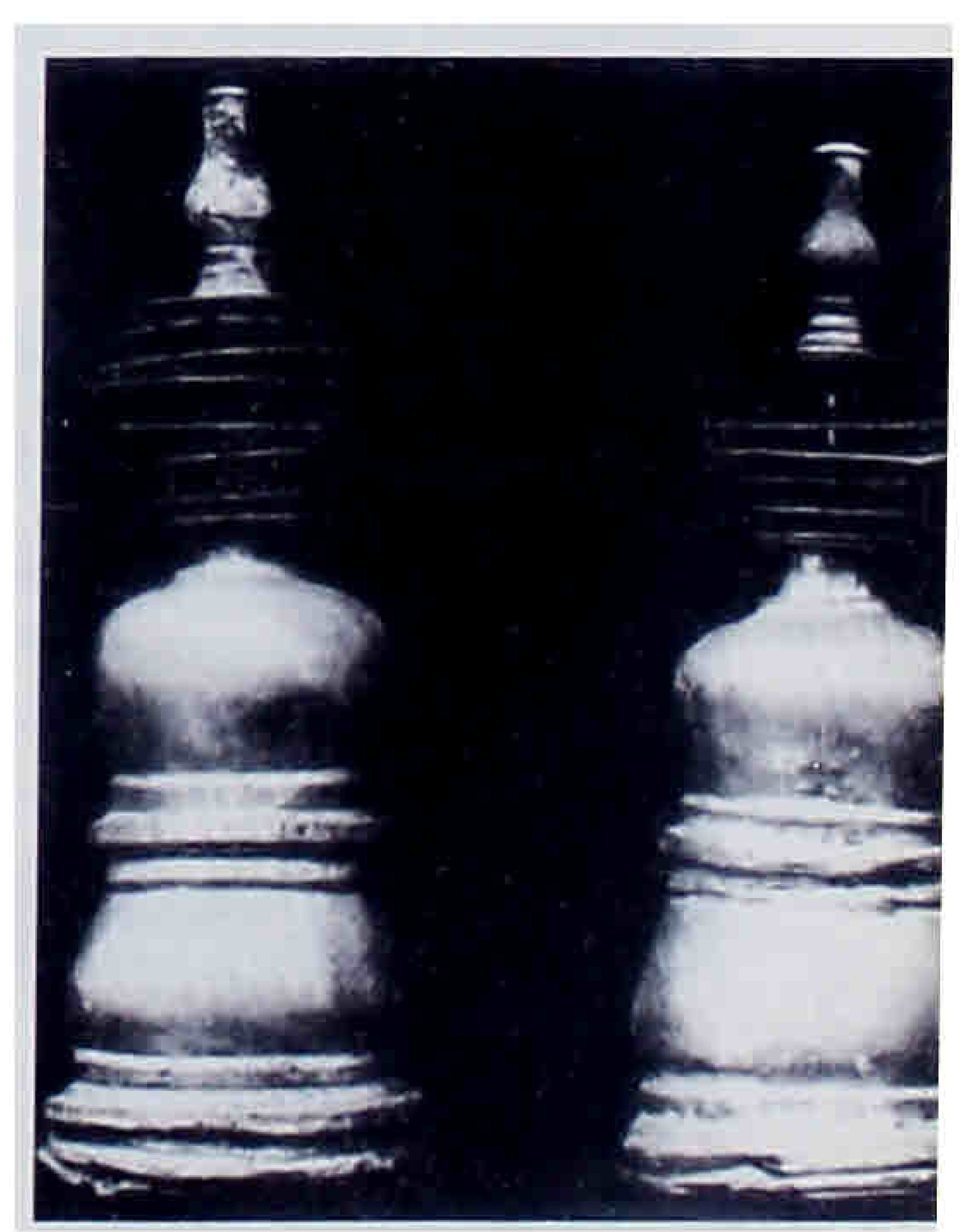


The images on the casket are sometimes dated to the 5th century based on the palaeography of several gold plates described below, from the same horde inscribed with excerpts from Pali texts.[141] Recent scholarship suggests that two texts describing the wisdom of the Buddha, missing from the gold leaves, were written in abbreviated form between the names of the Buddhas of this era on the upper rim of the casket.[142] Brown has questioned this dating, linking the slim torso of the image and the full snout-like trunk of the *makara* figures flanking the throne-back to Dvaravati pieces such as those from Nakhon Pathom of the 7th to 8th century.[143] Brown's query is perhaps supported in Falk's analysis of the text excerpts inscribed between the names of the past Buddhas on the upper rim of the casket, for he places them later than the 5th to 6th century AD preferred by Stargardt and another palaeographer, Sander, working on the epigraphy.[144]

The significance of the deposit is shown by the offerings, many gold and silver, found in the relic chamber.[145] Among the metal finds were silver lotuses with petals, plates of gold and silver, silver boats, gold and silver butterflies, a tiny silver 'chinlon' ball, 33 small gold and silver bells, and a ball of greyish earth covered with small beads of gold and silver. The four Buddhas of this era are seen on a hollow cubic silver *stupa* and there are individual images of the seated Buddha in gold and in silver, two hollow silver *stupas* (23 cm) and a gold plate with a seated Buddha on a lotus, 7.5 cm in diameter.

Detail of the Buddha image on gilded silver casket, Sriksetra.
(National Museum Yangon)

Silver tiered stupikas (23.5 cm); Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 30e)



Front view of four sided hollow silver *stupa* with images of the four Buddhas on sides, Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 30a)

Angled-view of the four-sided container, showing minor variations in the images.

Seated silver image of the Buddha, right hand raised in *vitarka mudra*, Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 30d)

Seated gold image (9.4 cm) of the Buddha with *makara* reredos and halo, *dhyani mudra*, Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 30c)

Another seated image of the Buddha (16.25 cm) is gold, with a silver stand (8.12 cm). Fragments of a green glass image of the Buddha were found, the head 5 cm high. There were a number of stone beads in the Khin Ba trove, including jadeite elephants and a chalcedony tortoise.[146] Other pieces included an image of Avalokitesvara (20 cm) standing in a lightly flexed posture, and embossed silver plates (18.65 cm). These depict guardian figures, one hand on hip with full face and legs clothed in close-fitting patterned trousers, their faces reminiscent of Dvaravati pieces.

Gold leaves

A number of gold plate manuscripts have been found in the region of Sriksetra, all inscribed with extracts from the Pali canon. Two gold plates were found at Maunggan, 11.5 km south of walls. Each was inscribed with three lines of Pali, the writing edited by U Tun Nyein (1898) and later by Finot (1912, 1913). The text, dated to the 6th century AD, was identified as the *Ye Dhamma* stanza and other verses. A single gold plate was found at the village of Kyundawzu, within the walls of Sriksetra, in 1929. This was inscribed with two lines of Pali, the text from one of the dialogues of the Buddha, the same as one of the eight excerpts found on the 20 gold plates found with the Khin Ba Gon treasure in 1926-7. Both the Maunggan and Kyundawzu plates have been used by Stargardt to re-assess the Khin Ba Gon plates.[147] Also used in her study were two inscribed stones found on a terrace of the Bawbawgyi stupa identified by Finot (1912) as Pali texts from the *Abhidhamma Vibhanga*, dated to the 6th century.[148]

Seated image of the Buddha on gold plaque (8 cm), flanked by regalia, Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 30f)

Twenty numbered gold leaves were recovered from Khin Ba Gon trove, most inscribed with three lines of text in of Pali. The inscribed texts are eight excerpts from all three main canonical texts, including the chain of causation, praises of the Buddha, and qualities of Enlightenment. U Lu Pe Win, then Superintendent of the Archaeological Survey of Burma, first published the texts in the *Report of the Superintendent of Archaeology* for the year 1938-39. The script is similar to those of 5th century AD Pallava Copper Plate Grants, leading to a provisional mid-to-late 5th century date. As we saw above, the texts inscribed on the gold plates may link to the inscription on the upper rim of the silver reliquary casket from the same relic chamber.[149] The leaves (16.5 x 3.1 cm each) were contained within two gold covers. The covers and leaves each had two holes, through which a thick gold wire passed to bind up the manuscript. When found, the wire was fastened to the covers with sealing wax and small glass beads.[150]

The wealth of finds at Sriksetra is striking, with the mixed epigraphic evidence best left dated broadly between the 5th to the 8th century AD. This runs counter to our belief that the area was inhabited in much earlier periods, but at present rests comfortably with the bulk of the stylistic evidence from the site. At present, it is only from Halin that we have enough data to be able to describe it in both pre- and proto-historic contexts.

Seated gold image of the Buddha in *dhyani mudra* with pedestal throne, *makara* reredos or *takeh*, (total ht 24.8 cm), Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 31a)

Standing guardian or *dvarapala* holding club or mace in right hand; embossed on silver plaque, Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 32d)

Right: Standing *dvarapala* holding club or mace in left hand; wearing close-fitting patterned trousers; embossed on silver plaque, Khin Ba Gon.
(After ASI 1927, Luce 1980 Pl. 32b)

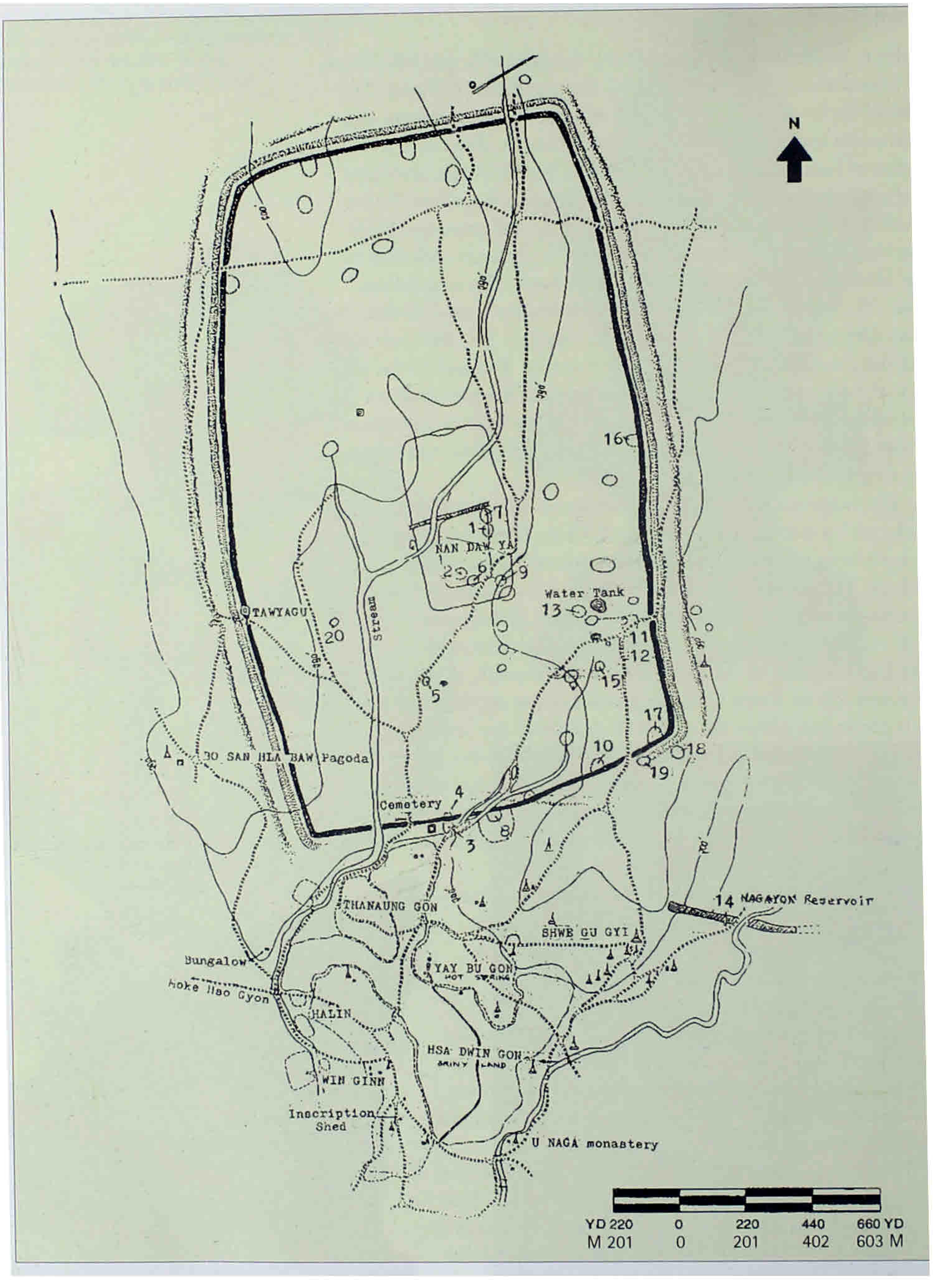
Halin

Halin is located midway between the Ayeyarwaddy and Mu Rivers, 17 km southeast of Shwebo and 9.7 km northeast of Wetlet. The rainfall in this area is less than 750 mm per annum, with current cultivation including groundnuts and tomatoes. The site is in a region of heavy clay soils and marsh but benefits from abundant surface evaporation of salt, natural lakes and hot springs. To the south is the Halin-*in*, a large area of swamp, tall grass and reeds reaching down to Wetlet. The city forms a rectangle, oriented to the northwest following the slope of the land. This orientation, some 15 degrees west of magnetic north has been used to date the construction of the walls to the second century BC, although it also mirrors the orientation of local watercourses. The wall of the inner citadel-palace in the south central part of the site also makes a north-south rectangle. An old streambed runs from north to south across the city enclosure, although this was probably not present in its current form during the Pyu period.

The outer walls of Halin measure some 3.2 km long and 1.6 km wide, with a circumference of *circa* 9.5 km. The corners are thought to have been curved based on excavation of the southeast corner (HL18) where the curved wall was some 4.9 m thick with an exterior rampart, and an interior sentry box demarcated.[151] In area, Halin is second to Sriksetra, being some 63.6 percent of its size.[152] The highest point of the outer wall is on the north, at an elevation of about 120 m. From here, the ground slopes south across the 105 m contour line within the site to 90 m around the hot springs, salt fields and the Nagayon-*in* south and southeast of the wall.[153] The 6.4 km bund (HL14) across the Nagayon tank is still in use and in recent years streambeds in the area around the tank have been dug up for gold-washing, while potsherds and pieces of bones have been discarded on the banks. The Nagayon bund is oriented east to west, and consists of two walls *circa* 2.7-3.9 m wide, separated by some 23.4 m of earth fill. The Shwegugyi pagoda is located just south of the Nagayon tank and bund, with the villages of Yebugon, Htanaunggon and the 17 hamlets of Halingyi just to the west. The BoNaga (Nyaungkobin) Monastery, Konya hamlet is to the south of the tank, where the abbot for many years preserved antiquities. A number of pagodas in this area contained large bricks in the base or surrounding grounds.[154]

The form of the citadel-palace is less clear than that of Beikthano or Sriksetra, but was described by Taw Sein Ko as early as 1904, along with the tomb of a monk near to the west wall.[155] In the 1960s, several walls around the citadel-palace were unearthed (HK1, 2, 6, 7). All were built directly on the ground, without a foundation. Around the walls a number of beads, coins, stone and iron pieces, potsherds, ash and human and animal bones were recovered.[156] To the southeast of the citadel-palace

Lotus-inscribed pottery from Halin. *(National Museum, Yangon)*



Halin has a long rectangular shape reflecting the local topography and hydrology. The stream running down the middle of the site is thought to have changed greatly since the walls were constructed. A large number of Bronze-iron Age artefacts typical of the Chindwin and Samon have been excavated south of the city walls. Numbers indicate excavated sites with additional mounds (HL21-HL25) excavated since 1998 near the north wall and on the south near Shwe Gu Gyi stupa.
(After Myint Aung 1970)

area a large rectangular hall (HL9) was excavated in 1965 and has provided two of the few radiocarbon dates for the site. The building appears to have been levelled in a fire, with some 7.5 cm of ash, charcoal and charred wood covering the floor surface. The structure had a brick platform (11.4 x 36 m) with traces of 84 wooden pillars, each about 304 cm in circumference, set out in four parallel rows. During excavations, remains of 58 burnt pot ends were found and Aung Thaw suggested that it served as an assembly hall, similar to Beikthano (KKG9).[157] Urns were recovered from both inside and outside the building while traces of plaster were found on the inside where the floor was covered with a lime and sand mortar layer, some 2.5 cm thick. No entrance to the building could be detected, and like the palace-citadel, the walls were built directly on the ground.

Halin walls and dating

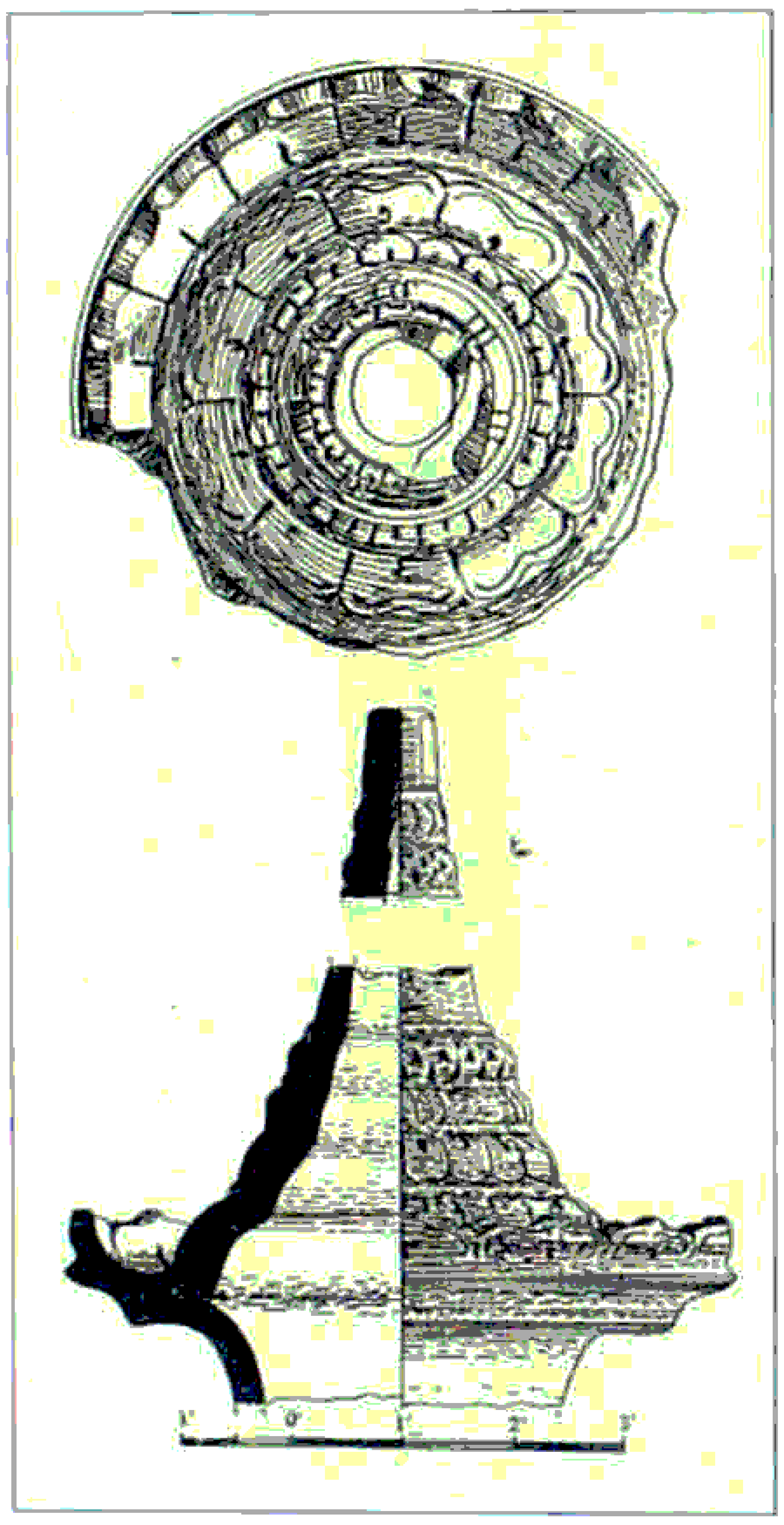
Gates

The gates at Halin are longer and larger than any of the other Pyu sites. On the southern wall, for example, passageway at HK10 was 5.18 m, half a metre wider than KKG13 (4.5 m), the north gate at Beikthano. However, while the KKG13 arms were 2 m wide and 26 m on the west and 24 m on the east, the HK10 arms were 5 m thick and 82 m on the west and 77 m on the east. These proportions are roughly similar to those seen at Sriksetra, where the Shwedaga gate on the northwest had arms about 68 m in length, 4.5 m wide with a passageway about 5.18 m wide.[158] Two other gates have been excavated, HL11 on the east near the south corner and in 1998, another gate was documented on the northwest (HL21) with further two brick structures just inside the northwest wall (HL22 and HL23).[159]

Southeast gate, Halin. While overgrown today, the Halin gates are the largest among the Upper Myanmar walled sites.

A full comparative study of the walls and gates is needed, but it may be that the wall seen today dates to a 9th century period of political consolidation and religious transformation in Yunnan. This era saw the establishment of Tibeto-Burman rule with Nanchao and its successor, the Tali kingdom maintaining power until the invasions of the Mongol Kublai Khan in the mid-13th century AD.[160] Halin at this time was either been allied with or subject to Nanchao around the Erhai Lake some 500 km to the north.

Excavations at Halin have been undertaken since the early 20th century, but finds of bronze and bronze-iron material south of the city wall has been discovered only in the last 15 years. Nonetheless, the profile now in place is significant with Halin highlighting the long-term role of the Upper Ayeyarwaddy in relation to the trading interests of both Yunnan and South Asia.

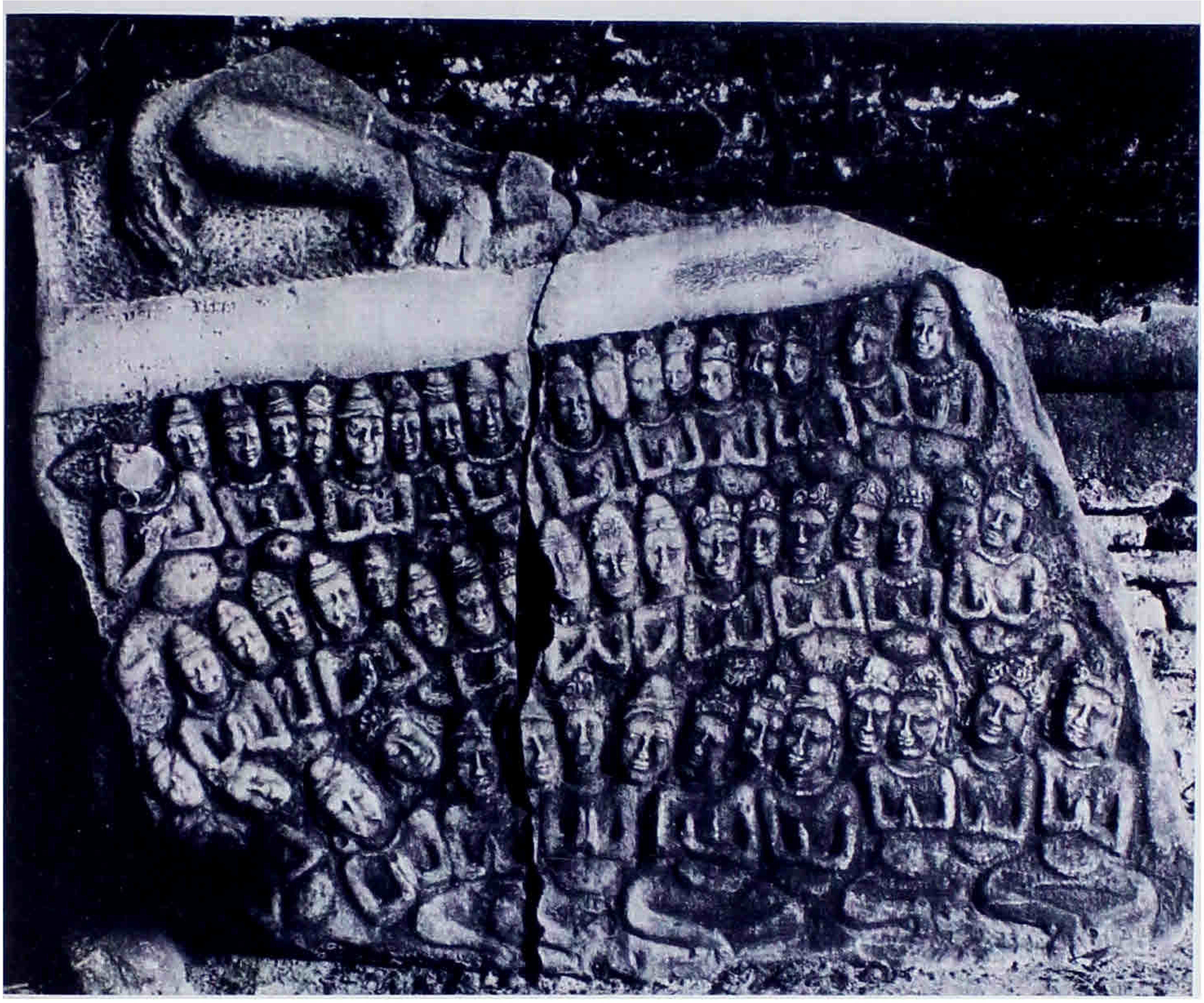


Pot from Halin with *stupa*-shaped lid. *(After Myint Aung)*

Inscriptions

Halin radiocarbon dates document habitation between 60-870 AD although there is good evidence for occupation well before and after this. Over 30 years ago, Myint Aung reported inhumation burials at several sites at Halin, as well as polished stone tools and ring stones. There are also several Pyu inscriptions from Halin that include royal names. These are found on stone slabs, not stone urns as at Sriksetra, although there are some links in the use of motifs at Sriksetra. For example, at the top of one slab, a sun and crescent moon were carved, similar to motifs seen on the relic chamber slab from Sriksetra. All are written in the elongated script seen on the Sriksetra stone urns rather than the more rounded script of the Sriksetra gold plates. No dates are on the Halin inscriptions with the writing put at *circa* 4th to 9th century AD, thus fitting the radiocarbon span.

One of these is Pyu in a South Indian script dated to the 8th to 9th century AD, found near the Nagayon tank. This refers to Queen Candradevi (Jatradevi) and King Sri Trivigrama (Trivikrama), possibly the 'three steps' of Vishnu.[162] This queen is may be mentioned again on a fragment reportedly found within the walls, with the king's name recurring on a large horseshoe-shaped stele (210 x 132 x 21 cm) from the northeast part of the site.[163] Writing on another slab found by Taw Sein Ko in 1904 records the burial of King Ruba's bones and that he was the son of Lord Davi-ni-mli and grandson of N-ga Kno. This has been dated to the 4th century AD and possibly earlier.[164] Two large fragments have long been known, broken at the top leaving the feet and right hand of a figure of a *Bodhisattva* or the future Buddha. An eight-line Pyu inscription without any interlinear Brahmi was carved on the middle of the stele, underneath the large image. This mentions another royal figure, Sri Jatrajiku, perhaps the name of a queen. On the bottom part of the slab are three rows of 53 devotees in a posture of veneration, some with head turned upwards, others facing forward. Some figures have long ears, others wear earrings and necklaces. The bun-like top-knot of certain figures in the lower



Broken stele with *Bodhisattva* and adorants, Halin. The broad band across the middle of the stele bears the Pyu inscription discussed in the text.

tier closely resembles one identified as Nanchao king on a 10th century AD hand-scroll of the dedication of an image of Avaloketisvara.[165] Here, the Nanchao king with his hair gathered on top and wearing a simple collar-like necklace is dressed much as the figures on the stele.[166]

Two of the three sites where radiocarbon dates were obtained are on the south, from the HL10 and HL17 gates. One date was also taken from HL9 (NZ894), an 11.4 x 36 m assembly hall near the palace-citadel in the midsection of the walled area. The date came from a charred wooden post 1.07 metres below ground level that calibrates to 560-780 AD (1370±59). The second sample (NZ895) was from charcoal as well, taken from the HL10 gate, 377 m west from the southeast corner. The date was 1810±60, calibrated to 70-390 AD. The third sample was from the HL17 gate, north from the southeast corner. The date (NZ896) from HL17 was 1740±60 calibrated to 120-430 AD. A collective burial 86 cm below ground level of about 40 skeletons and a number of pots were also excavated from the passageway of the gate.[167]

Two dates (NZ899 and NZ897) obtained from fragments of these bones were submitted to the laboratory in 1967 but not published by Myint Aung. Recent recalculation by the Rafter Radiocarbon Laboratory, New Zealand, these gave results of

1403±98 BP and 300±58 BP calibrated to 420-780 AD and 1440-1640 AD – the second being considered a result of atmospheric contamination.[168] These dates range from a possible late 1st century AD to the 9th century, in line with Myint Aung's conclusion that the dates demonstrated occupation at Halin during the 2nd to 9th century AD. The earlier centuries in this spread are supplemented by pottery design, building plans and inscriptions. For instance, Myint Aung identified rouletted pottery as similar to that of Arikamedu and building plans like those of Nagarjunakonda, dating these to the 2nd to 4th century AD. Finally, a stone seal is dated to the 4th to 9th century AD and a potsherd from the east gate (HL11) to 1050 AD.[169]

There is also good evidence of its continued occupation in the Bagan and subsequent periods.[170] For example, the remains of a Bagan period brick monastery (HL19) are located just outside the southeast corner of the city wall. Myint Aung recorded stucco heads and torsos, as well as a number of 1.5 m megaliths we noted earlier at HL22 north of the palace enclosure.[171] Myint Aung collated a number of references to later donations at Halin, emphasising that the site needed to be understood not only in the context of Pyu occupation but for at least a thousand years after this period.[172] These include:

- An inscription dated to 1340 AD recording donation of two slaves, three bullocks and plots of land to a *Zeidi* at Halin.
- A 1768 AD inscription dedicating an ordination hall by followers of the Ekamsikas or 'one shoulder' sect. Three inscriptions re-copied for Bowdawpaya's collection, brought to Amarapura in 1785 AD.
- Inscribed brass bells donated to Halin in 1798 AD, including one given by an attendant of the future King Bagyidaw and referring to amicable relations with surrounding countries.

Inscriptions from Halin span more than 1,500 years, from *circa* the 4th to the late 18th century AD. Parts were excavated in 1905, then by Myint Aung in 1963-1967 with further excavations by the Department of Archaeology in 1998 and 2005.[173] The most recent excavations were to document the prehistory of the site, and Myint Aung added a good deal of information on later occupation at Halin. For the most part, however, the aim was comparison to Beikthano and Sriksetra in a Pyu context.

Local resources: salt, cotton, silver and gold

In its location – a table land, north of several lakes or *in-gyi* and between parallel streams – Halin is like Sriksetra. The walled area (629 hectares) is close of that of Maingmaw (625 hectares), smaller than Beikthano (859 hectares) and Sriksetra (1,452 hectares).[174] The area is arid today, and a number of the water resources that can be seen today are unlikely to have been the same in the early first millennium AD. For instance, it is doubtful that the stream flowing through the site would have been the same as it is seen today. In addition, the Mu canal coming from the north and draining into

Pottery at Nyaungkobin monastery, south of Halin walled area. *(Photo by Hla Tun Pru)*

the lake on the south was built in the Bagan period and extended in the colonial era.[175] It was not for trade in rice, however, that Halin would have been known but production of local salt as well as beans, paddy, millet and sugarcane crops. Another export was probably cotton, with local production in areas such as Wundwin Township south of Mandalay well known today. The cotton was sold to Nanchao for weaving, with salt one of the products having currency at this time.[176] The Halin area is also known for its blacksmiths, goldsmiths and a local pottery glaze produced from the dross (*khyaw*) of silver ore obtained from the Shan State.[177] Even in recent years, there has been extensive local panning for gold in stream beds around the 6.436 km long Nagayon bund and tank on the southeast corner of the site.[178]

Halin has many of the same features found at Beikthano, Sriksetra and Maingmaw. The most typical are massive brick walls and gates, abundant pottery including urns, mixed inhumation and urn burials, silver coins, beads and Pyu inscriptions. As we noted earlier, the gates at Halin are the longest of any Pyu site, and at present, it is only at Halin that a number of skeletal remains (secondary burial) has been recorded in a gateway. Although some of the Halin urns are distinct, there is a greater range of urn types at Sriksetra and a greater concentration at Beikthano. However, most recent work on the urns has been devoted to developing shape groups rather than an overall comparative study.

This type of work has been undertaken for coins, but the portability of these, the lack of information on provenance, and varying sources have produced different conclusions. This can be seen, for example, in the case of silver coins bearing a rising sun on one side and the *Srivatsa* on the other. Coins with the same pairing of patterns have been found in Lower Myanmar, Central Thailand and Oc Eo (Funan) in southern Vietnam, prompting various attempts to map out trade routes. Broadly, these all make sense and give us some sense of the high level of trade that existed prior to the 9th or 10th century when the coins die out. However, problems arise in more specific conclusions. Based on the number of *Srivatsa*-rising sun coins found at different sites, for example, San Shwe has concluded that Funan was the centre of production, while Mahlo and Win Maung advocate Upper Myanmar, possibly Halin.[179] The quantity of silver coins associated with these sites is indeed notable, and in the case of Halin in particular, it is proximity to silver mines would suggest a role in manufacture and trade of coins. Given their portability and susceptibility to later use and manufacture, however, it seems wise to note such hypotheses, but with caution and look to what light they may shed on the site location in relation to local resources and trade. It is with this in mind that we look very briefly at the location and land alteration at Tagaung and Maingmaw, located to the north and south respectively of Halin.

Tagaung

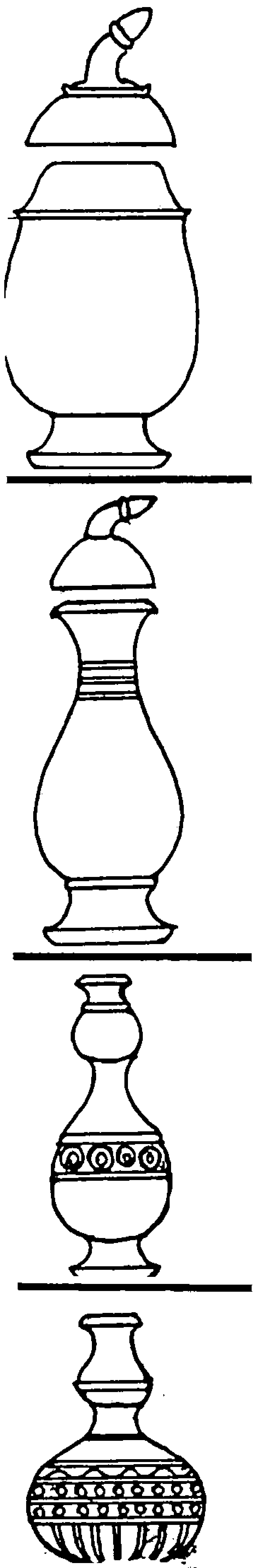
Tagaung is located 150 km north of Halin, the northernmost of the first millennium AD walled sites of Upper Myanmar. While the site was noted in the early 20th century, the Department of Archaeology began excavation in 1967-1968, followed by further work in 1992-1993. These all yielded artefacts dated to the Bagan period or later, with the site having been a guard post of the 11th century AD King Anawrahta. Excavations since 1998, however, have recorded stone and bronze implements as well as a range of terracottas stylistically datable to the early to mid-first millennium AD.

Tagaung is south of the junction of the Ayeyarwaddy and Shweli Rivers. The Ayeyarwaddy meant goods could be shipped south, while the Shweli offered access to Yunnan. Tagaung's hydrology is distinct from that of Halin and the Samon valley south of Mandalay, where the Myit Nge (Dhotawaddy) facilitated contact with Yunnan. The upland Mogok area east of Tagaung was a source of timber and precious gems that complemented the port setting of Tagaung. Multiple seasonal lakes to the east were used for a range of crops, as well as supporting game birds, deer and other faunal resources

Three curved walls surround the old city, with the central Wall 2 area (62 hectares) known as Anya Bagan or 'Upper Bagan'. The north Wall 1 (19 hectares) encloses the east and south side of a mound, with a stream on the north and the Ayeyarwaddy on the west. Pots found near the shrine of the tutelary guardian within Wall 1 are similar to those from site TG31 and Hsin Hynat village, described below. Wall 3 (204 hectares) protects the Wall 1 and 2 zones on the east, while the Ayeyarwaddy again forms the west wall.

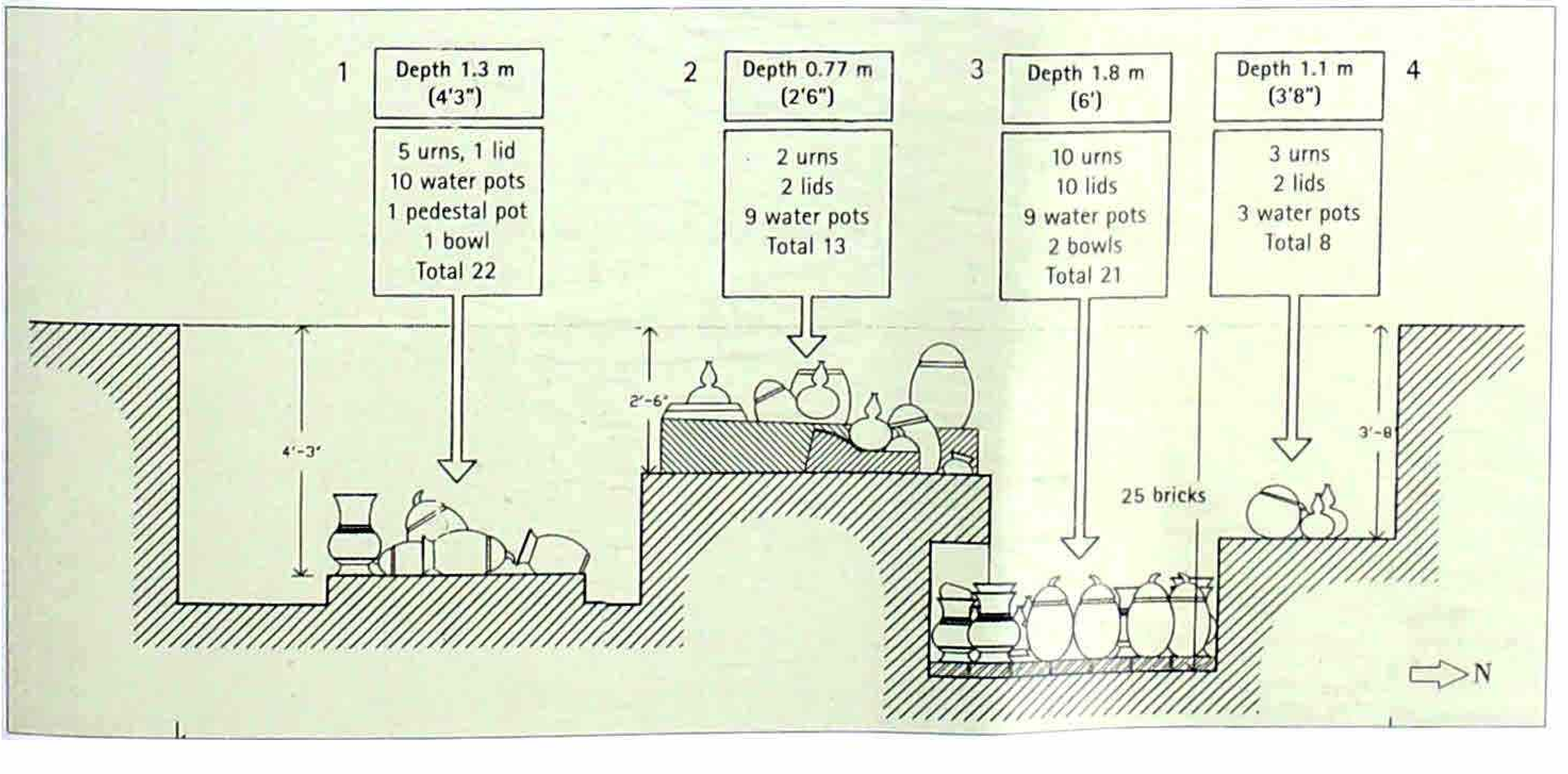
Chronicles state that Tagaung was located west of the Ayeyarwaddy, but this is not the case today. Some scholars hold that the original course of the Ayeyarwaddy at Tagaung indeed was east of the site, but that the river moved west more than 4000 years ago into the streambed of the Meza Chaung along the Minwun range. Additional factors cited to support the existence of an ancient wall on the west include the site's location on a major fault line. There are numerous earthquakes in the area, as well as constant erosion and deposition along the Ayeyarwaddy. Thick, clean sand deposits and Late Paleolithic tools along the 'Old Ayeyarwaddy' east of the site also indicate a major change to the hydrology. Given possible extent of change to the ecology, the usual oval nine-quadrant plan of Upper Myanmar 'Pyu' cities may have existed at Tagaung. However, in a process similar to that seen at Bagan, the west wall could well have been eroded.[180]

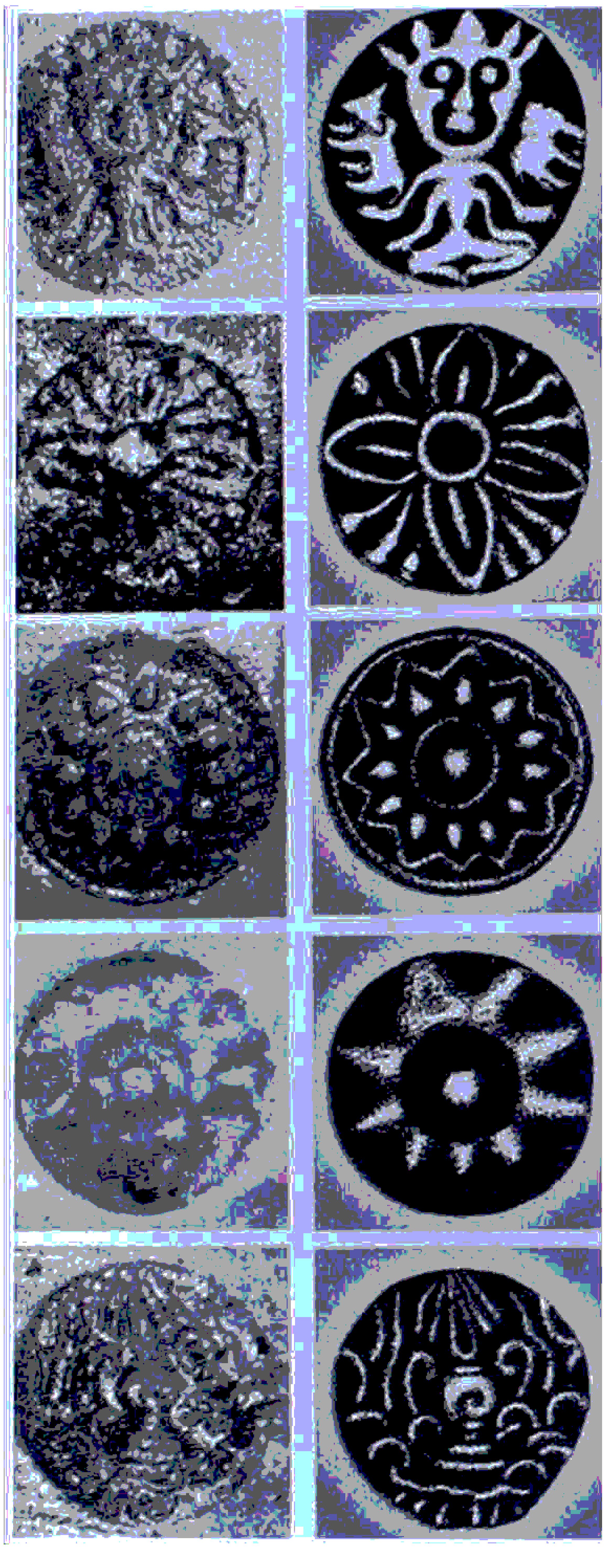
In 2004, excavations along a 6.3 m trench (TG31) were carried out in the compound of the Tagaung High School within Wall 2.



Tagaung pots from TG31 included a number of vessels with rows of parallel stamps on the shoulder. *(After drawings by Win Maung (Tampawaddy))*

TG31 pit, Tagaung with egg-shaped vessel 14 showing blackened surface. Clustering may indicate kinship groups with further excavation at Tagaung in progress. *(Photo Chit San Win)*

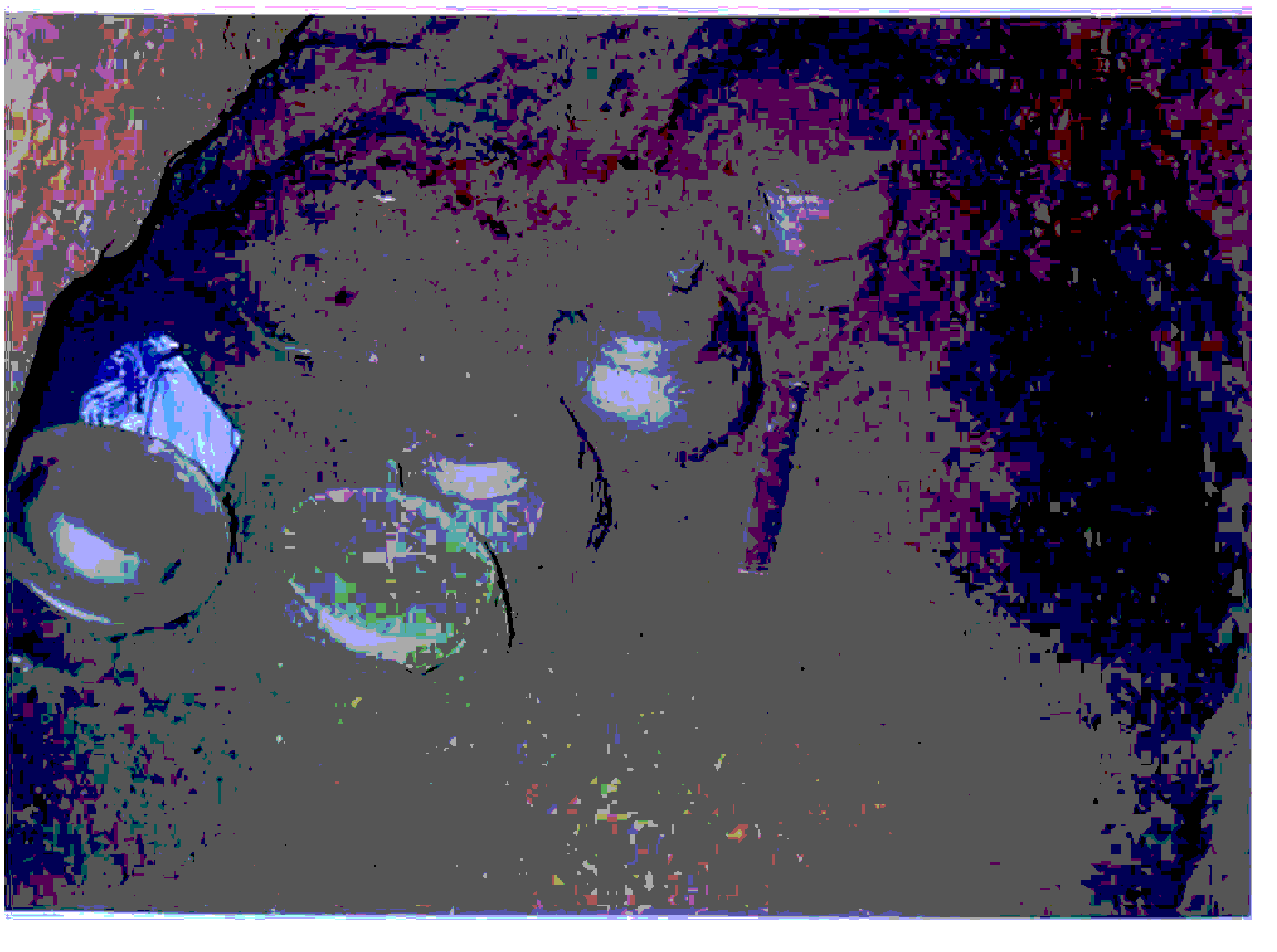




These yielded a number of funerary urns in the four levels of pots at 180 cm, 127.5 cm, 110 cm and 75 cm. The lowest level was set on a brick platform, with 25 bricks having finger-markings. Finger-marked bricks have also been recorded from an octagonal *stupa* (TG22) within Wall 2.[181] A number of the TG31 pots (32-60 cm high) contained fragments of bone and ash, with the bones of one pot forming a complete human skeleton. These were interred in clusters with pedestal, round-bottom pots, and water pots with long slender necks. Some vessels bore one or two horizontal bands of stamped designs. The tallest pieces (60 cm) were of two types, some with a long neck and wide mouth, others flat bottomed with a domed lid. The latter recall jars from Yunnan sites such as Daxingzhen and Aofengshan.[182] A number of other materials were recorded: shells, copper and bronze bells, bracelets, rings, lids, swords and a spoon; iron bracelets, brackets and rivets; a 2.5 cm square gold plate and two 1.1 cm square gold butterflies and silver bracelet-like objects. There were also beads made of terracotta, bone and semi-precious stones.[183]

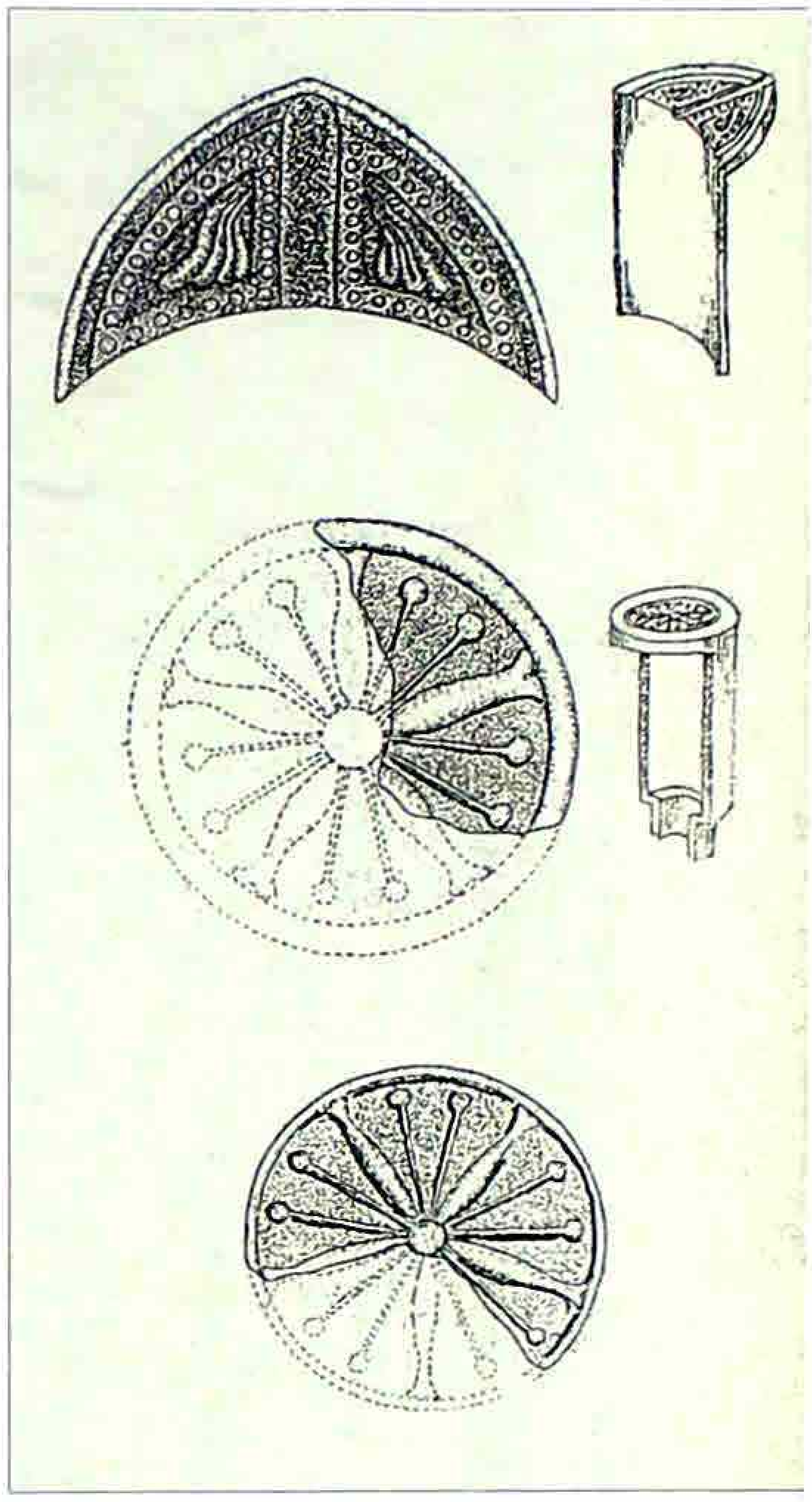
There are a number of villages south of Tagaung such as Hsin Hynat, Padi-phyu and Kyan Hnyat with stone tools, terracotta roof tiles, finger-marked bricks, urns, beads, and bronze and iron tools and iron furnaces. Excavations in 1998 at SNK1 northeast of Hsin Hynat, yielded terracotta roof tiles and round and crescent end-pieces recalling finds in central Vietnam sites such as Go Cam and Tra-kieu, where they are dated to the early centuries AD and linked to Chinese incursions. Pots from Hsin Hynat are also similar to those from TG31. Maingmaw, to which we turn below, also occupied a prime position, for overland trade and rice cultivation but one distinct from Tagaung. As we saw in the previous chapter, the last king of Tagaung fled south to Beinnaka to found the Kharuin of Kyaukse – and it is just above this fertile region that Maingmaw is found.

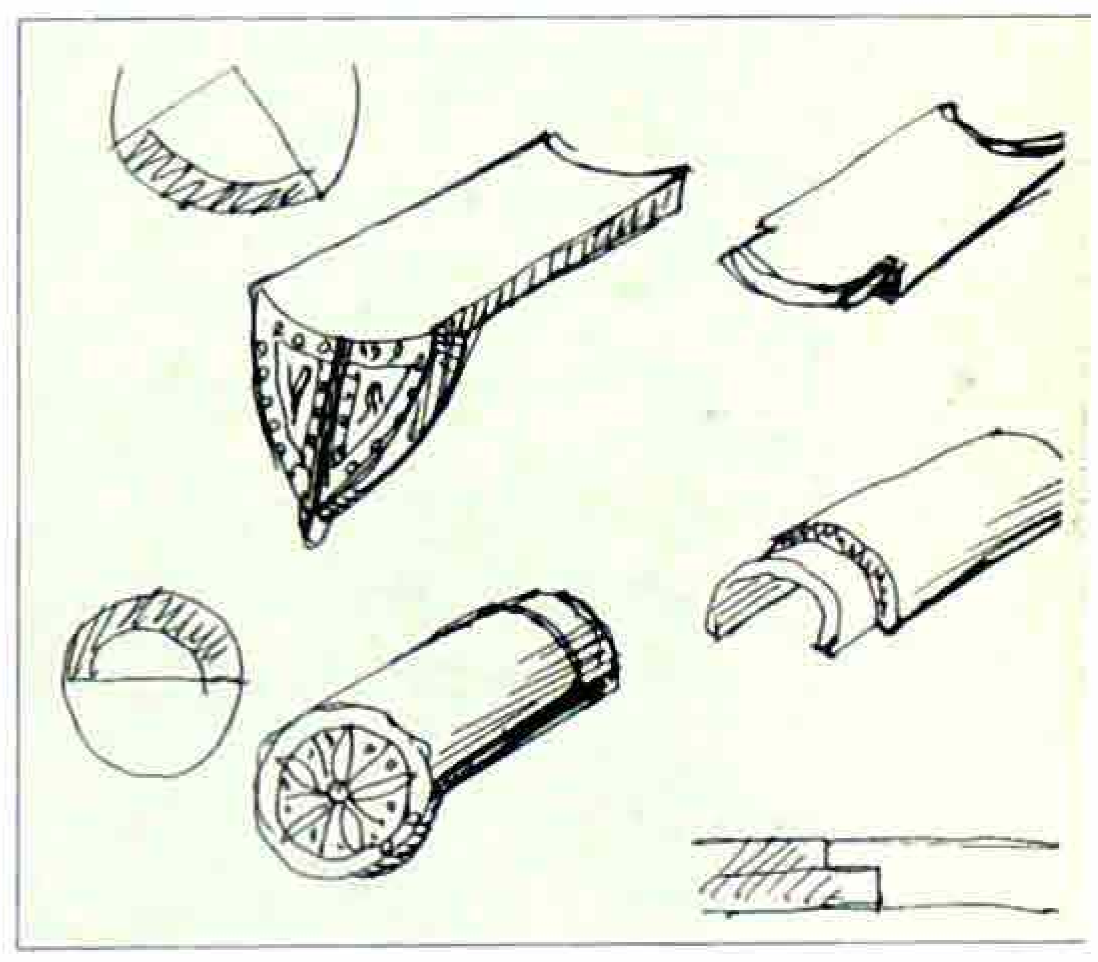
Stamped motfis, Tagaung pottery.
(After drawing by Win Maung (Tampawaddy))



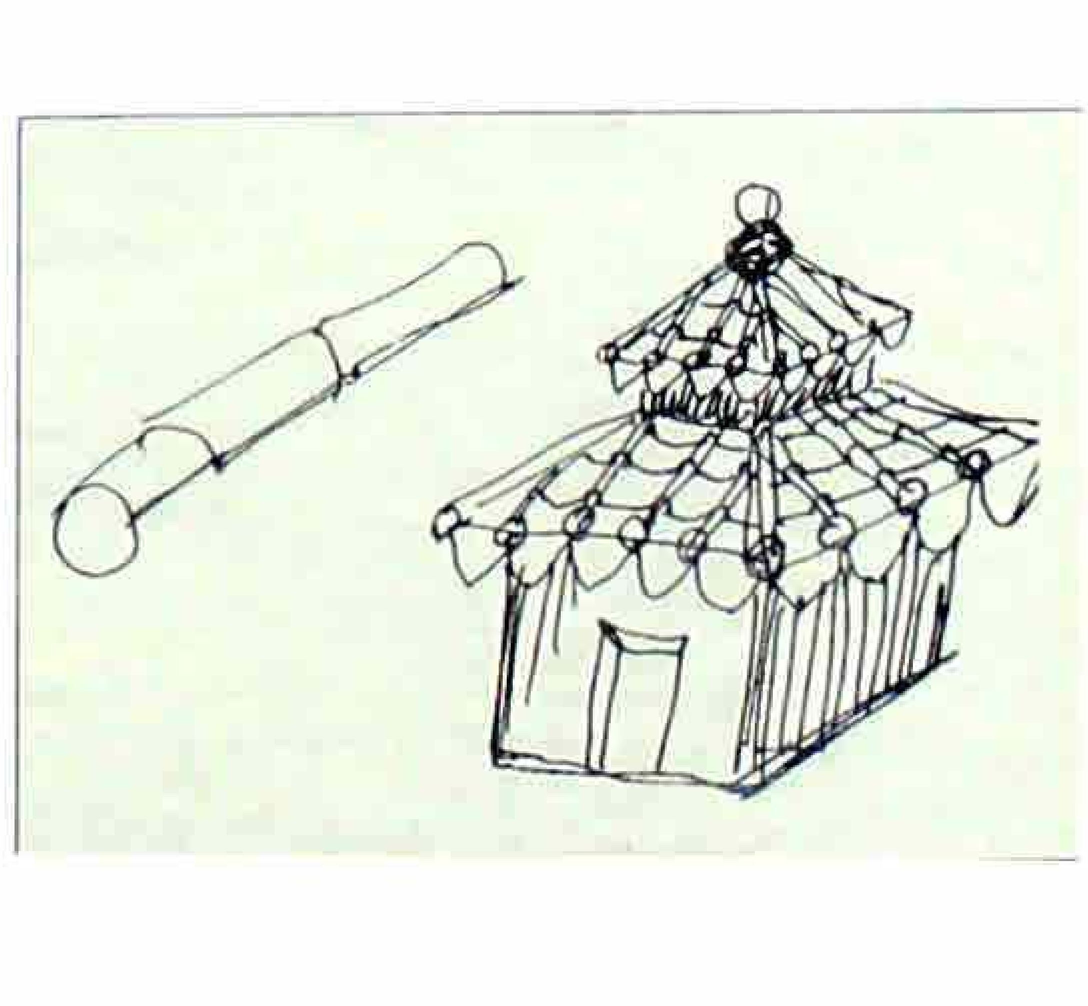
TG31 excavations in progress.
(Photo courtesy Chit San Win)

Tagaung roof tiles. The tiles were probably eave ornaments as shown in the drawing below right. *(Courtesy Chit San Win)*





Tagaung roof tiles. *(After drawings by Win Maung (Tampawaddy))*



Small round votive tablets recovered 1.5 meters below ground level during repairs to Lehmyethna pagoda within the central part of Tagaung ('Anya Bagan'). Many votive tablets attributed to the 11th century AD Bagan King Anawrahta were also recorded from this area. Both the *in situ* recovery of the round tablets and their style indicate dates *circa* 7 to 9th century AD, although some scholars opt for a 'Pyu' label and others for 'Bagan'.

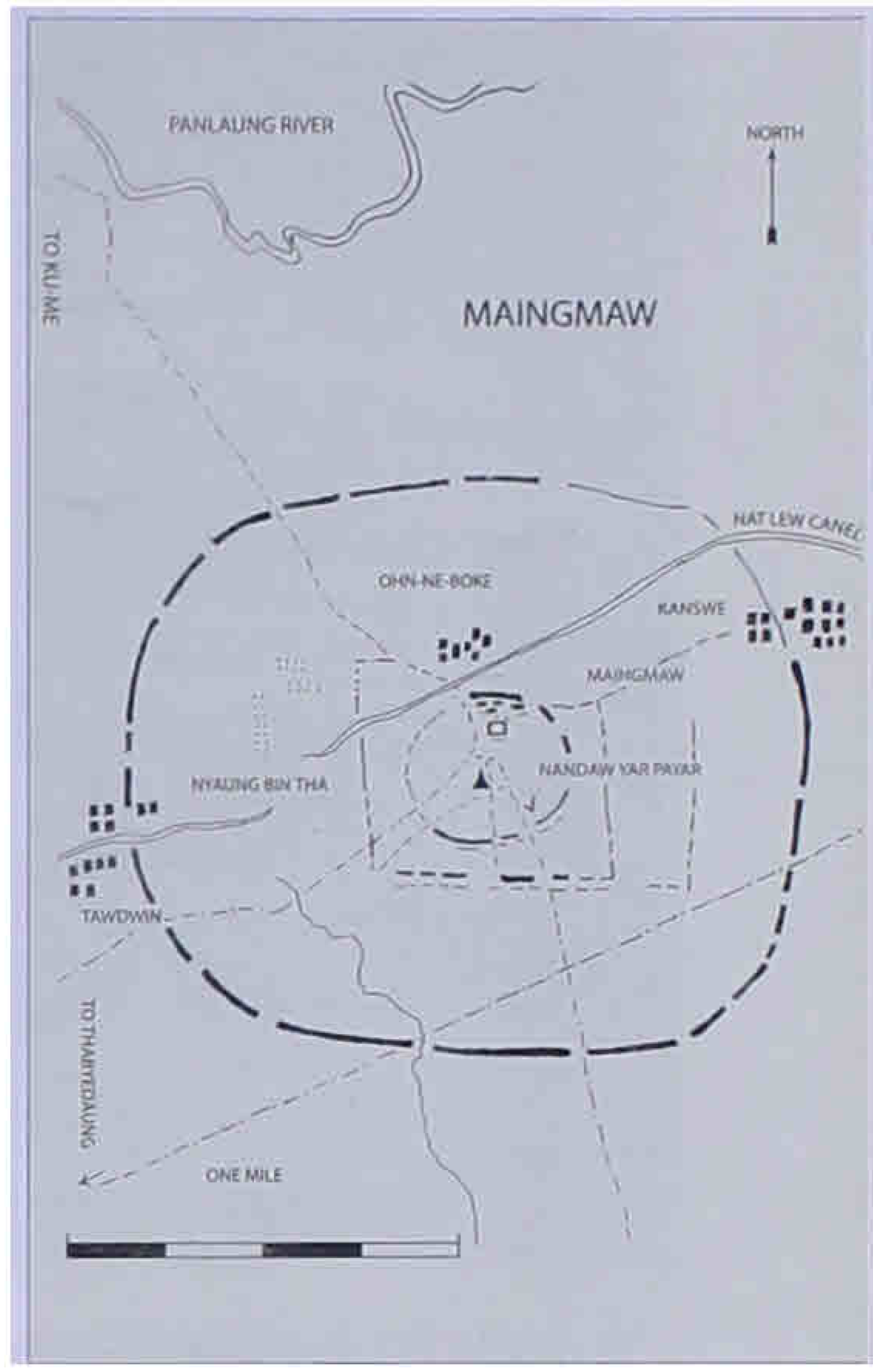
The round tablets (3.5-5.5 cm diameter) all depict a single figure of the Buddha in *Bhumisparsa mudra*. They have been divided into three groups according to the motifs surrounding the image of the Buddha: (1) oval halo with *takeh* or throne back and up to eight *stupas*; (2) filled with the medicinal gamon, an aromatic tuber of the ginger (Kaempferia) family; and (3) with two small *stupas* and enclosing lines, the outer marked by dots.

Maingmaw

Maingmaw, also spelled Mongmao or Mongmai, is located in Myittha Township, Kyaukse District, southeast of Kume, close to a bend in the Panlaung River. To the west is the Samon River with its rich distribution of both bronze-iron sites and also the ricefields that supported Bagan. Maingmaw also had good access to points north such as Muse on the present Chinese border, and may well in the past have served as a trading centre with Yunnan. A later fort, Hlaing Det, has also been documented in the area, one where current cultivation is rapidly overriding the ancient features. The site is often assigned to the 2nd century AD, but it is likely that the walls seen today are the result of several phases of building, and if the bronze-iron finds at nearby Kume are taken into account, the Maingmaw region, like that of Beinnaka, may one day yield a stratigraphy helping us to document the transition to Hindu-Buddhist rule in Upper Myanmar.

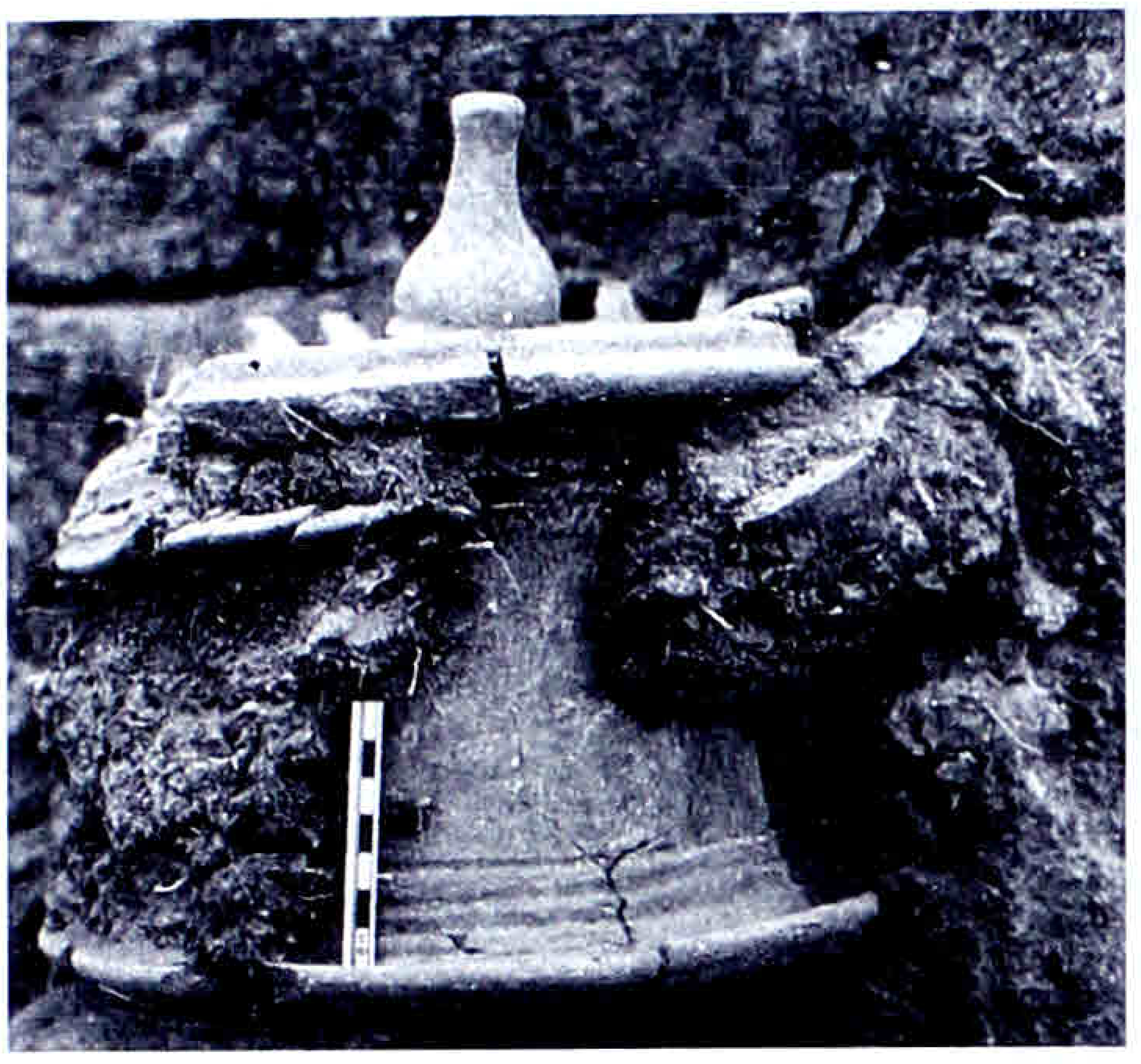
The outer wall of Maingmaw appears on aerial photographs as a slightly flattened circle, 3 km long on the east-west axis and 2.6 km north-south, with a circumference of some 9 km. The circle is crossed by the Natiwt (Nat Dwe) canal (the Nat Hlyeh streambed) but this feature is unlikely to have had its present form when it was built. During survey in 1977 survey when Aung Myint first recorded finger-marked bricks, the outer wall was some 3.5 m high in many places, and while gates were noted, these have not been excavated. Inside the rounded outer wall is a quadrangular wall, estimated to be about 1,080 metres per side, and at the centre is a third rounded wall 750 m in diameter. As the current village of Maingmaw is inside the inner circular enclosure, Aung Myint labelled it Maingmaw. About 5 km to the southwest of is the smaller walled site of Pinle, a cup-shape enclosure, the straight northern side measuring about 625 m in length. Finger-marked bricks have also been found at Pinle, probably a fortress to Maingmaw following the same patterning of smaller satellites surrounding the major walled centres documented at Halin.

A group of pagodas known as Nandawya or 'palace site' is located near the centre of the site, but aerial photographs show no evidence of a palace enclosure or citadel. Only one building has been recorded, a square structure (19.5 x 20 m) with a cylindrical core (10.9 m diameter) and 8.5-metre wide platforms projecting north and south. Surface finds from the site included silver coins, one with *Srivatsa* and *Bhaddapitha* motifs, another with a pairing of *Srivatsa* and Rising Sun designs. Other finds include stone moulds for casting small flower-shaped ornaments, a gold *Makara* armlet and silver bowl with Pyu writing, terracotta and semi-precious stone beads,



Maingmaw occupies a strategic trading location just northeast of the main distribution of Samon bronze-iron sites. Its size is close to that of Halin, with only Sriksetra and Beikthano being larger. *(After Aung Myint)*

Circular structure during excavations at Maingmaw. *(Courtesy Aung Myint)*

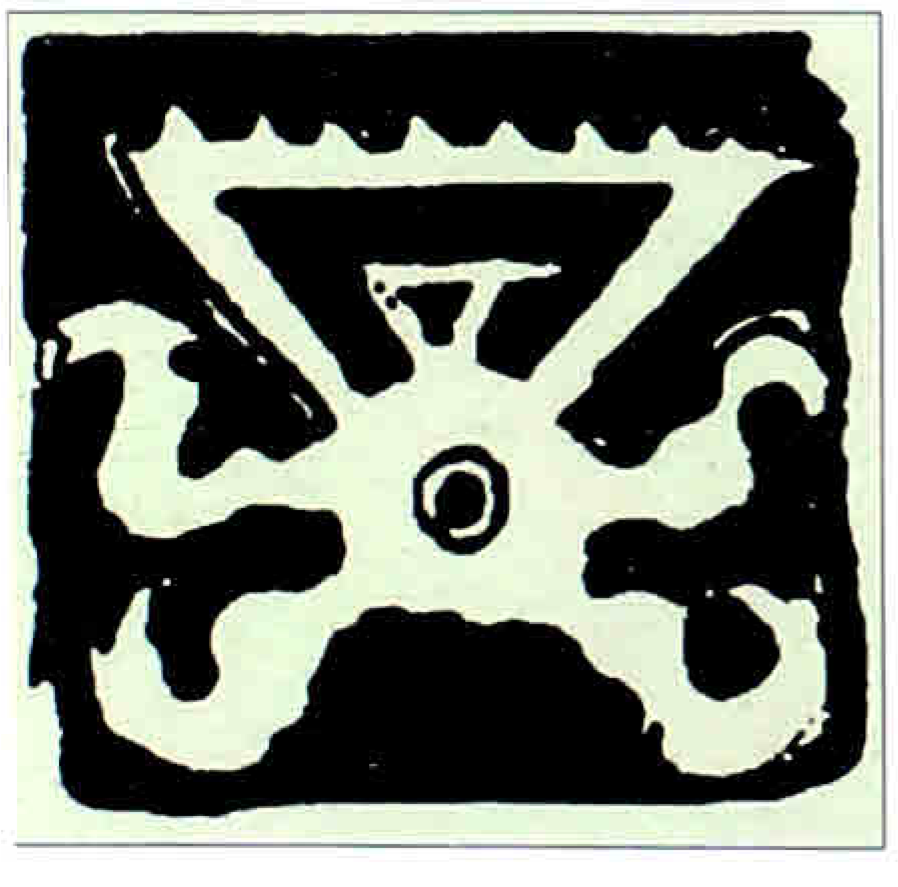


Urn *in situ* during excavations at Maingmaw.
(Courtesy Aung Myint)

Above right: Pot sherd stamped with conch motif, Maingmaw.

urns and point-marked rouletted-type wares. Urns were found outside structures, others outside the city wall, with beads and ash found in the pots. Other finds associated with the burials included miniature pots, and green, reddish orange and white beads. In addition, several lines of Pyu interspersed with interlinear Brahmi script was noted on a stone slab from the site. As well as finger-marked bricks, curved bricks and ornamental bricks were noted One of these bore a figure of a rider on horseback and another a Bhaddapitha motif similar to that found on silver coins. We will return to the man on horseback in the next chapter, for its possible reference to movements of equestrian groups from Yunnan into Upper Myanmar.

As this brief section indicates, the profile of Maingmaw remains incomplete, as is the case with many sites in Upper and Lower Myanmar. Before looking at a few of the Lower Myanmar finds, we briefly compare a sample of the terracotta figures, votive tablets and images of the Buddha from some of these sites. In their similar timeframe, these support our contention of long-term habitation and interchange contributing to the cultures of both these regions tablets.



Bricks with relief figures of *Srivastsa* and horses from Sriksetra and Maingmaw.

Terracottas

A range of small terracotta figures are found in the southern part of the country. The main body is from Kyontu, Waw Township (17.28n x 96.40e) 27 km northeast of Bago on the railway line to Kyaikto. Remnants of the outer wall that once surrounded the ancient site can be seen in ricefields around the pagoda, with abundant finger-marked bricks on the mound. The terracotta plaques, *circa* 50 cm square and 11 cm thick, were photographed *in situ* in the 1930s on the remaining sections of the wall and *stupa* platform.[193] Similar terracottas have been found at Thaton, Winka and Kyaikkatha.[194] While none is an exact match, affinities can be seen with carving on pillars at Amaravati and also plaques from Govinda Bhita.[195]

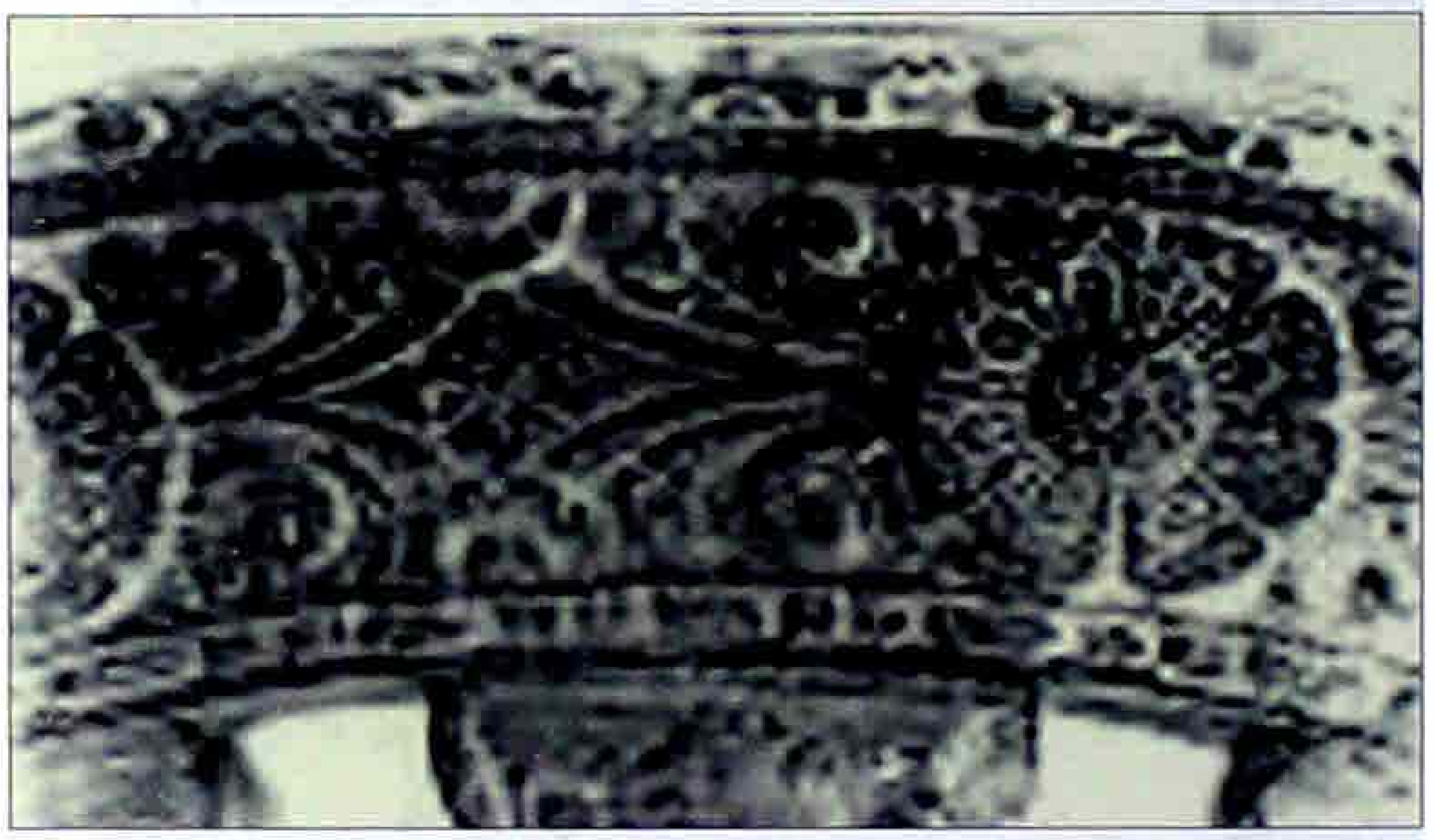
Terracotta dancer from Kyontu pagoda, Waw Township, Bago Division.

Fragment of terracotta plaque with bird-like or human figure, Kyontu pagoda, Waw Township, Bago Division.

Terracotta fragment with two human figures, possibly wresters, from Winka, Bilin Township, Mon State.

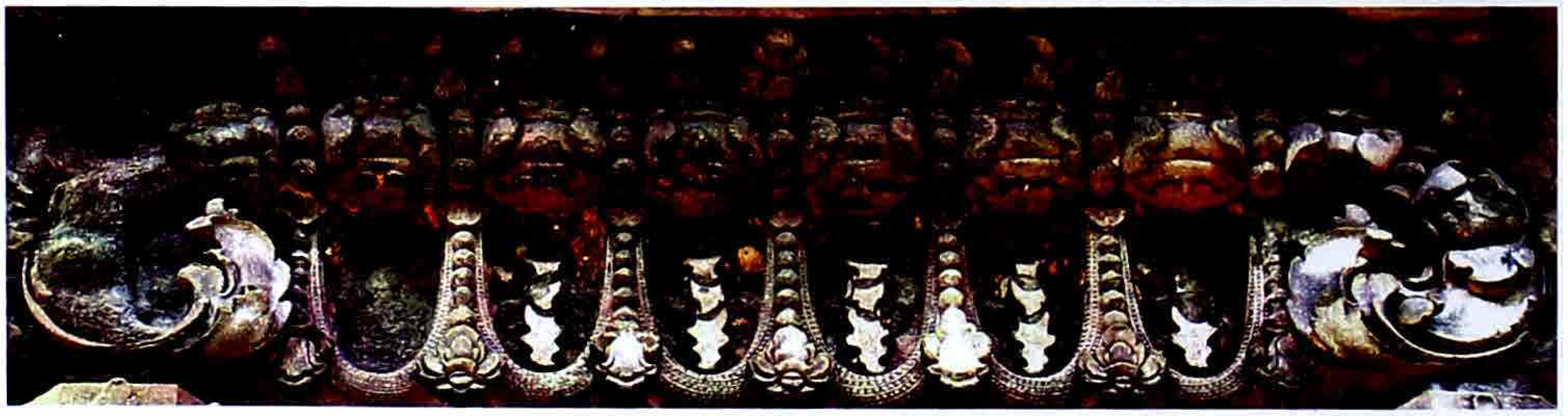
Corner of terracotta plaque with floral motif, dotted border and celebratory figures. Kyontu pagoda, Waw Township, Bago Division.

Terracotta 'lintel' or architectural element from Winka, Mon State. *(San Win collection)*



Lozenge and circle motif, rim Dvaravati wheel of law. *(After Brown 1996)*

Lintel design typical of 7th century AD. Sambor Prei Kuk style, Cambodia. *(Photo Paisarn Piemmattawat)*



The Myanmar plaques are notable for their spirited scenes of celebration and the manner in which the figures fill the beaded roundels into which they are set. Also striking is the depiction of two lions seen being hunted on a plaque from Kyontu, "ferocious animals with mouths agape…a chain round his neck."[196] However, on a plaque from Winka now in the Mawlamyine Museum, the lions have no tether and seem more emblems than hunted creatures. Both have full 'Asokan' manes and rounded bodies. One animal is depicted frontally and the other in profile, the mouths drawn back and one paw raised. Lions with similar curled manes are seen in laterite at the Pitaka-taik of the Shwezayan at Thaton and on the outer wall of Zothoke.[197]

Terracotta lion plaque from Winka, now in Mawlamyine Museum, Mon State.

Other terracottas from Winka are equally well made, including several architectural lintel-like pieces. Six sections have been found with the three complete pieces, each *circa* 40 cm in length, 10 cm high, and 15 cm thick. Each section bears two circles filled with a crosshatch design that recalls the patterning of circles on the corners of some of the plaques. The circles alternate with lozenges made up of alternating bands of beads and lines while below are triple garlands of pendant flowers. In form and design, the pieces resemble Khmer lintels of the 7th century AD such as at Sambor Prei Kuk and Prei Kmeng.[198] Another link is seen at Sambor Prei Kuk, where one of the terracotta roundels carved on the brick walls shows two men fighting with a lion.[199]

Large laterite 'wheel' kept at Shan Hpaya near Winka, Bilin Township, Mon State.

Above right: Votive tablet with rounded top and flat bottom depicting the Buddha seated European style on a throne with five vessels at the base of the throne; flanked by two disciples and surmounted by three images of Buddhas, from Winka, Mon State. *(Mawlamyine Museum)*

The lintel designs also bear some resemblances to the circle-lozenge motif on *Dharmacakra*, where Khmer parallels are noted as varied but characteristic only in the Prei Kmeng (*circa* 635-700) and late Sambor styles (*circa* 600-650).[200] To date, no *Dharmacakra* have been found in Lower Myanmar, although two well-carved laterite circles, each *circa* 150 cm in diameter and 15 cm thick are kept at Shan Phaya stupa in Winka. Each is incised with a circle on the rim and three circles around the centre. Whether the terracotta plaques, the 'lintel' sections and the 'wheels' are contemporaneous remains conjectural, but if taken as a group, they may illustrate the artistic developments from *circa* 400-800 AD. In a chronological context, they fit with a range of other finds common to Lower Myanmar and Central Thailand such as stone beads, silver and gold coins, and saddle querns or muller stones.[201]

Votive tablets

Another type of object where Southeast rather than South Asian comparisons are useful is votive tablets. Although the practice of stamping tablets in South Asia is thought to have originated around the start of the Christian era, it was during the 4-6th century AD Gupta and 8-11th century AD Pala-Sena periods that they became more popular as a means of devotion and merit.[202] As in India, the use of the tablets amongst the Pyu and Mon served a number of purposes including merit-making, for ceremonial occasions and as a pilgrimage memento. They also signalled political control, with votive tablets of the Bagan King Anawratha

Rectangular terracotta tablet depicting the Buddha in *Dharmacakra mudra* flanked by two disciples. *(Kaw Htin village collection, Mon State)*

Votive tablet depicting the Buddha in *Dhyani mudra*; flanked by *stupas* and felines, seated on double elephants; from Mokti near Dawei. *(Collection Than Swe)*

at the Bawbawgyi stupa south of Sriksetra. A number of bronze moulds used to stamp the tablets have been found, some imported and others made locally, possibly in monastery workshops.[203] The votive tablets, earlier ones often circular or *bodhi*-leaf shaped, are sometimes inscribed with Sanskrit written in Nagari characters, and in others with Pyu writing. The writing may be on the back of the tablet around the figure, whereas by the Bagan period, inscriptions on votive tablets are most often placed at the bottom of the tablet, below the throne of the image.[204] At times this has helped in dating, an example being a horde of 127 tablets from Winka (WK6), where writing on some is placed in the 6th century AD.

Some tablets show a triad with the Buddha flanked by an image in *Bhumisparsa mudra* and the future Buddha, Maitreya.[205] In a tablet with an arched top and square base – a type common in peninsular Thailand – found at Winka, the Buddha is seated in the European manner, accompanied by two *Bodhisattvas*.[206] A small rectangular tablet from Kaw Htin also depicts a central image of the Buddha flanked by two attendants, although in this example the round beaded halo recalls tablets from Sriksetra.[207] Two other types of votive tablets – *Makara*-throne and paired *stupas* – are not just found at Sriksetra, however, but have been recorded in Rakhine and in the far south, from Mokti at Dawei.[208] Examples of the *Makara*-throne tablet from Mokti (8.7 x 6.9 cm) depict the Buddha seated on a double elephant with *Makaras* flanking the throne. A rampant feline and a *stupa* flank the image on either side.[209] Similar *Makara* figures are seen flanking the backdrop of the Buddhas on large gilded silver reliquary casket from Sriksetra. Two larger tablets (12.5-14 x 10 cm) also from Mokti show a central image of the Buddha seated on a double lotus throne. The right hand is in *Bhumisparsa mudra* with a small bowl held in the left hand. Four bulbous *stupas* – which on other tablets Guy has noted are reminiscent of bulbous *stupas* like Bawbawgyi – flank the image, two on either side.[210] The head is framed by a narrow arch seen in

Votive tablets from Sriksetra displayed at Shwesandaw Pagoda in Pyay.

a few tablets from Sriksetra.[211] The reverse of the paired *stupa* tablets is impressed with a leaf pattern, particularly deep on the central stem. Again, parallels are found in tablets from Sriksetra.[212] The *stupa* tablets may have reached Mokti overland, for similar tablets are found at Yarang in Pattani province. At Yarang, they were linked to finds of a number of *stupikas* with one tablet inscribed in Sanskrit in Pallava script and dated to the 7th century. Pattaratorn has tentatively connected the tablet-*stupika* combination to the *Caitayakanikaya*, an offshoot of the Mahayanist *Mahasanghikasnikaya*.[213] A paired *stupa* tablet and small silver *stupika* are also among the finds from Khin Ba mound at Sriksetra.[214]

Front and reverse of votive tablet depicting the Buddha seated on a double lotus throne holding a bowl, possibly medicinal; flanked by four *stupas*; reverse impressed with *Bodhi* leaf pattern; from Mokti near Dawei. *(Collection Pe Nyan)*

Votive tablet fragment depicting row of eight figures above image of the Buddha and scenes of Buddha's life; found near Zingyaik Mountain, Thaton, Mon State. *(Photo by San Win)*

Votive tablet depicting the Buddha flanked by two bulbous *stupas*, head encircled by an aureole and backed by throne with rectangular cross-bar; from Wagaru, Mon State. *(Mawlamyine Museum)*

Images of the Buddha

Most of the images of the Buddha also date to around the 7th to 8th century AD, but some, such as an Amaravati style image of the Buddha (30 cm) are earlier and may have been imported. The image was found at Kyet-tu-ywe-Thaung village, 24 km east of Thaton, although it is now kept in a Thaton monastery, Nandawya Kyaung Taik. The sculpture depicts the Buddha in a standing position, his right arm pendant by his side and his left raised in the *Vitarka mudra* or holding his robe. The eyes are open, the head covered with large hair curls, now covered with gold. The right shoulder is uncovered, the robe falling smoothly in parallel curved folds, broken by the long upward sweep of the fabric on the left where the arm is raised. It parallels several found in Thailand, one from Pong Tûk in the Central Plain and perhaps the closest, and another from Nakhon Ratchasima in Northeast Thailand. These have been attributed to the 2nd to the 5th century AD.[215]

Standing bronze image of the Buddha, from Kyet-tu-ywe-Thaung, Thaton, Mon State. Nandawya Kyaurg Taik.

A second image from Thaton, described by Duroiselle in the 1930s, dates to the 7th or 8th century. This is also bronze, and depicts a standing Buddha, with right hand raised in the *Abhaya mudra* and left held open at a ninety degree angle with palm up to hold the gathered folds of the fabric. The robe is smoothly draped over the body although belted at the waist and clearly showing the undergarment. The edges of the robe form a wavy curve, elaborated on the left into a series of folds. The undergarment is visible, falling short of the ankles, with the feet realistically depicted. Although the hips are curved, the legs are straight. Duroiselle describes this image in his 1930s report as Dipankara, as the fingers of the right hand are canted slightly to the right. This recalls the gesture of the previous Buddha Dipankara upon meeting the monk Sumedha, who had prostrated himself in the mud making a dry path for the Buddha.

A very similar mudra is seen on two of three images (38.1, 45.72 and 66.04 cm in height) found south of Yangon at Dagondaing village near Twante (Khabin) in 2005.[216] The fingers on the right hand of these two images are slightly splayed, with the palm tilted some fifteen degrees to the side. This and the overall style, lead Than Tun and San Win to identify the image as Dipankara and date the hoard to the 7th century.[217] An early 7th century date would seem probable for the Twante hoard, particularly when compared to images used by Dowling in a study of pieces from the Angkor Borei region equated with Funan.[218] In an effort to define the presence there of different Buddhist schools in the 6th and 7th century, Dowling links certain images to the Sanskrit-based *Mūlasarvāstivādanikāya* based on variations particularly in the depiction of the robe. The most relevant for our purposes here are the presence of a visible belt, a wavy outer edge of the lower garment, and often a distinct pleating of the undergarment on either side of the legs.

As with the Thaton Dipankara, one Twante image shows the fold of the robe made by a belt, although the slight plumpness of

Standing bronze image (38.1 cm) of the Buddha, right hand lowered in *Abhaya mudra*, robe gathered in left hand; Dagondaing, Twante, Yangon Division.

the abdomen seen in the Thaton image is absent and the right leg is slightly flexed. In most other respects, however, it is alike, with large hair curls and a short, visible undergarment. The same gesture is present on another of the Twante images, the largest of the three, although the face has a more pronounced jaw and prominent nose, with smaller hair curls. However, the same outward turning of the raised right palm is seen and the image has a similar flexion to the right leg. A third image from Twante (38.1 cm) is softly modelled with full thighs, although the right hand is lowered and facing forward. In other respects, it is similar to the Dipankara piece, with both shoulders covered by the robe, again with a wavy outer edge on the lower garment and a visible belt.

The pieces may be a combination of imported and locally made images, but apart from the field reports of San Win documenting additional rectangular and rounded walled sites in this area, there has been little systematic study of either the Kyauktan area southeast of Yangon or the Twante area.[219] What work has been carried out has focused on the later period remains and the pottery production of the Twante region. We have noted, however, the similarity between a

Bronze standing image of the Buddha (Dipankara?) from Thaton; after Duroiselle. *(Luce 1985 Pl. 96a)*

Standing bronze image (45.72 cm) of the Buddha, right hand raised in *Abhaya mudra*, robe gathered in left hand; Dagondaing, Twante, Yangon Division.

Standing bronze image (66.04 cm) of the Buddha, right hand raised and angled outwards in *Abhaya mudra*, object or robe gathered in left hand; Dagondaing, Twante, Yangon Division.

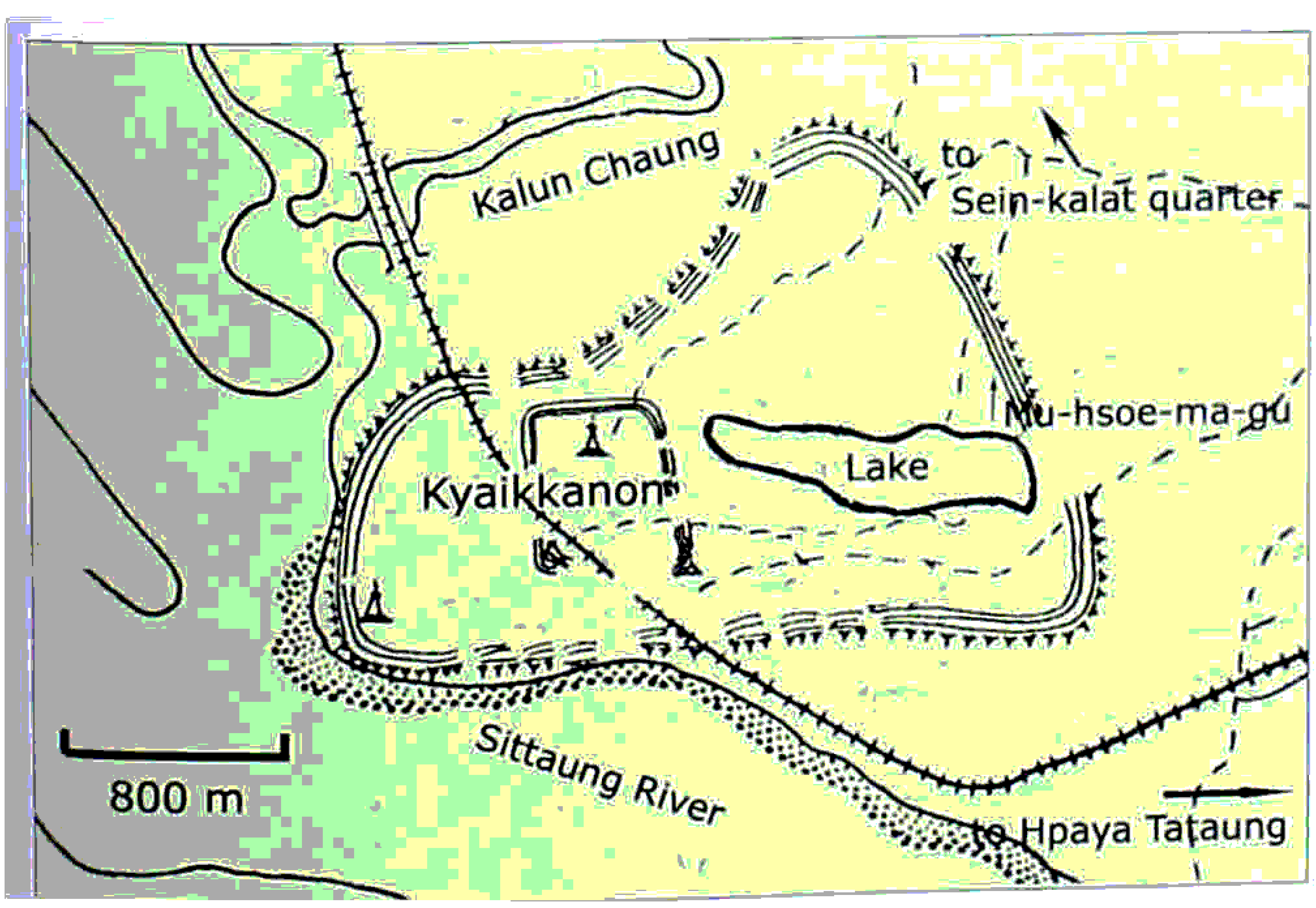
stencilled fig-leaf pattern seen on a pot from Khabin with the urns excavated at Thagara, Dawei. Furnivall and Luce both describe the remains of this coastal zone, from early legends of 'curly headed savages' to the laterite *stupa* of 'Maung Di' at Khabin.[220] Luce described Khabin as a fortress city of Anawrahta, with the traditional name Muang Di attributed to a reluctant fisherman who eventually married a local princess.[221]

The Twante hoard is a recent finding, although with development of the areas south of Yangon, these will probably continue. In many respects, the find epitomises many of the questions now opening up in first millennium AD study of Myanmar. They are not associated with a Pyu or Mon inscription. They are, however, located in a laterite-rich area and once formed part of the Mon lands of Hanthawaddy. It is within this territory that the sites below are found.

Bago, Kyaikkatha, Sittaung and Kaw Htin

Kyaikkatha's founding is traditionally linked to a prince Atha, grandson of the queen of the *Nagas*. In other versions, Atha was the son of King Thamala of Bago, raised by the queen of the buffalos and married to a mermaid.[222] The founding of Bago is traditionally dated to 825 AD, when the city is said to have been established by Thamala and Wimala, two sons of the king of Thaton. The story has Indra marking out the city using a rope attached to a central pillar, the symbolic Mt. Meru. As with all royal cities, it reputedly had 12 gates.[223] The legend is of interest, in linking Kyaikkatha, Thaton and Bago, but at present, finger-marked bricks and other first millenium AD artefacts have not been recorded at Bago.

The visible wall at Bago is *circa* 424 x 477 m and dates to the 16th century AD King Bayinnaung while an older rectilinear enclosure is seen to the east of the existing wall.[224] This is roughly half the size of the present wall, although the original shape has been obscured by the later construction. Some 20 km northeast of



Kyaikkatha is located at the mouth of the Sittaung, the apex of the Gulf of Muttama. While today directly on the river, the hydrology of this area has changed considerably with the forging of a new cut-off by the Sittaung on the opposite bank, south of Bago. *(After Aung Myint)*

Kyaikkanon stupa at the centre of Kyaikkatha.

Bago is Kyontu, where the terracotta plaques we looked at above are found. This region has been referred to as the heart of Ramañña, possibly linked to Bagan period references to Ukkaladesa.[225] The Kyontu mound is one of a series of lateritic elevations in the otherwise flat landscape, just east of Lakonbyi, one of the much later 32 towns or *myo* of Hanthawaddy – all of interest for their possible reflection of earlier habitation patterns.[226]

Kyaikkatha is the largest walled site in the laterite-rich zone. It was first identified on aerial photographs by Aung Myint in 1976 and verified on the ground in 1981.[227] During survey, a horde of conch-*Srivatsa* silver coins dated to the 5th century AD was found at Kyo Bin Kon Kyaung, a monastery on the southeast of the site.[228] The Kyaikkatha walls, made of earth, laterite and bricks, form an irregular lozenge, broader on the east where they widen to enclose lateritic high ground and a large partly manmade lake, Ye-leh-kyun. Finger-marked bricks are found at structures throughout the site and also the surrounding villages of Supanu, Kalun, Malawchaung, Kalatcha and Mokkamu.[229] At the centre is Kyaikkanon Zeidi at an altitude of 49.8 metres, considerably higher than the western wall, possibly the 'cosmological centre' in San Win's view. The inner walls are steep-sided, separated by narrow gullies *circa* 10-15 metres in width. The Su-taung-pye 'wish-fulfilling' pagoda in the southwest corner of the old site lies on a 15 m contour line in low-lying land stretching west to the Sittaung.[230] Just inside the eastern wall is a laterite structure,

East sector Kyaikkatha, large partly manmade lake, Ye-leh-kyun, with seasonal rice and water control device; looking east towards Kyaikhtoyoe pagoda.

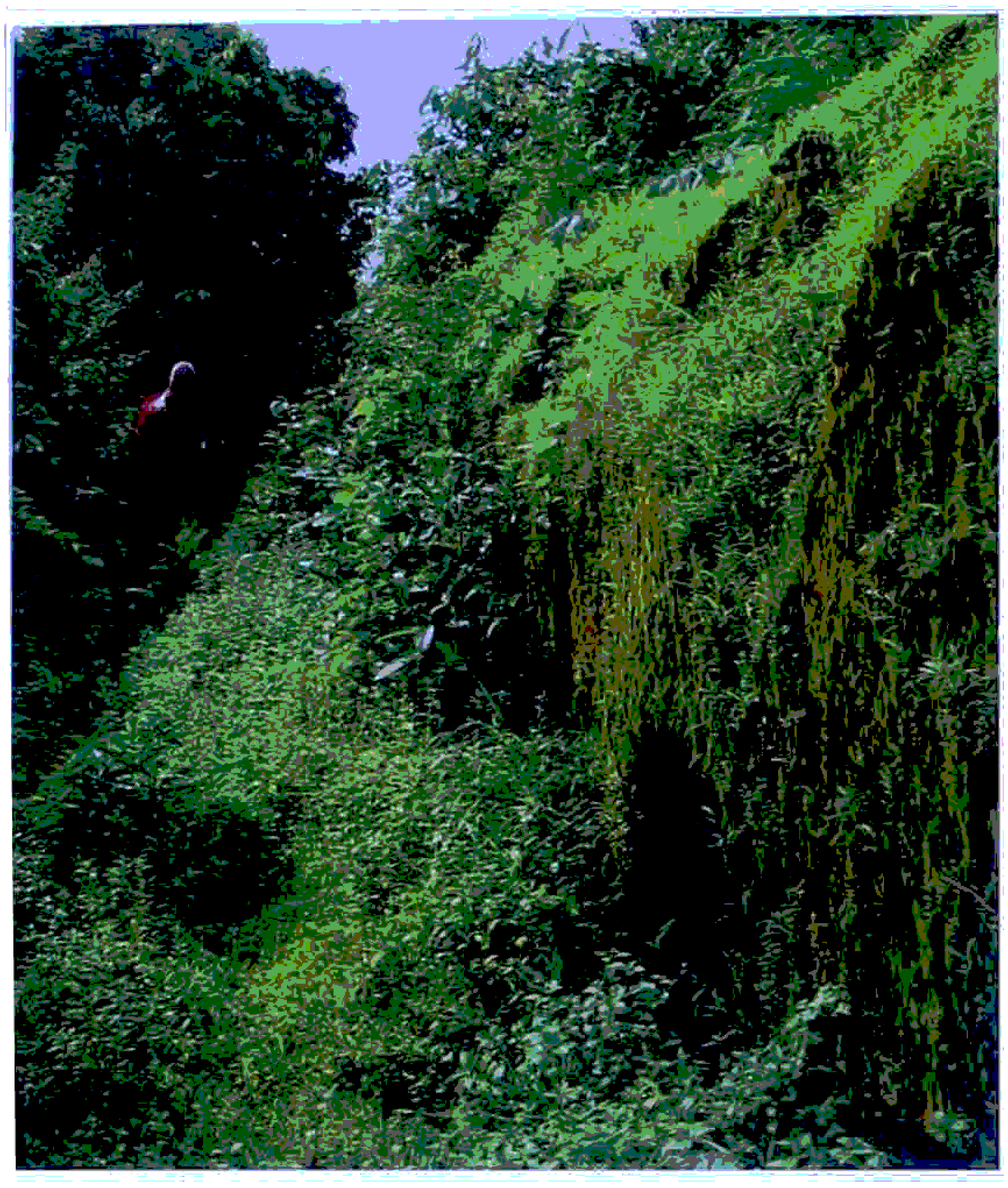
Moat Hsoe Ma Gu, a linear series of nine cells. Local stories link the constructions to the town of a Cambodian princess who wanted to marry Prince Atha. The Prince's wife, a mermaid in human form, to prevent him marrying another, killed the prince. The Cambodian princess then reputedly built Moat Hsoe Ma Gu and lived there.[231]

West-centre of Kyaikkatha, KKT7 (21.5 x 40.6 m) structure.

On the northeast within the walls are further laterite beds, and outside, the Sein-kalat quarter used today for upland crops such as groundnuts and betel. The outer wall measures 2,500 metres from east to west and 1,000-2,000 m north to south but this encloses the inner Kyaikkanon core with rounded corners at its maximum 750 m across and five to seven pairs of moat-wall constructions and an irregular outer extension banded with five pairs of moats and walls. The innermost enclosure surrounds a relatively small part of the overall site, some 19 hectares, which increases to 23 ha with the second moat-wall. However, the first outer wall is 155.5 m from the outermost inner wall, so that with the construction of the outer walls the site area increases to a total of 269 ha. The five outer walls range from 8.5-21.3 m, with the moats flanking them 4.6-17 m wide. The widest northeast moat probably reflects efforts to control water flow, as the elevation rises from *circa* 15 m on the southwest to *circa* 20 m on the northeast. Just outside the northeast wall, the elevation increases rapidly to *circa* 50 m.[232]

The Department of Archaeology has conducted excavations at seven sites within Kyaikkatha. In 1986-1998, five different pits, labelled KKT1 to KKT5 were dug by Ko Ko and in 2000, KKT6 and KKT7 by Myo Min Kyaw. All but one of the pits (KKT7) has been re-filled. The KKT7 structure, located just west of Kyaikkanon, is rectangular, measuring 21.5 m north to south and 40.6 m east to west. The building, with an east entry, had three large chambers flanked on the north and south by an outer corridor. The terracotta reliefs mentioned earlier were inset along the lower portion of the exterior of the building. Remains of a possible platform were unearthed in the central chamber. A range of pottery was recovered, including a round bottom water pot incised with a linear hatched pattern on the lower portion, several low wide-mouthed vessels and a number of sherds, decorated with incised and impressed linear, and possibly stamped circular and triangular motifs.[233] Surface finds from the compound included blue glass beads, polished stone tools, votive tablets and a number of grinding stones or muller similar to those found at Dvaravati sites.[234]

At Kyo Bin Kon Kyaung, where the horde of silver coins was found, five bronze images of the Buddha were also recovered, although kept today at another monastery, the Don Lan Kyaung.

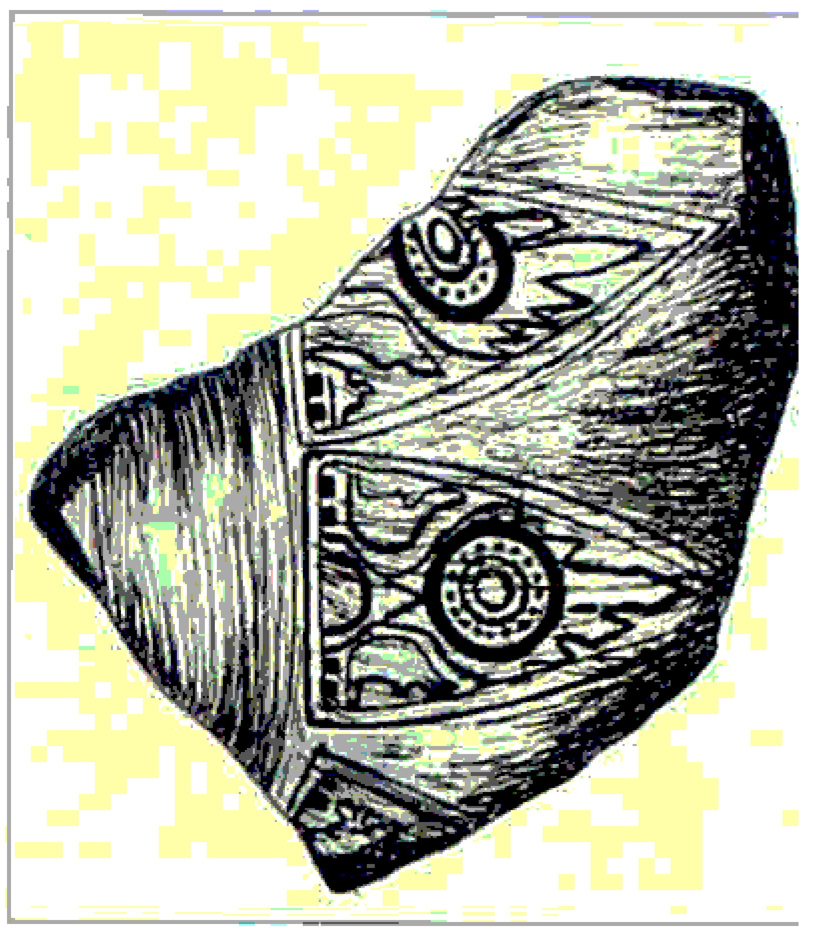


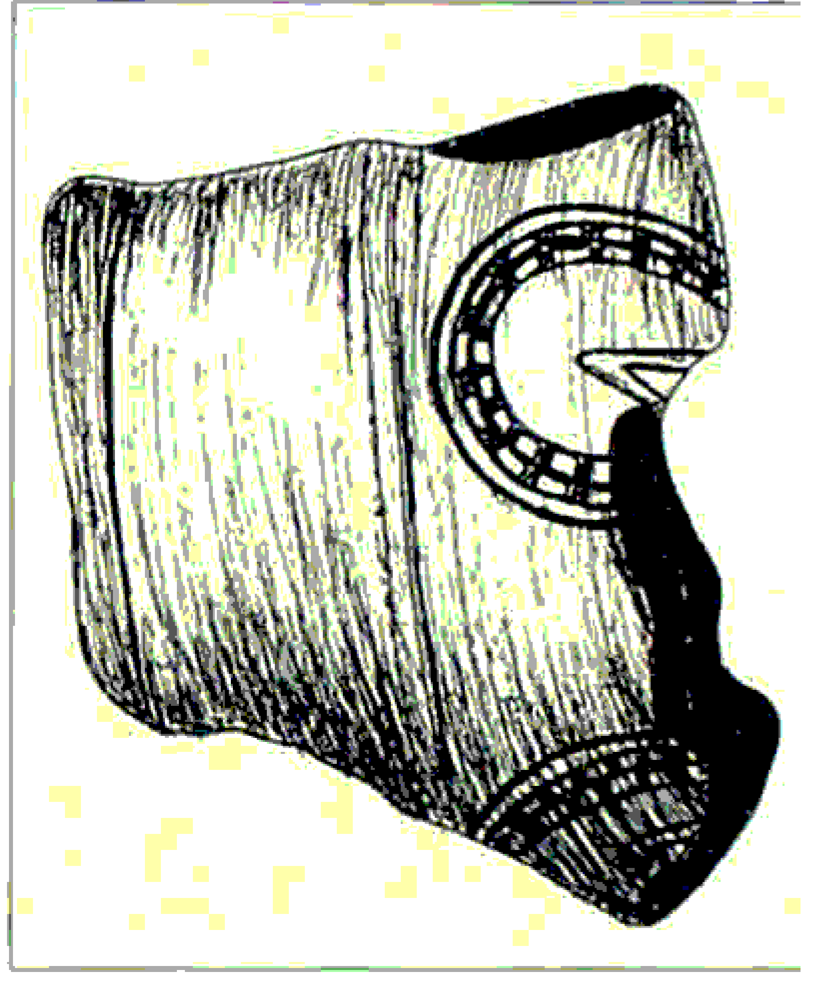
East edge Kyaikkatha, Moat Hsoe Ma Gu, line of cells linked in legends to a Cambodian princess who wanted to marry a local prince.

The images, ranging in height from 15-25 centimetres, probably date to the 13th to 14th century AD. Three of the images, standing with right hand in the *Abhaya mudra*, broad shoulders and a ribbed belt holding the undergarment, recall pieces from Haripuñjaya and late Sukhothai.[235] In the modelling of the head, strong browline and nose and small knobbed *ushnisha*, the closest parallel to two of the images is a seated Buddha found near Muang Di pagoda at Twante.[236] Also at this monastery is a squat pillar-like stone *circa* 1 metre in height with a sloping top on which have been carved four large faces in the style of a *mukhalinga*. The smiling mouths on these recall 14th century Pinnya images of the Buddha but the carving may be recent; the top is painted gold as the piece is venerated today. Kyaikkatha is greatly in need of further investigation and unlike both Thaton and Bago, it has seen little modern development.[237] Further documentation is also needed of Hpaya Tataung (Malawchaung), the 'one thousand pagodas' to the east of Kyaikkatha noted in early 20th century records.[238] Two further walled sites that flank Kyaikkatha on the north and south – Sittaung and Kaw Htin – may have acted as forts, with Sittaung protecting the mouth of the river and Kaw Htin the road leading south to Kelasa. Old Sittaung (72 ha), 15 km northwest of Kyaikkatha, is known as Kyaikkalun Pon Hpaya. Another of the 32 towns of Hanthawaddy, it is on a hill south of the present town overlooking the Sittaung River. Two earthworks remain, making an irregular lozenge shape, some 800 m east-west and 500 m north-south. Of note from site survey is a votive tablet (10 x 5 cm) at the local monastery, the *stupa*-type tablet we will looked at above, found at Sriksetra and also at Dawei.[239]

At Kyaikto, likely to have been part of a first millennium AD trading network, continued occupation has obliterated early remains.[240] However, complex earthworks are visible at Kaw Htin, midway between Kyaikkatha and Kyaikto. The site is separated by ricefields and the railway into two parts, Kaw Htin and Shwe Kyaung or 'golden monastery'. Further finger-marked bricks are also found within the remains of a *stupa* at Mukkamu village to the north, but no wall has yet been identified at this site. Kaw Htin, although small (*circa* 300 x 300 metres), has two or three walls surrounding a central high point (55.5 m) plus an outer series of 3-5 concentric walls separated by narrow moats (*circa* 10 m). Kaba Aye (Thekka Htu Pa) Hpaya and monastery have been built in the centre of the ancient mound. A number of finger-marked bricks have been collected in the adjacent village to the east, typically 44 x 26.5 x 8 cm.

Ground survey at both Sittaung and Kaw Htin has been undertaken by Aung Myint and subsequently San Win, but no full mapping or excavation has taken place. No radiocarbon dates were obtained from the Kyaikkatha excavations. However, the horde of silver coins, the pottery and terracotta reliefs from KKT7, the *stupa*-type votive tablet, blue glass beads and finger-marked bricks all support a date of *circa* the 5th to 9th century AD. As we will see, this is similar to the evidence from Winka and Ayetthema, 25 km to the southeast at Kelasa.





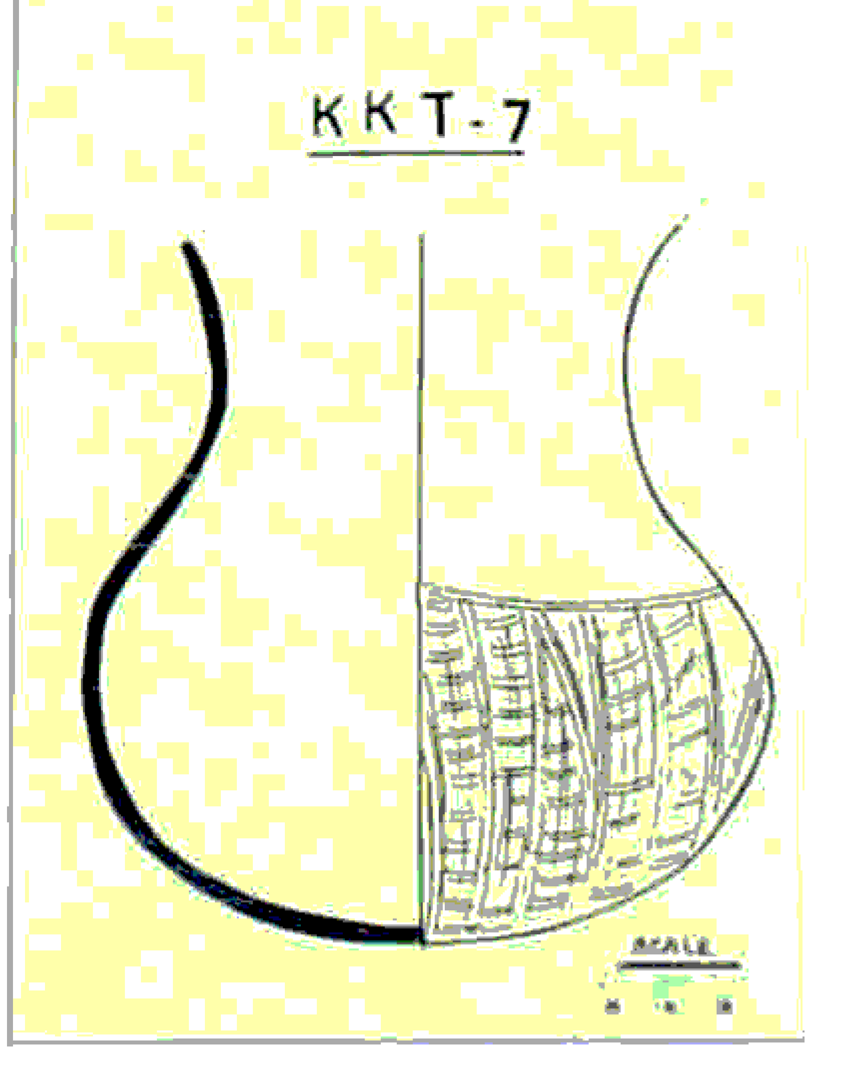
Pot sherds with triangular and circular motifs from KKT7, after excavation drawings.

Mt. Kelasa

Mt. Kelasa is located west of the main north to south range on the northern part of the peninsula. It is well sited for trade, facing the Gulf of Muttama on the west, with the Bilin and Thanlwin Rivers to the south. The two most venerated *stupas* are Kelasa on the rocky summit (354 m) and Mya Thabeik ('emerald alms bowl') on the western side of the mountain. Aung Thwin contends that 'Kelasa' is a mythical allusion in Kyanzittha's inscriptions that tells nothing of an actual place.[241] It may well have not been called by the same name, but finger-marked bricks from the summit of Kelasa support the existence of constructions during the first millennium AD. A number of small towns are dotted around the base of Kelasa, such as Taung-gyi on the south. However, the main area that has been investigated is the northwest side as it is this flank that faces the sea, and it is on this side that Dhammaceti's 15th century AD inscription records the ancient capital.

Legendary accounts and 'Suvannahbumi'

Memory of Kelasa is preserved in traditional accounts of the area placed in the time of the Buddha Gotama, again with the mission of Sona and Uttara in the 3rd century BC and later Buddhaghosa. On the platform of Kelasa pagoda, a stone image of a *manothaya* is said to link the site to the legendary defeat of the child-eating ogre and the establishment of Theravada teachings. The Sri Lankan *Mahavamsa* notes that in the 2nd century BC, that a delegation from Kelasa monastery attended an alms-giving ceremony of the king.[242] During the time of Buddhaghosa, the monk is said to have retired to the monastery still preserved on an open level clearing at the foot of the Kelasa pagoda.[243] Near this small monastery, a 3 m high slab with inscription of Dhammaceti is preserved. In Dhammaceti's Kalyani inscription, Kelasa is referred to as 'Kelasapow':

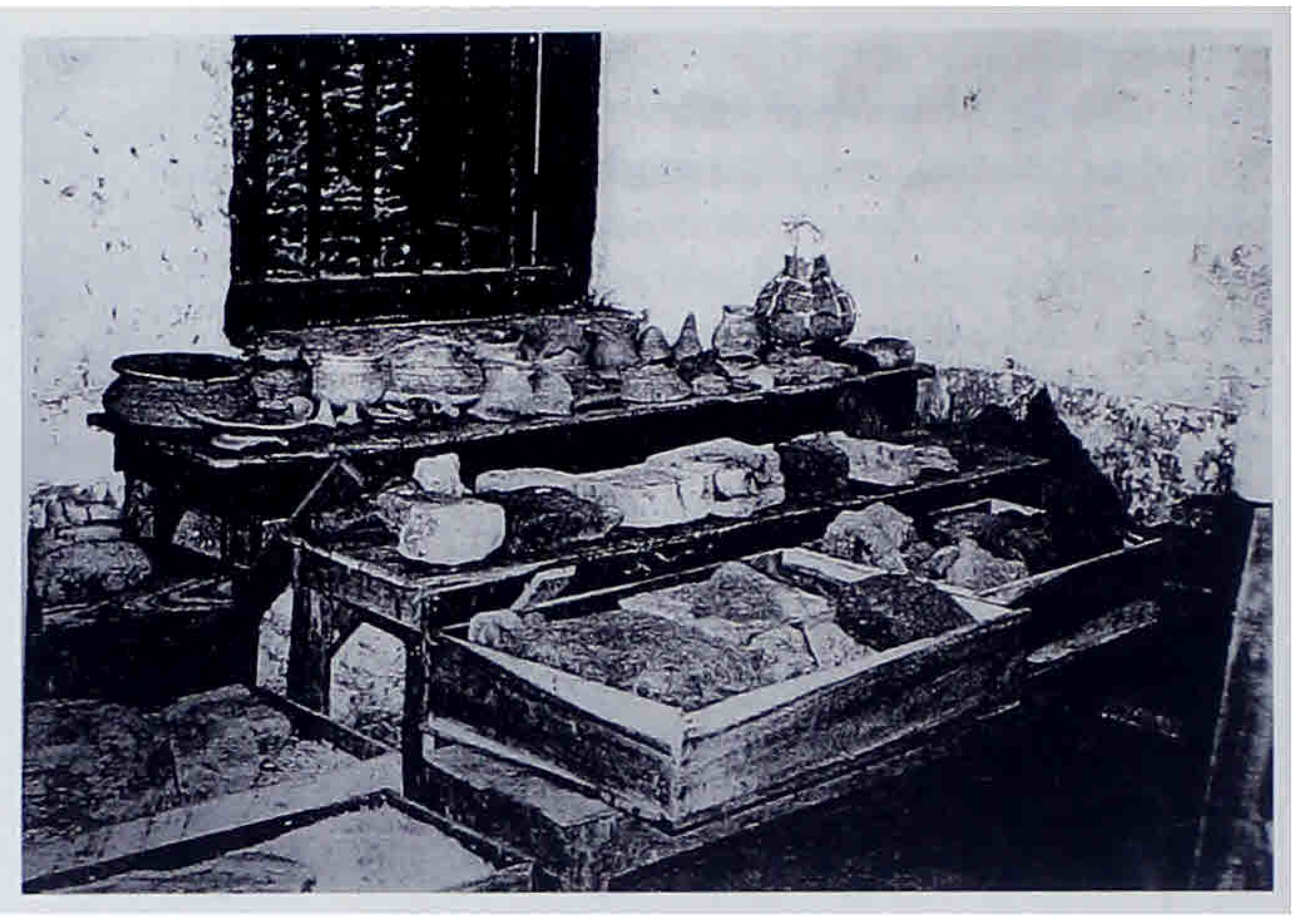


Round bottom pot inscribed with cross-hatch pattern on lower portion from KKT7.
(After excavation drawings)

"At the time when our lords the two monks, namely Sonathera and Uttarathera (arrived?), [a king called Sirimasoka ruled over the country of *Suvannabhumi*. His capital was situated to] (I.7) the north-west of the Kelasapow pagoda (Pali *Kelasabhapabbatacetiya*)."[244]

The link between Kelasa and *Suvannabhumi* is said to have first been made about 1884 AD by Forchammer, although Bagan period and later finds from excavations suggest continued veneration. The

Pottery and bricks from excavation of KKT7.
(After Ngwe Ngwe Soe 2001)



existence of an infrastructure implied by Dhammaceti has not been verified archaeologically and the definition and location of *Suvannabhumi* has prompted many debates. These include locating *Suvannabhumi's* 57 townships around Chiang Mai, seen in the mid-17th century AD *Jambudipa Uchon Kyam.*[245]

However, the purpose here is not to document a paramount capital but to consider the geographical pattern of walled sites marking out first millennium AD pilgrimage, trade and political alliances. These stretched from at least Sriksetra, south to Kyaikkatha, Thaton and Thagara at Dawei. From Lower Myanmar, it probably continued along the coast but also turned east towards U Thong, Nakhon Pathom, Si Thep and on to Mu'ang Fa Daed. There are many reasons for calling this route, this coastal frontier and subsequent course across mainland Southeast Asia, the 'gold coast' of *Suvannabhumi or Chin-lin.*[246] This network – however it was named – may not have embraced all these sites throughout the millennium, but without Lower Myanmar, geographically it remains fragmented. This stretch of coast thus remains essential for understanding the first millennium AD integration of Indic religions into Southeast Asia. No conventional 'texts' prove this contention, but the network remains embedded in the landscape. The area's significance lay in its maritime position, not a single urban port; the coast may well have been renowned for its location and its multiple routes to the Gulf of Thailand and beyond.

Even the much debated *Suvannabhumi*, understood in this context, was not a single city but paved the way to lands to the east. For this, it could well have been famous. And it is in this context which needs to be kept in mind when looking at the modest remains from Winka and Ayetthema. Ayetthema is often considered to be the site of *Taikkala* (*Golamattikanagara*), described by Dhammaceti in the Kalyani inscription, and an earlier Mon inscription of Kyanzittha from Myatheindan (Kyaik Talan) stupa at Ayetthema.[247] However, a series of walls linking Winka to Mya Thabeik on Kelasa, suggest the reverse, with Winka as the ancient port and Ayetthema a guard post.[248] We noted earlier in describing sculpture some of the important finds to have come from Winka. These included a finely modelled terracotta plaque with a pair of lions and terracotta figures of wrestlers from *circa* the 5th to 7th century AD similar to those at Kyontu, as well as lintel-like pieces with designs akin to those found on Dvaravati *Dharmacakra* and Khmer lintels of the 7th century AD Sambor Prei Kuk style.

Terracotta plaque with peacock from Winka, Mon State. *(San Win collection)*

Winka and Ayetthema

Winka and Ayetthema are located at the foot of Kelasa on the northwest and north-northwest, respectively. They are small villages, with the early twentieth century population of Ayetthema 1,099, only half the 2,637 persons recorded at nearby Zothoke.[249] Within Winka, laterite blocks (*circa* 30 x 25 x 9 cm) carved with peacocks, lions, and *Bodhisattvas* are scattered throughout the village, with some blocks re-used to support modern day houses. There are other Kyontu-type terracottas including a single block *circa* 50 cm square depicting a peacock. The bird is seen frontally, the tail feathers fanned in an arc behind the head, with wings spread to fill the width of the plaque. The head and breast have been damaged, but the large clawed feet remain. Another rectangular piece (40 x 80 cm, *see page 211*) kept in Winka is carved from laterite and depicts a horned animal in profile, possibly a *samari* (yak) or *toe,* another mythical creature. The horns of the animal are curled, legs curled in front. The figure is expressive, although now badly eroded. Stone tools have also been recovered at Winka, generally bifacial polished axes some 10 cm in length. Ayetthema, north of Winka, is a promontory jutting out from the northwest side of the mountain. The Myatheindan Zeidi here is enclosed by a large number of wall segments, mostly on the promontory. Only one of these was sectioned during excavation, at Winka and Ayetthema carried out by Myint Aung in 1975-1976.

Ayetthema wall

A cutting was made across the north wall of Ayetthema (AYT1), a feature identified on 1958 aerial photographs of the site. It is one of several constructions whose linear outlines are visible on the promontory. The wall was finished with laterite blocks, but a stratigraphy of more than 2 m was defined. The upper layer (78 cm) was brickbats, under which was a light sandy soil thought to indicate a moat. There was, however, further brick debris in a southern extension of this, and the third layer (1.6 m) was an earlier brick and earth wall.[250] Among the small artefacts recovered were the heads of two clay animal figures identified as bulls. As noted earlier, two potsherds from AYT1 yielded thermo luminescence dates corresponding to 1499 AD and 1662 AD.[251] The results, from Australian National University, demonstrate the continued occupation but given the presence of three distinct phases of building for the wall, they are by no means a chronology for the wall or the site.

The landscape during the hot season, especially March-April, is very dry with fields left fallow. Ayetthema, Bilin Township, Mon State.

Winka

Following the excavation of the northern Ayetthema wall, Myint Aung shifted work to Winka. Unlike the Ayetthema area, where excavations were conducted on the foothills of the mountain, the Winka pits were within the village. Winka is a small farming village, its houses aligned along the edge of the hills. There are a number of small laterite and brick stupas located along the road stretching north to Ayetthema. Just north of the village, an old stone dam is seen where a major stream empties off the mountain. This is one of several streams watering the ricefields just west of the village. These are protected from coastal inundation by a linear construction, possibly ancient, but coastal and river change have obliterated clear patterning. The five structures excavated by Myint Aung, labelled WK1-5 were excavated within the village.

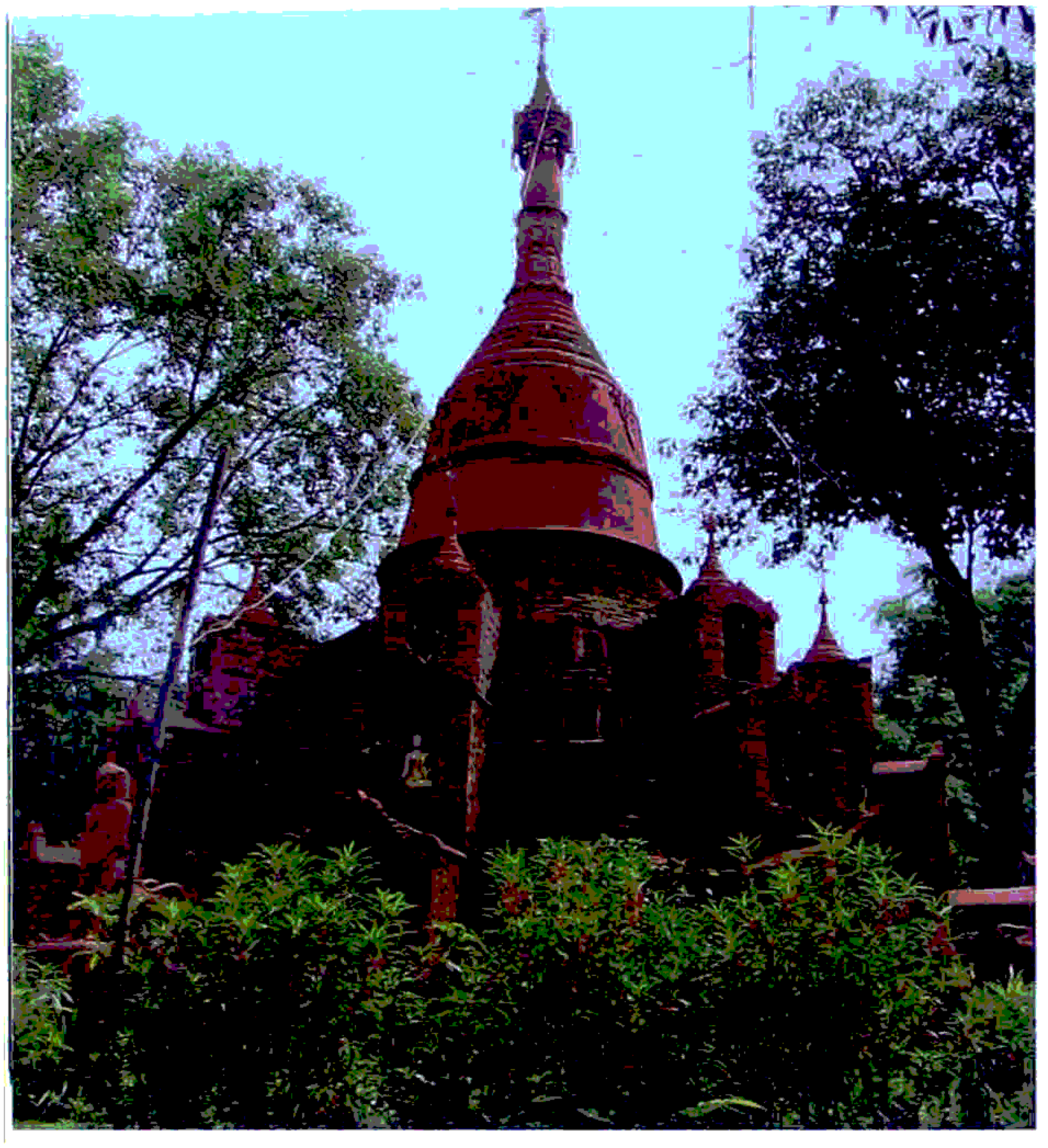
WK1 was a 14-room, 20.7 m square masonry building located on a mound in the centre of the village. The structure showed no entry, although a platform on the east may have supported a wooden staircase, as the exterior on this side showed some evidence of moulding. The bricks were comparable in size to those seen at Bagan (40 x 18.75 x 6.25 cm) but four iron nails, a terracotta bead with cylindrical grooves and a spherical carnelian bead suggested an earlier date. Additional spherical carnelian beads were found at WK2 and WK4.[252] A second structure (WK2), 24.6 m southeast of the first, was rectangular (15.85 x 10.9 m) oriented north-south, with eight rooms of variable size. The bricks (37.5 x 17.5 x 6.25 cm) were slightly smaller than those at WK1 but large bricks were found in the lower layers laid in a mud mortar. The stratigraphy showed three phases of construction, with structures levelled, the ground filled and new building taking place at the end of Phase 2. Among the artefacts were two terracotta oil lamps, one of red levigated clay, earthen stands and a flat circular 'hopscotch' disc. A carved figure of a seated lion was noted on a 45 x 32.5 cm laterite slab.[253]

WK3 consisted of a laterite wall and a brick platform with receding terraces. A small (6.8 cm in diameter) shallow earthenware oil lamp was found in the second layer of this excavated structure. WK4 failed to expose a building of any recognisable plan, although beads, votive tablets and potsherds were recovered. WK5 was located west of a recently renovated laterite *stupa* known as Kumara-zeidi (Rajamuni) in the northern part of Winka village. Kumara-zeidi has an octagonal plan, each side with a projecting offering platform. The *stupa* once had a battlement at the junction of the base and dome, made of upright slabs with reliefs. The WK5 structure (18.7 x 16.2 m) unearthed a line of seven rooms along the back wall and five along the front. The bricks used were 35 x 20 x 7.5 cm, and although its brick construction was taken to post-date Kumara-zeidi, the proximity suggests the building was a monastery. Other sculptures found nearby included a 45 cm high laterite carving depicting the torso of two figures in *Anjali mudra* under horseshoe-shaped arches.[254]

A previously looted mound (WK6) was excavated in the garden of U Po To in the southern part of Winka village. This exposed a square laterite and brick base topped by a cylindrical core. It appeared that the original *stupa* was later encased by a larger structure. Much of the *stupa* had been destroyed by vandalism but fragments of some 127 votive tablets were recovered, some similar to types found in Kawgun cave but not seen at sites in Upper Myanmar. The tablets varied in size, from 17.2 cm to 10.4 cm in height, and depict the Buddha seated in the *Dhyani mudra*. Inscriptions on two of the tablets refer to the making of images of the Buddha. In some cases the central image of the Buddha is

South part of Winka village; brick foundations in tree roots.

Terracotta and laterite pieces at Winka Village.
(Photo After San Win)



Octcagonal *stupa*, Kumara-zeidi (Rajamuni) at Winka village. The stupa is one of many along the lower edges of Mt. Kelasa. A number of these have been renovated in recent years.

flanked by similar Buddhas and in others by standing attendants. The main image may be framed by an arch or seated under a five-headed *naga*. Four of these had Mon inscriptions dated to the 6th century AD by Nai Pan Hla based on similarities to tablets from Nakhon Pathom.[255]

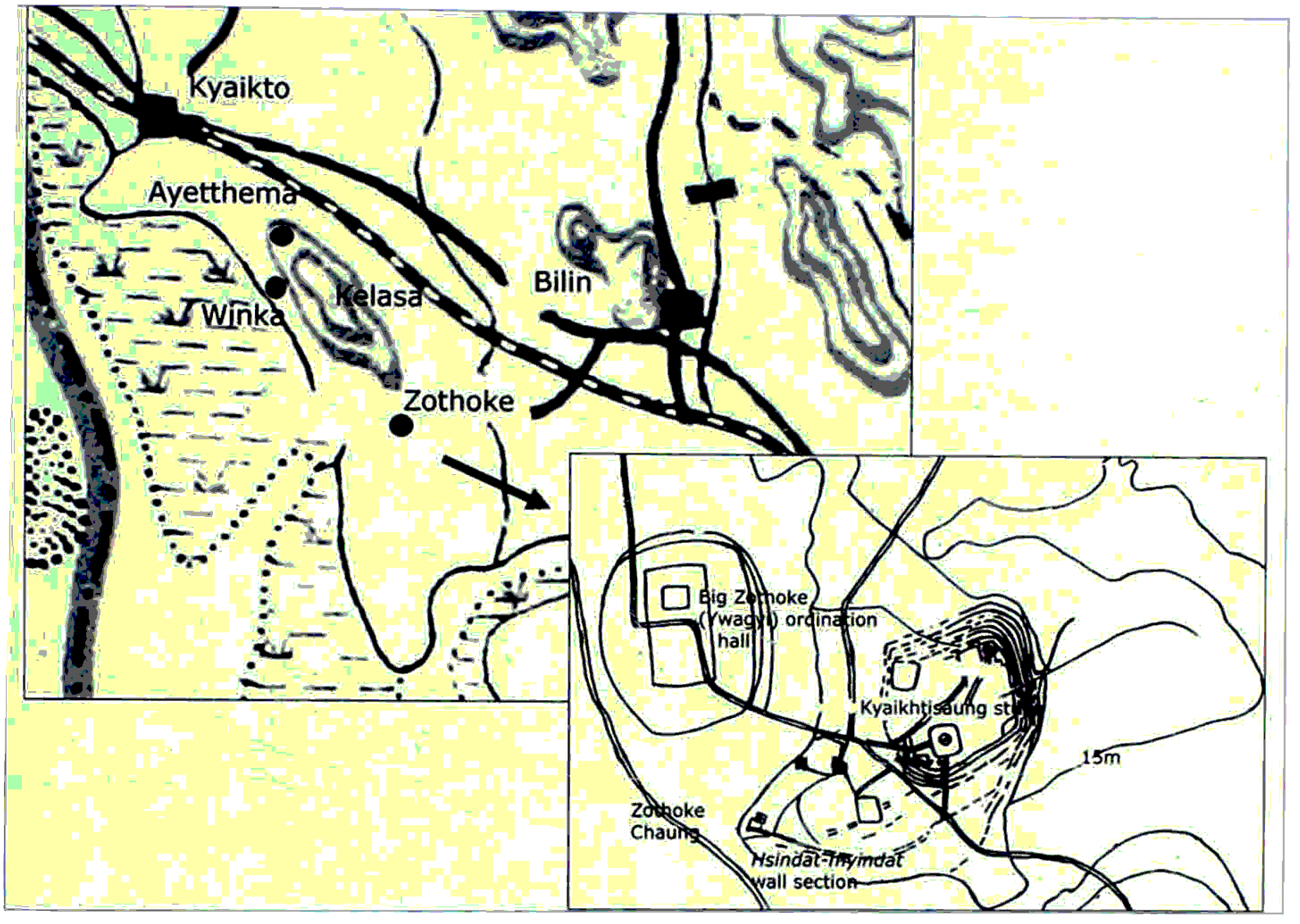
In addition, eight roughly finished slate adzes (19.5-23.3 cm and 5.5-15.5 cm long) identified as chisels and adzes made of gabbro, slate and mica schist were recovered. The pottery from Ayetthema included both grey and red wares, but only red wares were excavated at Winka. Among these were distinctive spouted vessels with a pouch-like bulge on the neck and four red slipped necks from sprinkler vessels, with flanged rim-tops similar ones from Beikthano. The spouts and sprinklers resemble 2nd to 3rd century AD pieces from Yeleswaram near Nagarjunakonda and Dvaravati sites such as U Thong and Kok Charoen.

The beads, pottery, votive tablets and stupa-like structure (WK6) at Winka all support a dating of *circa* 3rd to 6th century. When combined with the terracottas and lintel-like piece conservatively dated to the 7th century AD and the range of later structures and inscriptions at Ayetthema, the importance of the Kelasa area has begun to be documented. This is less the case with Zothoke, located immediately south of Kelasa.

Zothoke-Kyaikhtisaung

Zothoke is a complex walled site but its multiple walls and moats are little explored. There are two walled sites south of Kelasa commonly called Big Zothoke (180 ha) and Little Zothoke (52 ha).[256] Finger-marked bricks are abundant at both, but no excavations have been carried out. The walled area once probably enclosed the much larger laterite rise and possibly both the sites now seen as separate. The only remaining wall structure, *Hsindat-Myindat* (2.25 m high and 100 m long) is the one we looked at earlier in relation to the use of laterite as a construction material in Lower Myanmar. The wall crosses the tip of the mound where it meets the Zothoke Chaung (stream). An earthen rampart backs the wall on the north side, and a tank is seen in this area today.

A double wall (670 x 585 m) with rounded corners surrounds Big Zothoke, with an inner rectangular enclosure (250 x 170 m) around a Kalyani ordination hall, renovated in 2001. Little Zothoke is (850 x 650 m) is quadrangular with rounded corners, with land on the west lower and the walls overbuilt by the present village. Altogether, there are three walls and in places seven walls have been

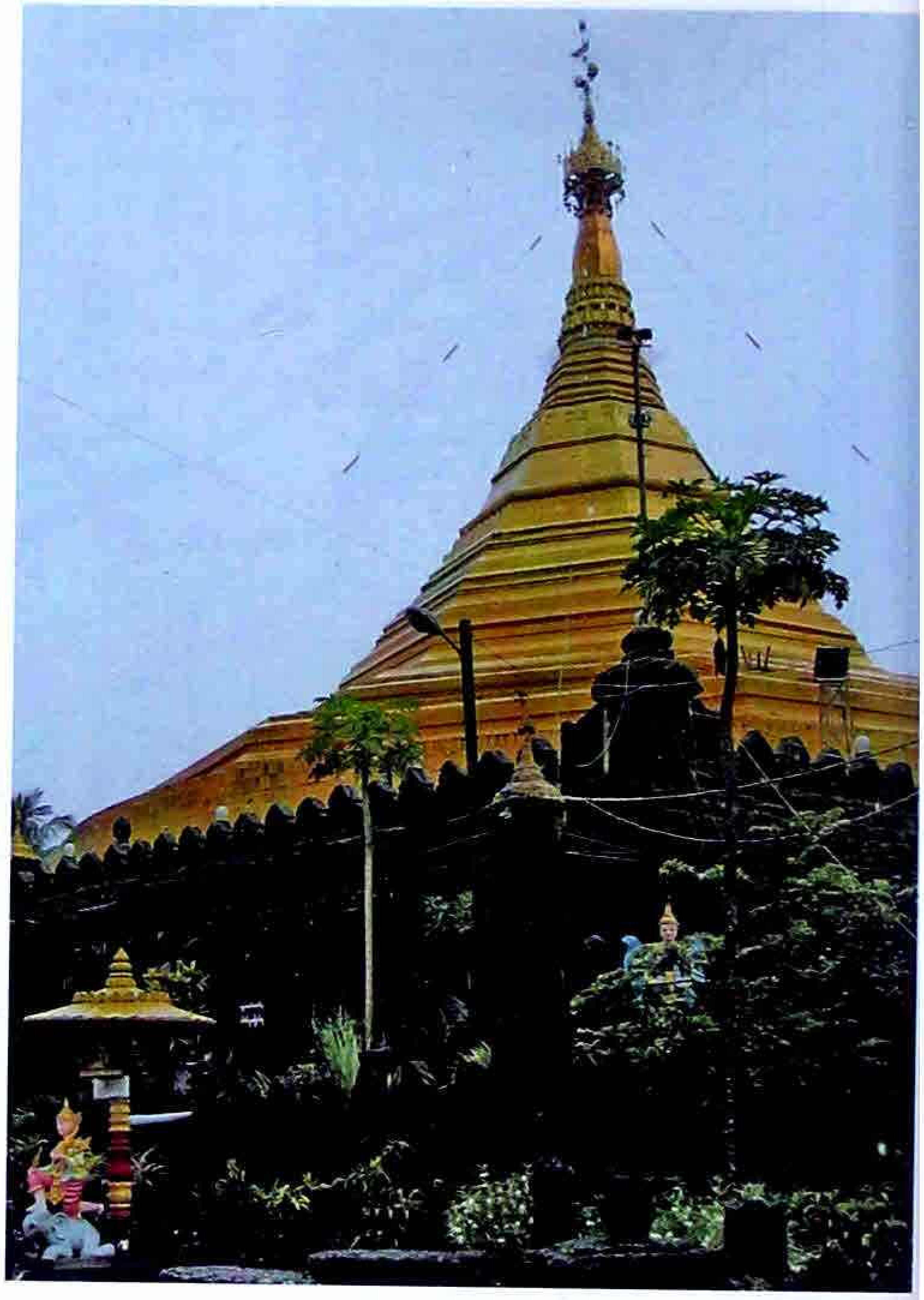


Zothoke today consists of two walled areas. Within Little Zothoke is the Htisaung (Kyaikhtisaung) stupa. On the southwest sector of the site, are the remains of a laterite wall known as Hsin-tat Myin-tat (or *dot*), 'elephant and horse' with relief carvings of animals. On the northwest is Zothoke or Ywagyi, enclosing an ordination hall. San Win suggests that both 'big' and 'little' sectors may have once formed part of the same site. *(After Aung Myint)*

preserved. The structures surround a low hill and Kyaikhtisaung stupa.[257] The multiple walls are particularly well preserved on the northeast side, close to the Naungdawgyi stupa.

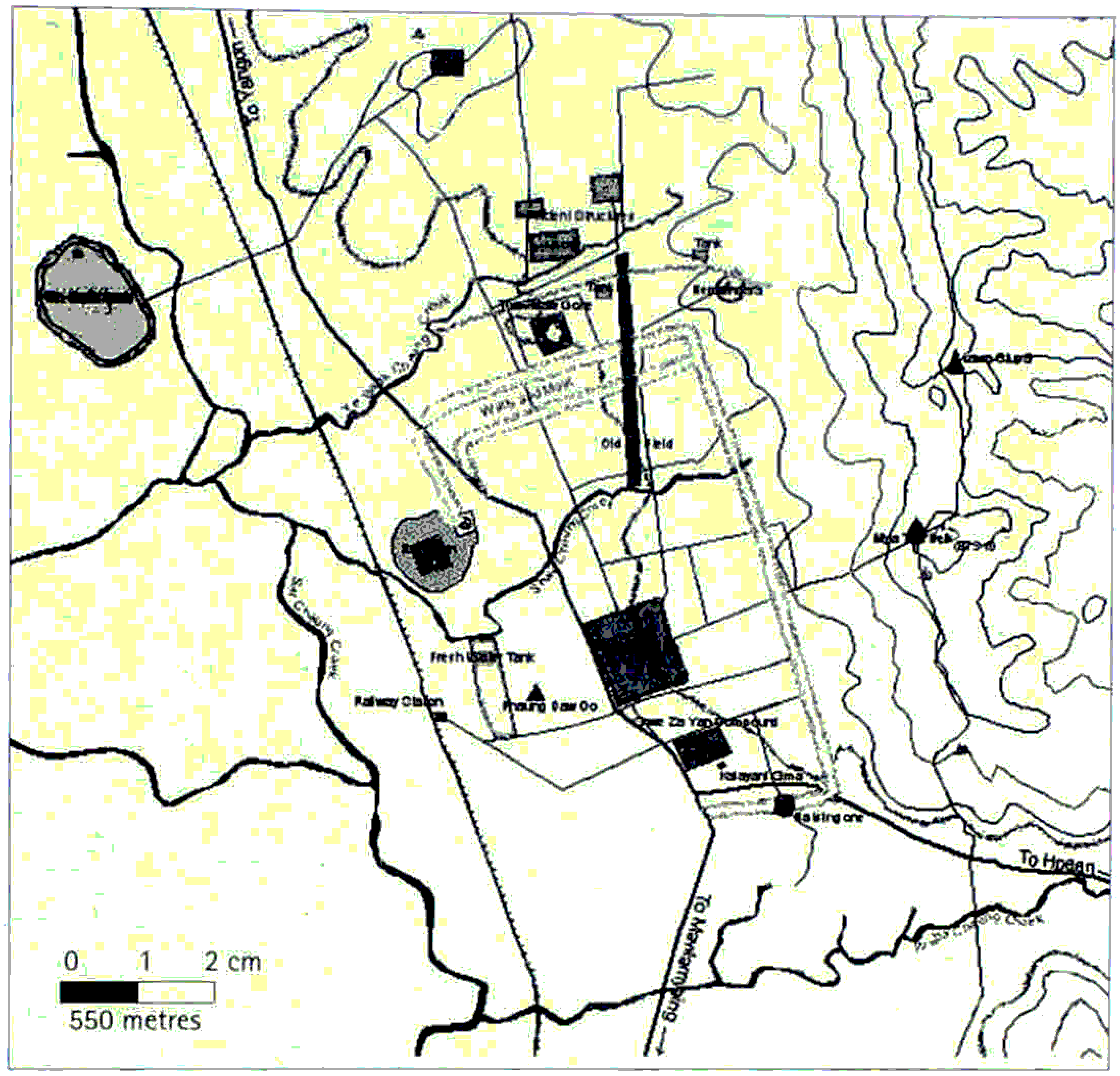
Both this structure and the Kyaikhtisaung stupa on the southwest are reputedly ancient, supported by the laterite elements of the *stupa* and a number of laterite carvings preserved within the area. Some of the blocks used to construct the plinth of the pagoda are large, measuring 60 x 45 x 30 centimetres.[258] Numerous finger-marked bricks have also been recorded. A keyhole shaped laterite 'well' near the central high point of the mound recalls several underground laterite tunnels documented by San Win in the region of Kyaikkatha. This incorporation of the unusual laterite formation into sites continues to the south of Zothoke.

To the southeast for about ten kilometres, a line of walled sites is aligned with the Kelasa and Zothoke *stupas*. All have a variety of laterite constructions and finger-marked bricks, with remnants of reliefs such as lions and *deva* on laterite blocks at the base of the *stupas*. Most of these *stupas* have laterite bases and are sited near the centre of the walled site, such as Manimekhala at Zwekala, and further to the southeast at Waingpat and Muthin. Southeast of Muthin one of the most complex is Moat-soe-ma-kon (Kakatit), an oval or footprint shaped site (12 ha) surrounded by up to five earthworks and moats.[259] Donwun, Mayangon and Hsinbyukyun discussed in earlier chapters are located further south, closer to Thaton.



Opposite: Kyaiktisaung stupa at Zothoke. Continued veneration at the site means that it now combines elements from many different periods.

Opposite left: Large laterite blocks on lower portion of Zothoke stupa; restored pavilion with image of Shin Thiwali; Bilin Township, Mon State.



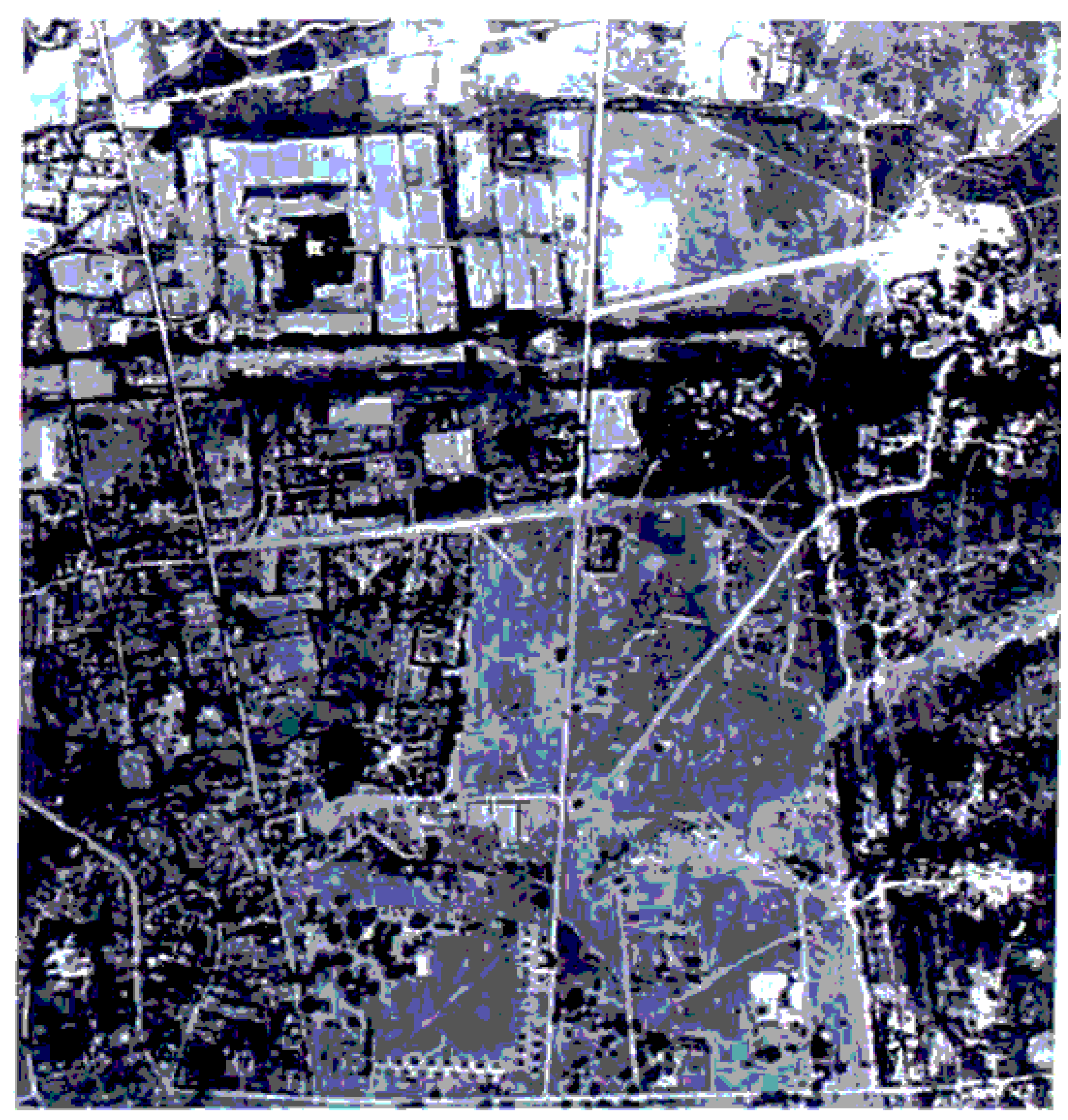
Right: Thaton, showing location site at foot of escarpment. The road to Pa-an (Hpa-an) runs eastward along the stream south of the walled area.

Thaton

Thaton occupies a strategic location, facing the coast on the west. On its east is a long escarpment along an old fault line, its walls and moats channelling water from the hills and preventing flooding from the sea.[260] Just south of Thaton, the range opens to form a 20-kilometre long valley with Zingyaik Mountain and passage to Pa-an and the Kawgun Caves. From there the road leads south and then over the Three Pagodas Pass to Central Thailand.

The Thaton walls are rectangular (2,010 x 1,290 metres) akin to those seen at Halin, for as noted in an 1897 description of the site, the corners are not right angles.[261] The most commonly reproduced map of Thaton shows it as simple rectangular form, but on the northeast and southeast, for example, five and three to four rounded corner walls respectively, work to draw water off from streams flowing down from peaks on the escarpment.[262]

The enclosed area of Thaton (286 ha) is roughly the same as Kyaikkatha, but later construction has obscured any sense of how this might have looked in the first millennium AD. There has been only one preliminary excavation carried out at Thaton in recent years, a small pit near the eastern wall, which yielded a few potsherds.[263] That Thaton *was* inhabited is seen in the abundant distribution of large bricks, many finger-marked in the lower layers of the current city wall. It is also seen in the finds from Hsinbyukyun and Mayangon discussed earlier.



The northeast corner and Thami-daw-gon enclosure in 1944 before the airfield was built, Thaton. Photo 4255 BN272 684 8 APR 44 F36 30,000'. *(Williams-Hunt Collection, SOAS)*

Opposite: Earthwork and wall remnant at Zothoke stupa, Bilin Township, Mon State.

Shwezayan, the main *stupa* at Thaton, is variously dated, sometimes to the lifetime of the Buddha or the 5th century AD. To the east and southeast of the Shwezayan are the Mya Theindan Zeidi and the Yanaung Taik libraries. Reliefs dated to the 9th to 11th century have also been found at Thaton, notably two slabs of reddish sandstone. Each over a metre in height, these are carved with images of Vishnu reclining on the serpent Ananta. Figures of Brahma, Vishnu and Shiva are seated on three lotus stems rising from his navel. Another sculpture found at Thaton depicts a four-armed seated figure of Shiva, a 1.2 metre relief, with his bull Nandi shown below the right leg and the buffalo-demon under his left knee.[264] Near to the Shwezayan is the Kalyani Thein or ordination hall, which like the Shwezayan has been repeatedly rebuilt and repaired. The Kalyani *sema* are over a metre in height, pillar-shaped stones carved with scenes from the life of the historical Buddha on each face. The scenes are on a central panel with floral carvings on the apex and in bands on the lower part of the stones. They recall Dvaravati *sema* from sites such as Mu'ang Fa Daed, Northeast Thailand, although these include both pillar and slab types. Also, the tiered arrangement of the Kalyani *sema* is distinct. The Kalyani stones are often linked to later Mon migrations from the northern Thailand kingdom of Haripunjaya when the population is said to have fled a cholera epidemic or Khmer incursions. However, given the legendary basis of this and the absence of a full comparative study of the stones, it would seem best to leave open the question of their date.[265] While some may date to the 12th to 13th century AD, often mentioned, three occupational phases at Mu'ang Fa Daed have been defined spanning the late centuries BC through the mid-first millennium AD.[266] Support for an earlier dating also is seen the style of the Kalyani figures, akin to the Donwun slab mentioned in the opening chapter and also reliefs from Nakhon Pathom.

In local chronicles, Thaton or Sudhammapura was the first and third capital of *Suvannabhumi*, sharing this role with Kelasa from *circa* 300 BC for many generations until it shifted to Muttama. It was here that the father of Thamala and Wimala reigned, his offspring founding the final locale at Bago.[267] The historical accuracy of this tradition has been deconstructed by Aung Thwin, with the capture of Thaton in the 11th century AD being the central focus of his most recent work.[268] Wales, who also rejected the identification of Thaton with *Suvannabhumi*, suggested that the city became Theravada only with the influx of Buddhists from Haripunjaya, although the date of this is also debated.[269] Aung Thwin classifies the finger-marked bricks, beads and pottery within Thaton as Pyu, part of an argument that from domesticated rice to early urban polities, change moved from north to south via a Tibeto-Burman (Pyu) population. He concludes that "Not only does evidence show that Burma for nearly the entire first millennium AD is without a Mon-speaking population, but the coastal areas said to have been Rāmaññadesa were, at that time, an

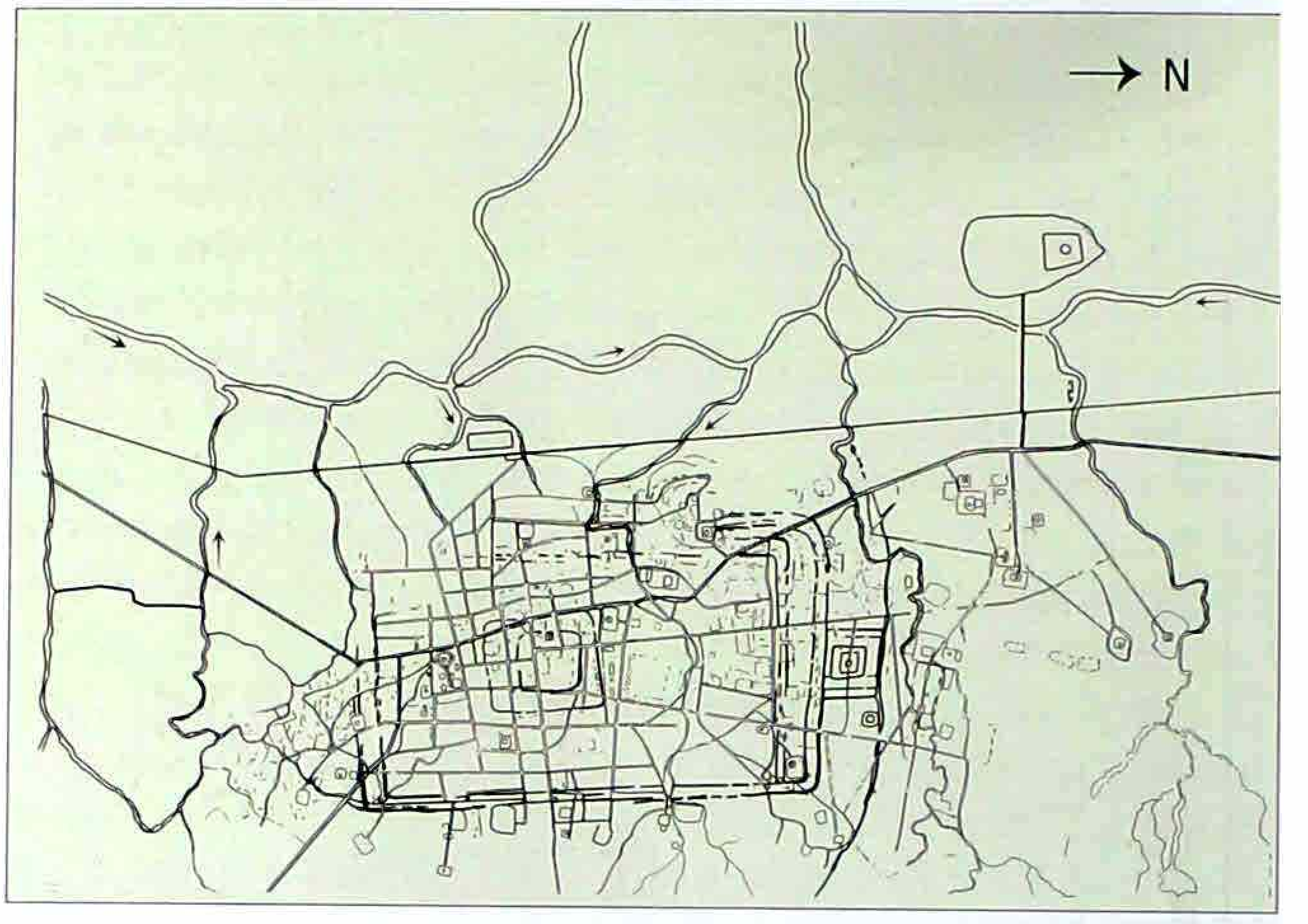
The terrain is open inside the northeast corner around the runway of the small airfield at Thaton.

undeveloped, sparsely inhabited frontier region except for the few scattered urban settlements perhaps inhabited by a variety of different cultures."[270]

South of Thaton are Muttama and Mawlawmyine and a more evidence of these 'scatttered settlements.' Little investigation has been made of these due to urban development, but San Win in 2003-2004 verified remains of a walled enclosure at Sisone-yat village (16°52'N, 97°36'E) at Muttama and at Myaine Thaya (16°27'N, 97°36'E) in west Mawlamyine, an extensive wall and circular stupa remains, all with finger-marked bricks.

Thagya hpaya at Shwezayan, Thaton. Periodic renovation and embellishment have maintained the structure, but have obscured many elements of archaeological interest.

Our perception of Thaton changes here where Hsinbyukyun and the shore of the Andaman Sea, to the west, is at the top of the map. On the east is a mountain ridge aligned along a north-south fault line. A number of hills ring the walled area. *(After San Win)*



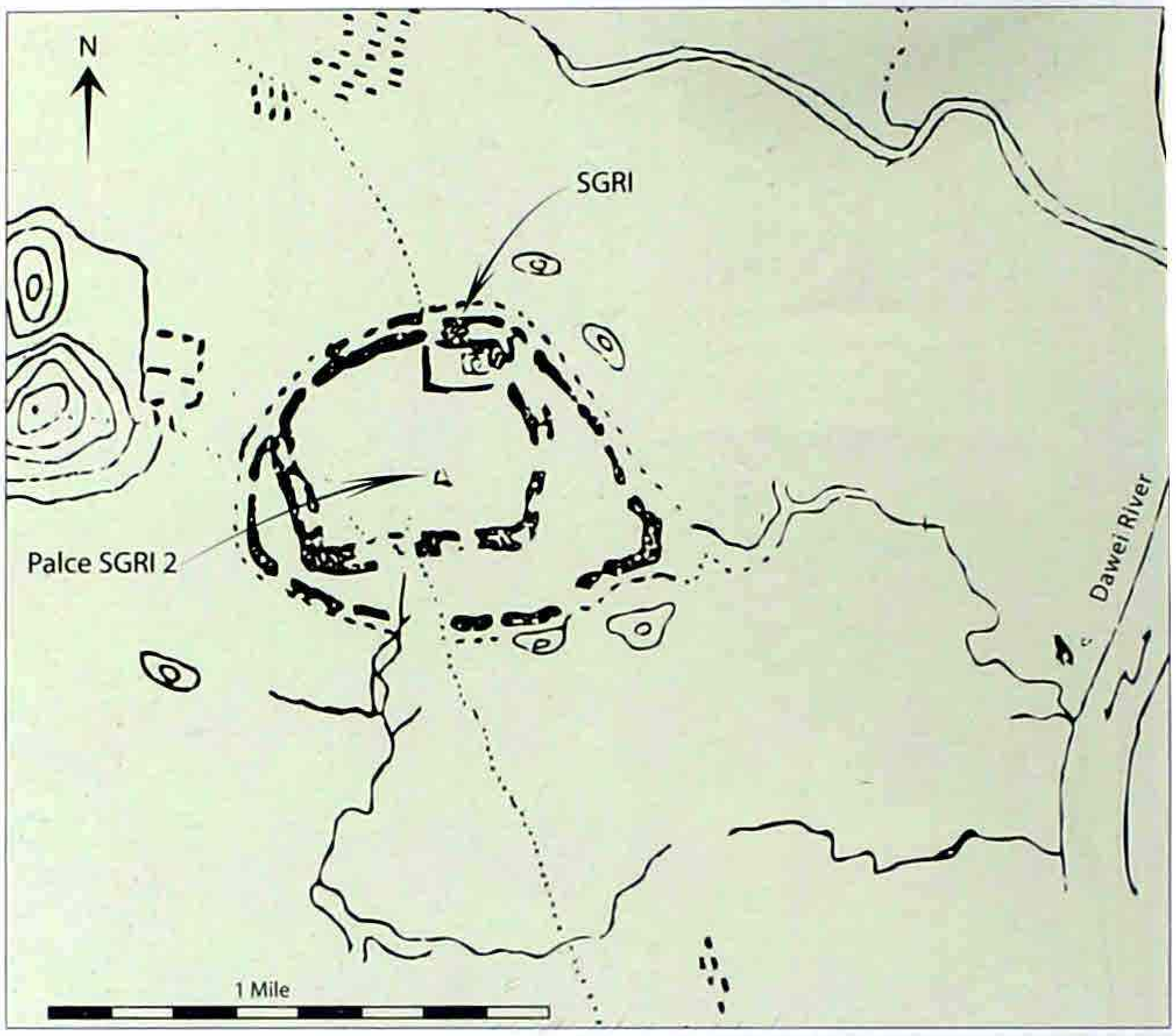
On the east side of Thaton, some earthworks have been levelled to provide open ground to store rice.

Below right: Houses built in one of several moats on southeast corner of Thaton.

Carved sandstone stele from Kalyani, Thaton.

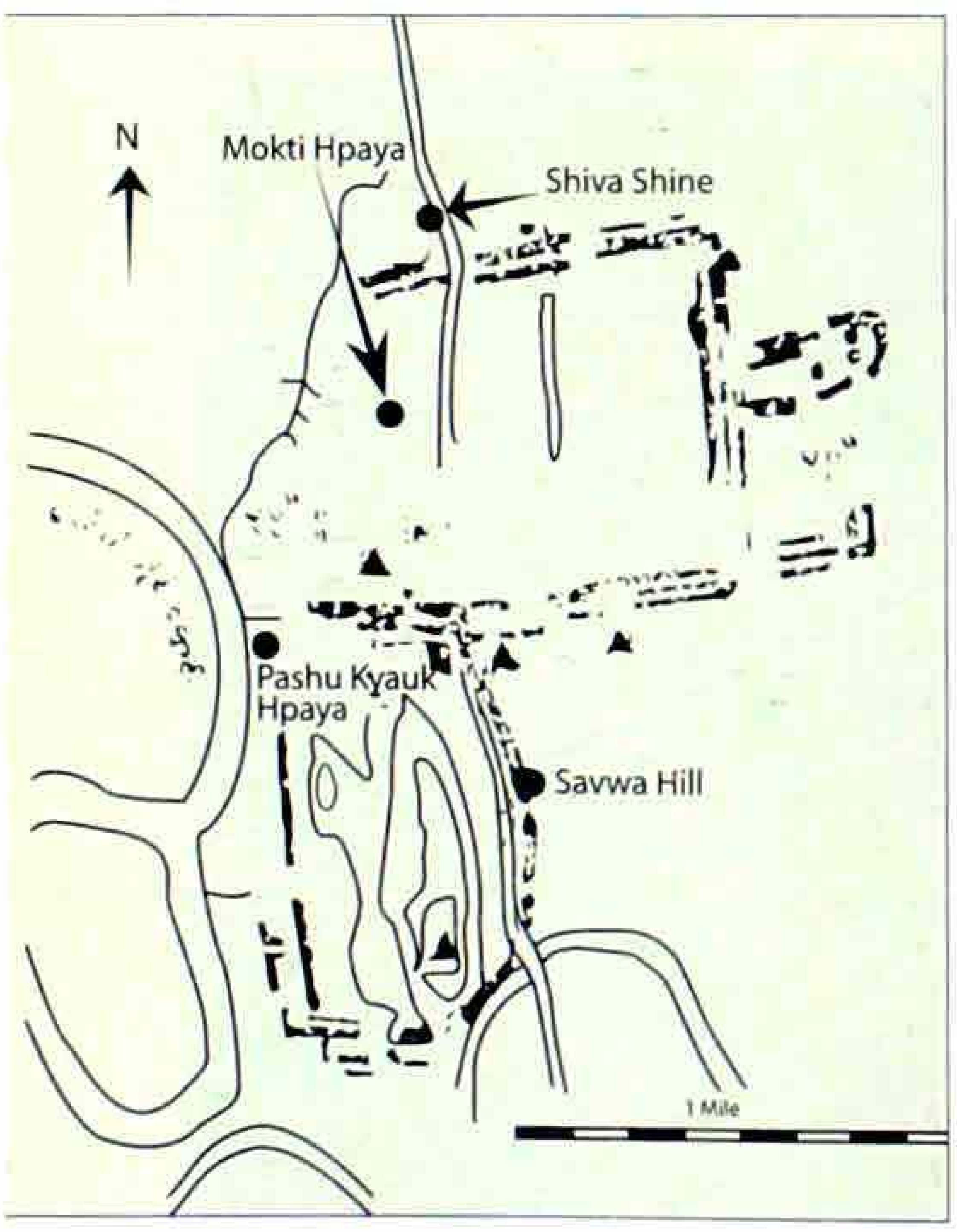
Above: Flat terrain west of Neimindara Hill, Thaton.

Domestic construction in one of the moats on the northwest corner of Thaton.



Thagara would once have had access to the Dawei River to the east and the Andaman Sea, over the mountain road to the west. Artefacts from a number of periods, from stone tools to glazed pots dating to *circa* the fourteenth century AD have been recorded at Thagara. *(After Aung Myint)*

Thagara urn with leaf motifs on shoulder, Hpaya Gyi Museum, Dawei.



Mokti refers to two walled areas, a more rectangular one around the *stupa* of Shin Mokti and the rounded wall around the Sawwa Hill to the south. Artefacts from the area include large votive tablets similar to ones found at Sriksetra, the east coast of Thailand and also the north coast of Java. Finely carved sandstone sculptures of Brahmanic figures in styles similar to Bagan have also been found. *(After Aung Myint)*

Thagara and Mokti (Sawwa)

Early archaeological sites on the Tanintharyi coast of Myanmar are little known in Western literature.[271] The abundant resources of the peninsula, however, supported a number of distinct walled cultures during the first millennium AD. The best documented to date are Thagara and Mokti, located 11.6 km north and 8.4 km south, respectively, of modern Dawei. Others along the Dawei River include Weidi, Sin Zeik and Aungthawadi, the last perhaps being the earliest of the group.[272] The area is also notable for the local dialect, a highly intonated variant of the Myanmar language. Although often linked to Bagan words, a majority of Dawei's particular vocabulary is indigenous Dawei.[273]

Later pottery and bronzes link Thagara to the east during the Sukhothai and Ayutthaya periods. Mokti has a mix of Hindu and Buddhist artefacts with *stupa*-type and *Makara* votive tablets similar to ones from Sriksetra. Its stone sculptures range from ambiguous Brahmanic figures on *sema*-type stones to fine sandstone images of Ganesh and other figures akin to Bagan. We have noted earlier the unique burial urns and glass beads from the Thagara cemetery, as well as finger-marked bricks. In previous chapters, we also mentioned the polished stone tools from this area, and the incised pottery and a stone mould for a metal ornament from ancient Tanintharyi south of Myeik. Another find from Thagara, a small bronze seated image of the Buddha (13 cm) seated in *pralambanâsana*, indicates local production. It is similar although somewhat cruder than sixth to ninth-century Dvaravati images or one from Twante.[274] However, the face of the Thagara piece is more angular with pronounced eyebrows and large coiled hair curls. The robe covers only one shoulder, smoothly draped over the body, the

Stone tools and beads from Thagara, Dawei, Tanintharyi Division. *(Thagara private collection)*

Stone and glass beads, including bull intaglio (*middle row*) from Thagara, Dawei, Tanintharyi Division.

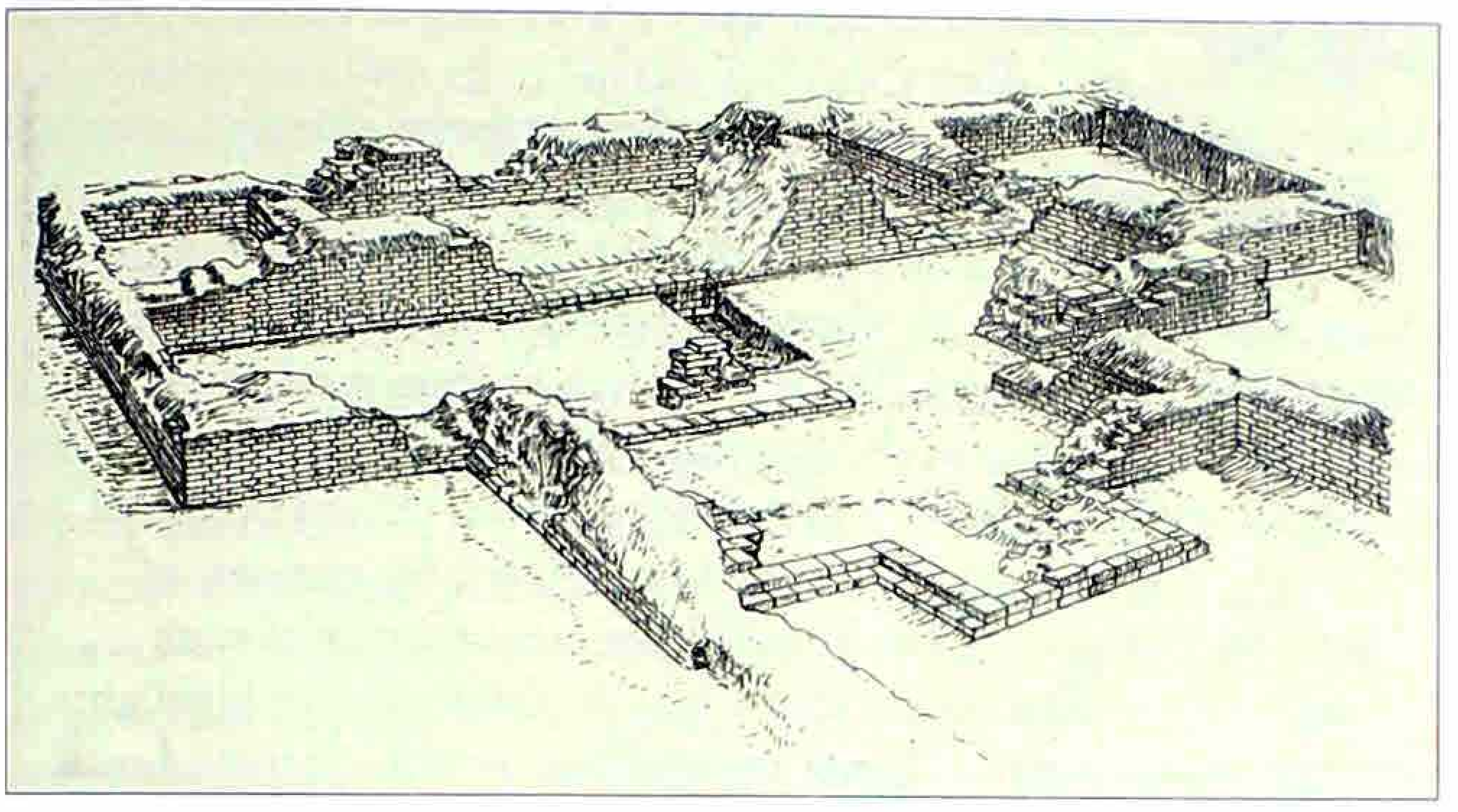
Bronze seated image (13 cm) of the Buddha, Thagara, Tanintharyi Division. Win Maung (Tampawaddy) has suggested the image alloy may contain a large percentage of lead.

Lower portion of finely carved sandstone image from Mokti, Tanintharyi Division; adorned with elaborate girdle, floral pendants and rosettes; *Kirtimukha* or *Bilu* on front and further floral garlands on legs. *(Hpaya Gyi Museum, Dawei)*

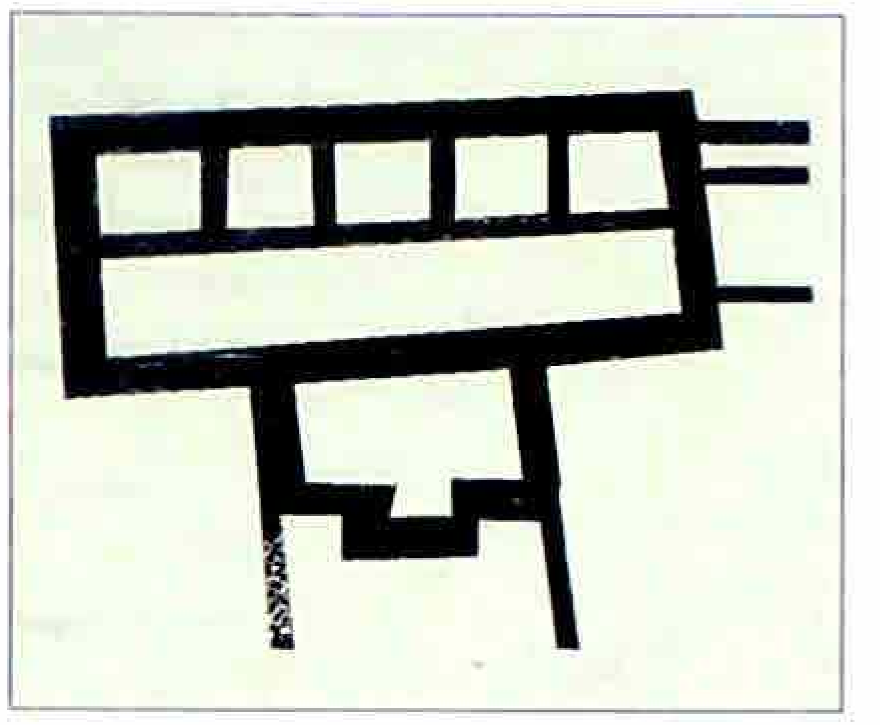
edges marked by a single incised line. The right arm is broken but may have been raised in the *Abhaya mudra*. The left is lowered with palm open and inscribed with a rough *Dharmacakra*. The head of the image is solid, although breaks on the chest and along the legs show that these are hollow.

Thagara or Myohaung (Old City) is an oval shaped (256 ha) mound, a floodplain site with access to both the Dawei River and the coast.[275] It is inundated during the rains but during the early dry months, the moats are used for nursery rice cultivation. There are up to four earth and brick walls at Thagara: two outer rounded ones (1,600 x 1,100 m) enclosing the mound and two inner quadrangular walls (745 x 640 m).[276] The shape of the walls is derived from that of the mound, similar to those in laterite areas further north. However, no large blocks of laterite are found around Dawei, with the few large pieces connected in legends to sites in the present day Mon State to the north. The first preliminary excavations were carried out at Thagara in 2001, unearthing two brick structures (SGR1 and SGR2) on the mound. SGR1 (8 x 6.4 m), overlying a habitation layer, had an entry platform with an inner and outer enclosure, and a square upper terrace (3.5 m).[277] SGR2, identified as a palace, is a long (10 m) rectangular brick building with an entry on the east, a single-chambered front hall and four small cells in a row at the back. The structure, due to the small size of the bricks and the layout, has been attributed to the late sixteenth-century AD. However, as it was rebuilt several times with different alignments, the presence of finger-marked bricks and two habitation layers in the 3.5 m stratigraphy suggest earlier occupation.

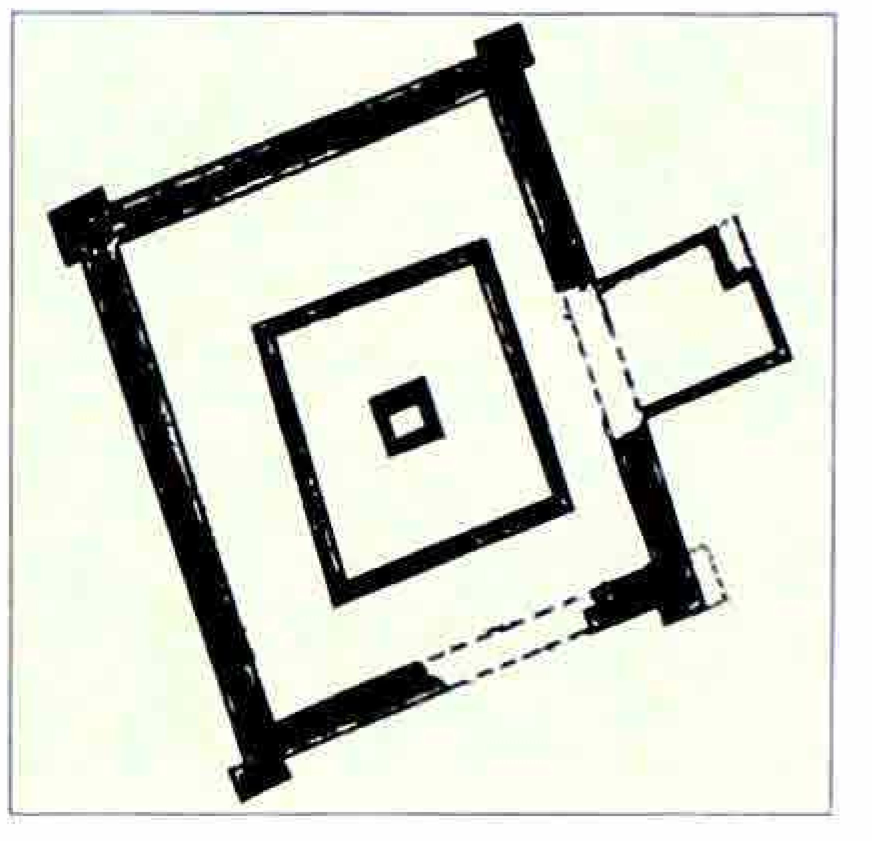
Although the Mokti and Thagara bricks are close in size, other artefacts from the two sites are distinct. Motki and its south sector, Sawwa, are on a slightly elevated ridge at the foot of the mountain pass leading to Thailand, both on a creek that flows into the Dawei River. Motki is a rectangular walled feature measuring some 800 m from east to west and slightly less from north to south. There are remnant walls, some triple, on the east, north and south. To the south is Sawwa (400 m north-south) also with multiple walls, but unlike the Mokti walls, those at Sawwa hug the perimeter of a small but prominent hillock. Two pagodas are venerated within Sawwa today: Pashu Kyauk, where the large image is said to have frightened away invading troops from Malaya. Also located here is a shrine with the large laterite bowl legendarily floated south by the queen of Thagara. As this probably apocryphal story suggests, the network of the southern coast connected traders to Sri Lanka, India, Rakhine, Thailand, Srivijaya and Java. Dawei's role in these relations since the first millennium has been great enough to sustain its contestation by Mon, Rakhine, Bamar and Thai people, with the contrasts between Thagara and Mokti illustrating the localized cultures that arose from such contacts.



Oblique drawing of SGR2 at Thagara. The 10 m long building is thought to have been a palace. Several layers indicate building over time, with the 16th century AD date given to the palace being the last of many. *(After drawing prepared for Than Swe)*



Plan of SGR2 at Thagara. *(After Ngwe Ngwe Soe 2000)*



Plan of SGR1 at Thagara. *(After Ngwe Ngwe Soe 2000)*

Excavated brick structure at SGR1, Thagara.

Sandstone Bagan period image of Ganesh from Mokti. *(Hpaya Gyi Museum, Dawei, Tanintharyi Division)*

Northeast moat and wall, Thagara. Inner and outer walls intersect on this side of the site, perhaps reflecting multiple periods of construction related to the seasonal stream to the north.

Green glazed pot with red-orange paste; bottom portion inscribed with vertical lines, small mole-like mammal draped over top, Thagara. *(Than Swe Collection)*

Stucco ornament and pottery from excavations at BT013 and BT016, Beikthano.

Summary

During the first millennium AD, settlement forms changed greatly, reflecting modifications in systems of inheritance, administration and land ownership. These sites did not instantly become states or 'kingdoms' for networks of authority fluctuated with competition for control. A Samon-to-Pyu or chiefdom-to-state model risks losing the complexity of the particular interactions seen at each site; one ends with a deceptively simple view of this critical period of change.[278] We have made little mention, for similar reasons, of Bagan, for the aim has not been to document the rise of state infrastructures. The purpose here is quite different – to highlight changes in the pattern of man's interaction with the terrain during the early and middle parts of the first millennium AD. In this, we have seen the cultural contrasts generated by the arid and wet, inland and coastal ecologies of Upper and Lower Myanmar.

In Myanmar, as elsewhere, Iron Age artefacts signalled agricultural intensification seen in the advent of ploughing and double cropping. Iron tools would also have been necessary to excavate moats and construct ramparts, with both their construction and maintenance carrying tremendous implications for the size and complexity of settlements. We have reviewed some of the artefacts reflecting the repercussions within the material culture of both Upper and Lower Myanmar. These included the use of brick, and the role of finger-marked bricks as an index of first millennium AD habitation in the many cases where full survey and excavation have not been carried out. Other artefacts such as urns, beads and coins are also shared in varying degrees at sites from Tagaung to Thagara.

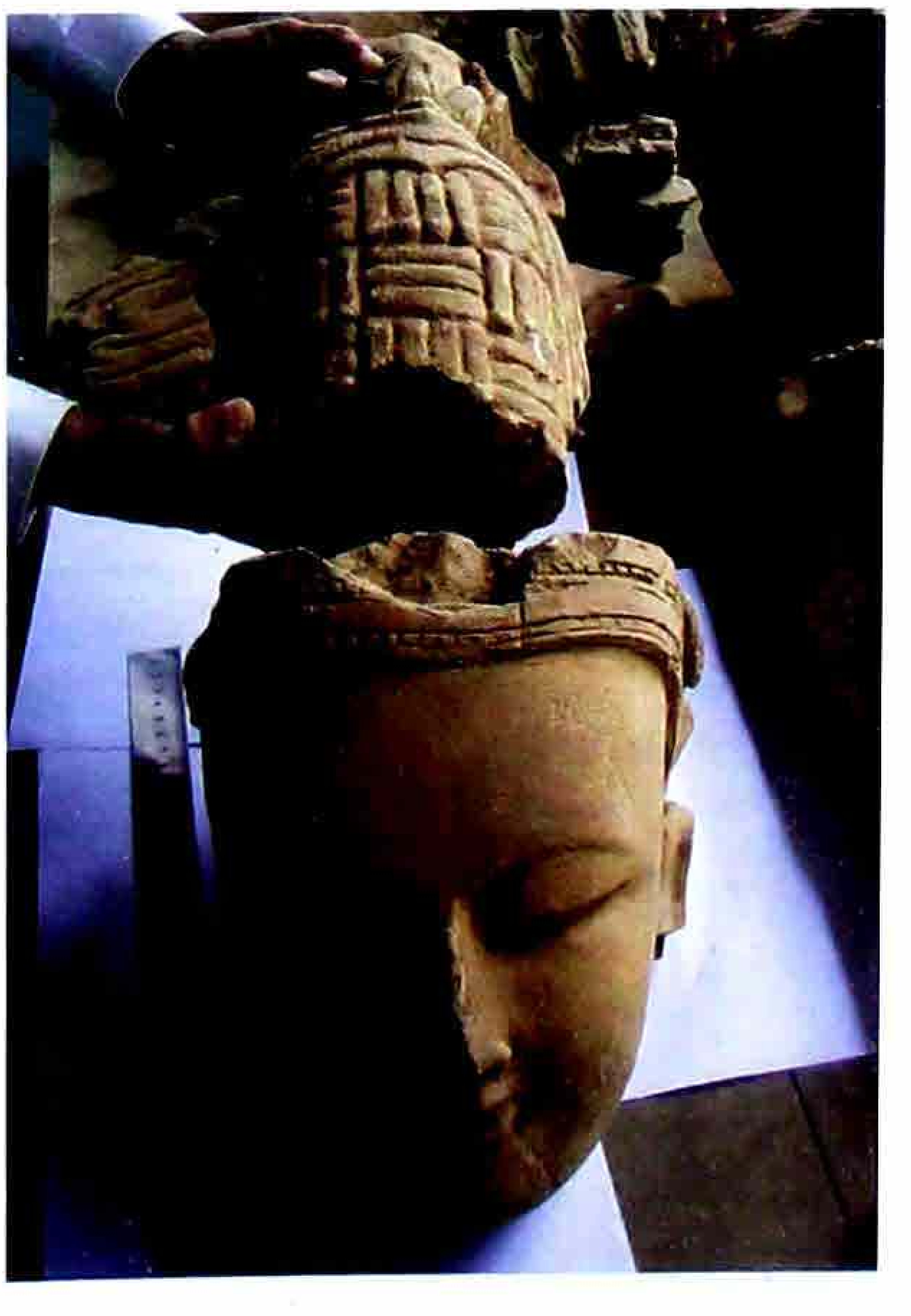
A review of some of the elements of Beikthano, Sriksetra, Halin, Tagaung and Maingmaw emphasised the unique character of each of these sites. Many other important Upper Myanmar walled sites such as Beinnaka and Waddi were also cited, along with excavations at the small non-walled site of Letpanywa near Beikthano beginning to clarify the widespread distribution of similar artefacts outside the major walled sites. There are many questions remaining about the construction of the walls at the so-called Pyu sites, suggesting that the placement of urns and *stupas* inside and outside reflects a liminal rather than exclusive role in relation to the interior walled area. In looking at the gates that punctuate these walls, the striking disparity of the larger structures at Halin recalls the extraordinary richness of this site in the context of the Samon bronze-iron culture. In relating Hindu-Buddhist walled settlements to the Yunnan-oriented 'mother-goddess' and *kye doke* cults of the Samon, the strategic location of Halin was probably crucial in ensuring its transition from one pattern of trading and rule to another.

Such competition, at least of a similar calibre, did not form the backbone of our discussion of the walled sites in Lower Myanmar. While the transitions were equally great in terms of social hierarchy, our emphasis in the south was the alteration of the terrain. In part, this was a means to give Lower Myanmar its due in the face of little excavation data. We cited laterite and brick walls, regularly using finger-marked bricks, although conscious that these are often not acknowledged as a viable first millennium AD marker outside the country.

A rigid chronology was not attempted to force the sites into a sequence. We noted the presence of artefacts and epigraphy from *circa* the 4th to 7th century AD in both Upper and Lower Myanmar. Given this evidence, it is probable that the construction of brick structures and walls at the clustered villages which became these sites started to be built somewhat earlier. This is consistent with the evidence, even if the very early part of the few radiocarbon dates is considered. However, the data at present is notably uneven, with for instance large quantities of iron from Beikthano obtained within a monastery structure but those at Halin from its fortifications.

Throughout our discussion of the transformations of the first millennium AD, we continued to draw in legendary accounts for their selection of places and the frequent correlation of these to ancient sites. The difficulty of matching chronicles and legends to archaeological artefacts generally means that they are left aside. Doing this, particularly in the case of Myanmar, means ignoring the context in which the chronicles arose and that in which the sites have been venerated for the last two thousand years. To appreciate the complexity that gave rise to the cultures and nurtured their survival, such evidence needs to be documented alongside geographical and artefactual data. With that, we return in the final chapter to a consideration of some of the wider contexts within which the artefacts described here can be interpreted.

Boundary stone, Kalyani Thein, Thaton.



Head of a Bagan-period *Bodhisattva* from Tagaung and detail of a *circa* 7th-8th century AD pillar from Sriksetra illustrate both the range of ritual and the longevity of habitation at sites in Myanmar.

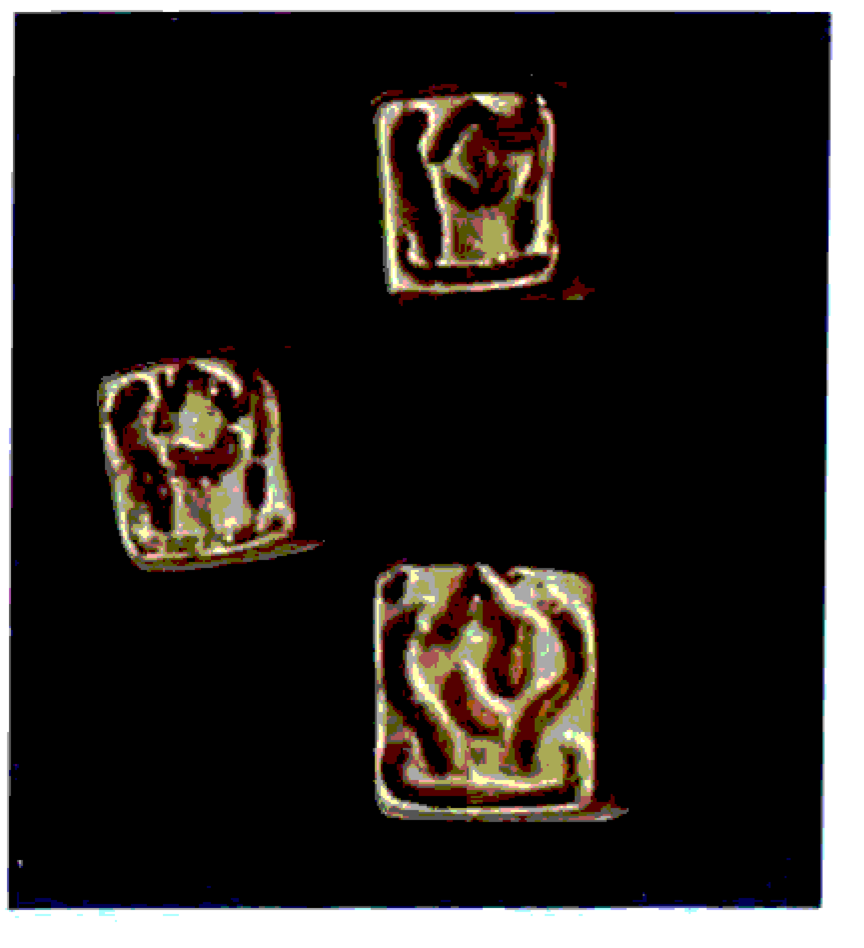
FOOTNOTES

[1] Aung Thwin 2005: 239, 317
[2] Aung Thwin 2005: 14-15
[3] Luce 1985: 47
[4] Aung Thwin 2005: 44; Nai Pan Hla 1992: 3
[5] Blom, Comer et al. 2003; Evans and Farr 2006; Lowenthal 1985; Tilley 1994
[6] Stargardt 1990, 1995
[7] Luce 1985: 140
[8] Aung Myint 1998b
[9] Stargardt 1990
[10] Htin Aung 1967: 11
[11] Aung Myint 1998b
[12] Stargardt 1995: 170
[13] Aung Myint 1998a, b; Moore and Aung Myint 1981, 1983
[14] Ngwe Ngwe Soe 2001: 11, 15
[15] San Win pers. comm. 2000
[16] Rahman 2000: 218
[17] Win Maung (Tampawaddy) 1991
[18] Ansari 1938: 44
[19] Rahman 2000: 221-226
[20] Myint Aung 1970: 40; Than Tun 1996b: 5
[21] Hla Tun Pru 2004
[22] Aung Thaw 1968: 2
[23] Duroiselle 1926: 83
[24] Aung Thaw 1972: 14
[25] San Win 1996
[26] Chit San Win 2004; New Light of Myanmar 2004
[27] Hla Tun Pru 2003: 80-85
[28] Myint Aung 1970: 60, Figure 5, 2003: 109, 113; Than Tun 1972: 209; Win Maung (Tampawaddy) 2004
[29] Luce 1969 Volume 1: 20
[30] Hudson 2004: 135; Myint Aung 1970
[31] Taw Sein Ko 1914: 120
[32] Aung Thaw 1972: 27; Guy 1999: 26
[33] Guy 1997: 90
[34] Luce 1985: 128-129
[35] Nyunt Han, Win Maung and Moore 2002: 3
[36] Gutman 1978; Mitchiner 1982, 1990; Mahlo 1998; Wicks 1992, 1995; Win Maung (Tampawaddy) 2002
[37] Gutman 1978: 9-10
[38] Woodward 2003: 53, Wicks 1992: 157-63
[39] Wicks 1992: 139
[40] Gutman 1978: 13
[41] Gutman 1978: 12-13
[42] Bronson 1968: 142; Wicks 1992: 118
[43] Hudson 2004; Mahlo 1998
[44] Win Maung (Tampawaddy) 2002
[45] Gutman 1978: 20
[46] Middleton 2005
[47] Gutman 1978: 18; Pe Maung Tin and Luce 1960
[48] Win Maung (Tampawaddy) 2002
[49] Gutman 1978: 12
[50] San Shwe 2002; Wicks 1985: 214
[51] Win Maung (Tampawaddy) 2004
[52] San Shwe 2002
[53] Stargardt 1990: 288
[54] Win Maung (Tampawaddy) 2002
[55] Myint Aung 1970: 61
[56] Gutman 1982: 17
[57] Mitchiner 1990: 18-9
[58] Woodward 2003: 40
[59] Ngwe Ngwe Soe 2001: Figure 25
[60] Luce 1974: 122
[61] Furnivall and Morrison 1914
[62] Aung Myint 1998; Hudson 2004; Win Maung and Moore 2006
[63] Baby 2000
[64] Gutman 1978: 18, 21
[65] Stargardt 1995b: 173
[66] Ngwe Ngwe Soe 2001: 15
[67] Leong Sau Heng 1990: 19
[68] Myint Aung 1999: 53
[69] Chhibber 1933: 32
[70] Tiva Supajanya and Pongsri Vanasin 1982
[71] Myint Aung 1999: 18
[72] San Win 1986
[73] Thaton District Gazetteer 1907: 11; Tin Gyi 1931: 44
[74] Higham 2002: 194, 226
[75] Tin Gyi 1931: 47, 52
[76] Tin Gyi 1931: 52
[77] Rahman 2000: 218-220
[78] Nai Pan Hla 1992: 50; Moore 2005
[79] Aung Thaw 1972: 40; Luce 1985: 161-2, Plates 70-11; Tin Gyi 1931: 28
[80] Woodward 2003: 55
[81] Stargardt 1990: 284-285
[82] Hudson et al. 2002; Win Maung 1997, 2000-01, 2004
[83] Aung Thwin 2005: 18
[84] San Shwe 2002: 3
[85] Beylié 1907; Taw Sein Ko 1905, 1908, 1914
[86] Aung Thaw 1968: 17, 51, Plate 42; San Shwe 2002
[87] Aung Thaw 1968: 17, 51, Plate 42; San Shwe 2002: 15-16
[88] San Shwe 2002
[89] Aung Thaw 1968: 17, 45, 49; San Shwe 2002: 8
[90] Aung Thaw 1968: 25
[91] Aung Thaw 1972: 4
[92] Aung Thaw 1968: 51, Myint Aung 1970: 61
[93] Bellina and Glover 2004: 80-82
[94] Hudson 2004: 132, 136
[95] Stargardt 1990: 207, 321
[96] San Shwe 2007
[97] Aung Thaw 1968
[98] San Shwe 2002: 17-20
[99] Boisselier 1975: 75-82
[100] Luce 1985 Vol. 2: 76(b); Myanmar Times 2003
[101] San Shwe 2007
[102] Brown 2001
[103] Hudson 2004: 136
[104] Aung Thaw 1968
[105] Than Tun 1979: 55; 1996: 5
[106] Than Tun 1965: 12
[107] Aung Thaw 1968: 5
[108] Chen Yi-Sein 1999: 86-87
[109] Nyein Lwin 2004
[110] Luce 1985: 49; Aung Thaw 1972: 16
[111] Luce 1985: 48
[112] Taw Sein Ko 1908, 1914
[113] Aung Myint 1998b; Aung Thaw 1972: 17
[114] Stargardt 1990: 46-47, 86; Thin Gyi 1965
[115] Duroiselle 1926; Stargardt 1990: 85, 91; Taw Sein Ko 1910
[116] Tha Hla and Nyi Nyi 1958: 92-3
[117] Aung Thaw 1972: 19
[118] Taw Sein Ko 1908: 3
[119] Taw Sein Ko 1908: 13
[120] Guy 1999: 17
[121] Aung Thaw 1972: 20, 24
[122] Guy 1999: 17
[123] Aung Thaw 1972: 24
[124] Aung Thaw 1972: 20
[125] Duroiselle 1925: 15
[126] Luce 1985: 48, 126-7
[127] Duroiselle 1915: 147
[128] Blagden 1917
[129] Hla Tun Pru 2003; San Win 2001
[130] San Win 2001
[131] Hla Tun Pru 2003
[132] Gutman 2002: 41
[133] Gutman 1999: 36; Guy 1999: 18
[134] Luce 1985: 148
[135] Brown 2001; von Schroder 1990: Plate 48A
[136] Duroiselle 1930
[137] Guy 1999: 16
[138] Duroiselle 1930; Luce 1985: 136, Plate 27
[139] Luce 1985: 137
[140] Guy 1997: 88, 1999: 19; Stargardt 2000: 23
[141] Stargardt 1995
[142] Luce 1985: 137
[143] Brown 2001: 38; Dupont 1959: Figures 118, 477-480
[144] Stargardt 2000: 25
[145] Duroiselle 1930; Luce 1985
[146] Duroiselle 1930: 179; Luce 1985: 136-39

[147] Stargardt 1995b
[148] Stargardt 1995b: 201
[149] Stargardt 1995b: 204, 210
[150] Luce 1985: 139
[151] Myint Aung 1970: 57; Than Tun 1996
[152] Hla Tun Pru 2003
[153] Myint Aung 1970
[154] San Win 1996: 10
[155] Taw Sein Ko 1908
[156] Aung Myint 1998b; Than Tun 1996
[157] Aung Thaw 1972: 13
[158] Aung Myint 1998b: 31
[159] Hudson 2004: 134
[160] Backus 1978: 83-89; Guy 1995: 64-65
[161] Myint Aung 1970
[162] Aung Thaw 1972: 13; Hudson 2004: 134; Luce 1985 volume 1: 149; Nai Pan Hla 1972
[163] Luce 1985 volume 1: 66, 149, volume 2 Plates 51-53
[164] Hudson 2004: 134
[165] Guy 1995
[166] Luce 1985: 150
[167] Myint Aung 1970: 57
[168] Hudson 2004: 135
[169] Hudson 2004: 136; Myint Aung 1970
[170] Hudson 2004: 136
[171] Hudson 2004: 135; Myint Aung 1970
[172] Myint Aung 1978
[173] Hudson 2004: 134
[174] Hudson 2004: 128
[175] Hudson 2004: 135
[176] Guy 1995: 67
[177] Khin Htay 1959: 170
[178] San Win 1996: 6, 10
[179] Mahlo 1998; San Shwe 2002, 2007; Win Maung 2002
[180] Chit San Win 2004, 2005
[181] San Win 1997
[182] Kan Yong 1985: 61, Figure 7
[183] Chit San Win 2004, 2005; New Light of Myanmar 2003, 2004
[184] Win Maung (Tampawaddy) 1997
[185] Pe Maung Tin and Luce 1960: 3
[186] Than Tun 1979
[187] Moore and Aung Myint 1991: 85, Figures 1, 5; Map 2, 3
[188] Win Maung (Tampawaddy) 2004
[189] Aung Myint 1998: 14-5
[190] Aung Myint 1998b; Moore and Aung Myint 1991, 1993
[191] Aung Myint 1998; Moore and Aung Myin 1983
[192] Stargardt 1990: 124
[193] Duroiselle 1938, 1940
[194] San Win 1985: 199
[195] Aung Thwin 2002: 35; Duroiselle 1940; Guy 1999: 27; Knox 1992: Pls. 6, 11, 14; Luce 1985: 167; Ramachandran 1940
[196] Luce 1985: 167, Plate 80a
[197] Luce 1985: 162, Plates 71 b, c; 166, Plates 78c, d
[198] Boisselier 1966: 146, Figure 33a
[199] Briggs 1951: 78, Figure 13
[200] Brown 1996: 143-148, Figures 5a, b, c, 58a
[201] Ngwe Ngwe Soe 2001: 15; Phasook Indrawooth 2004: 134; San Win 2005: Figure 8
[202] Chirapravati, Pattaratorn 1997
[203] Guy 2002: 24
[204] Guy 2002: 31; Mya 1966: Part II
[205] Guy 2002: 29
[206] Luce 1985, Plate 58a; Pattaratorn 1994: 125, Figure 43
[207] Mya 1961, Volume 2, Plates 61, 63
[208] Gutman 2001: 57; Luce 1985 Plate 61a; Mya 1966: Plates 22, 60b
[209] Dupont 1950: Plate 497; Mya 1961: Plates 10-15
[210] Guy 1999: 25, Figure 12
[211] Luce 1985 Vol. 2: 61(a)
[212] Mya 1966: Figure 60
[213] Pattaratorn 2000: 183
[214] Luce 1985 Volume 2: 30(e)
[215] Boisselier 1975: 69; Dupont 1959: 92, Plates 336-7, 165; Le May 1938: Plates 3, 4
[216] San Win 2005
[217] Than Tun 2005
[218] Dowling 2000
[219] San Win 2004, 2005
[220] Furnivall 1914; Luce 1969
[221] Luce 1969: 20
[222] Tin Gyi 1931: 27-28
[223] Shorto 2002: 577, footnote 1
[224] Aung Myint 1998a: 111
[225] Aung Thwin 1998: 13
[226] Shorto 2002: 573
[227] Aung Myint 1998: 104-5
[228] Moore and Aung Myint 1991: 93; Wicks 1992: 113
[229] Moore and Aung Myint 1991: 93
[230] Moore and Aung Myint 1991: 93
[231] Tin Gyi 1931: 28
[232] Lè Lè Win, San Win, Sanda-U field notes 2002
[233] Ngwe Ngwe Soe 2001
[234] Ngwe Ngwe Soe 2001: 15; Phasook Indrawooth 2004: 134; San Win 2005: Figure 8
[235] Woodward 1997: 123, Figures 140, 143
[236] Luce 1985: 165, Figure 76d
[237] Aung Myint 1998: 107; San Win 1986
[238] Tin Gyi 1931: 27
[239] Mya 1961(2): Plate 22
[240] San Win 1986, 2002
[241] Aung Thwin 2002
[242] Htin Aung 1970: 28
[243] Tin Gyi 1931: 29
[244] Duroiselle 1928: 111
[245] Myint Aung 1999: 19-20
[246] Glover 1998: 22; Ray 1946/2002: 20
[247] Aung Thaw 1972: 40
[248] San Win 2002
[249] Tin Gyi 1931: 110
[250] Myint Aung 1999: 23-4
[251] Myint Aung 1999: 53
[252] Myint Aung 1999: 46
[253] Myint Aung 1999: 29-30, 43, 50
[254] Myint Aung 1999: 50
[255] Myint Aung 1999: 53
[256] Moore & Aung Myint 1991: Map 12
[257] Luce 1985: 160-1, Plates 67-69
[258] Aung Thaw 1972: 40
[259] San Win 2005a: Figure 9
[260] Thin Gyi 1958: 147
[261] British Burma Gazetteer 1897: 715
[262] Aung Thaw 1972: 35; Luce 1969: 24; Moore and Aung Myint 1991: 94, Map 9; Thin Gyi 1958
[263] Baby 2000
[264] Luce 1985: 170-1, Plates 88-90
[265] Phasook Indrawooth 1998: 117
[266] Srisuchat 1998: 101-104
[267] San Win 1986
[268] Aung Thwin 2005
[269] Htin Aung 1970: 28
[270] Aung Thwin 2005: 302
[271] Moore and Aung Myint 1991: 93-94
[272] Moore & Than Swe 2007; Than Swe 1996
[273] Moore and Than Swe 2007
[274] Luce 1985 Vol. 2: 76(b)
[275] Imperial Gazetteer 1908: 438
[276] Moore & Aung Myint 1991: Map 11
[277] Ngwe Ngwe Soe 2000
[278] Johnsen and Olsen 1989; Tilley 1987: 49, 81

Chapter Six

The Early Landscape



This page and opposite:
Most of the gold objects associated with Pyu cultures have probably been melted down, and others are generic shapes that can be difficult to identify. In cases such as these gold pieces (all 10 mm or less) the detailing on the conch bead parallels that of South Asia, which along with the *Bhaddapitha* and *Srivatsa* decorates the face of the 'dice' beads. *(T&O collection)*

Trade and technology

A radically early chronology for the walled sites of Myanmar was not proposed in the last chapter. Quite the contrary, we pointed out that the majority of artefacts date conservatively to *circa* the 5th to 9th century AD, that epigraphic dates are approximate and that the few radiocarbon results tell us little about when or why walls were built. The dates from walls at Halin, for example, come from wood from the gates; they do not date the walls.

The walled site cultures of Upper and Lower Myanmar were present but changing from the Neolithic onwards. This is not a picture of one or two dominant groups but many who began to construct wall segments in response to a continually changing ecological, agricultural and social environment. Iron tools provided a crucial means to alter the terrain, seen in expanding rice production and the erection of walls. The features on either side of the walls, however, do not divide the landscape: these are integral to the wall and are part of their identification.[1]

The use of gold and silver appears to have risen in tandem with agricultural and technological output. Inland and coastal sites were strategically located to control resources such as land, salt, ores and semi-precious stone. Exchange networks branching out from Myanmar were well established by at least the first millennium BC and accelerated in the 4th to 6th century. Coedès' 'second Indianization,' this paralleled political and religious change in Gupta India and with the fall of the Han dynasty, expansion of Buddhism in China.[2] In this context, it was an era during which Chinese interests in Upper Myanmar intersected with those of south and north India. As we saw earlier, this competition was also a factor in the gradual disappearance of the Samon Bronze-iron 'mother-goddess' culture and the rise of the walled sites associated with the Pyu peoples. Both the Samon and Pyu cultures, however, were made up of many smaller 'tribes.' Thus the rise of larger political units during the later centuries of the millennium saw both a hiving-off within the existing population and possibly new intrusive elements arriving by overland and maritime routes.

Yunnan exchange: silver, gold

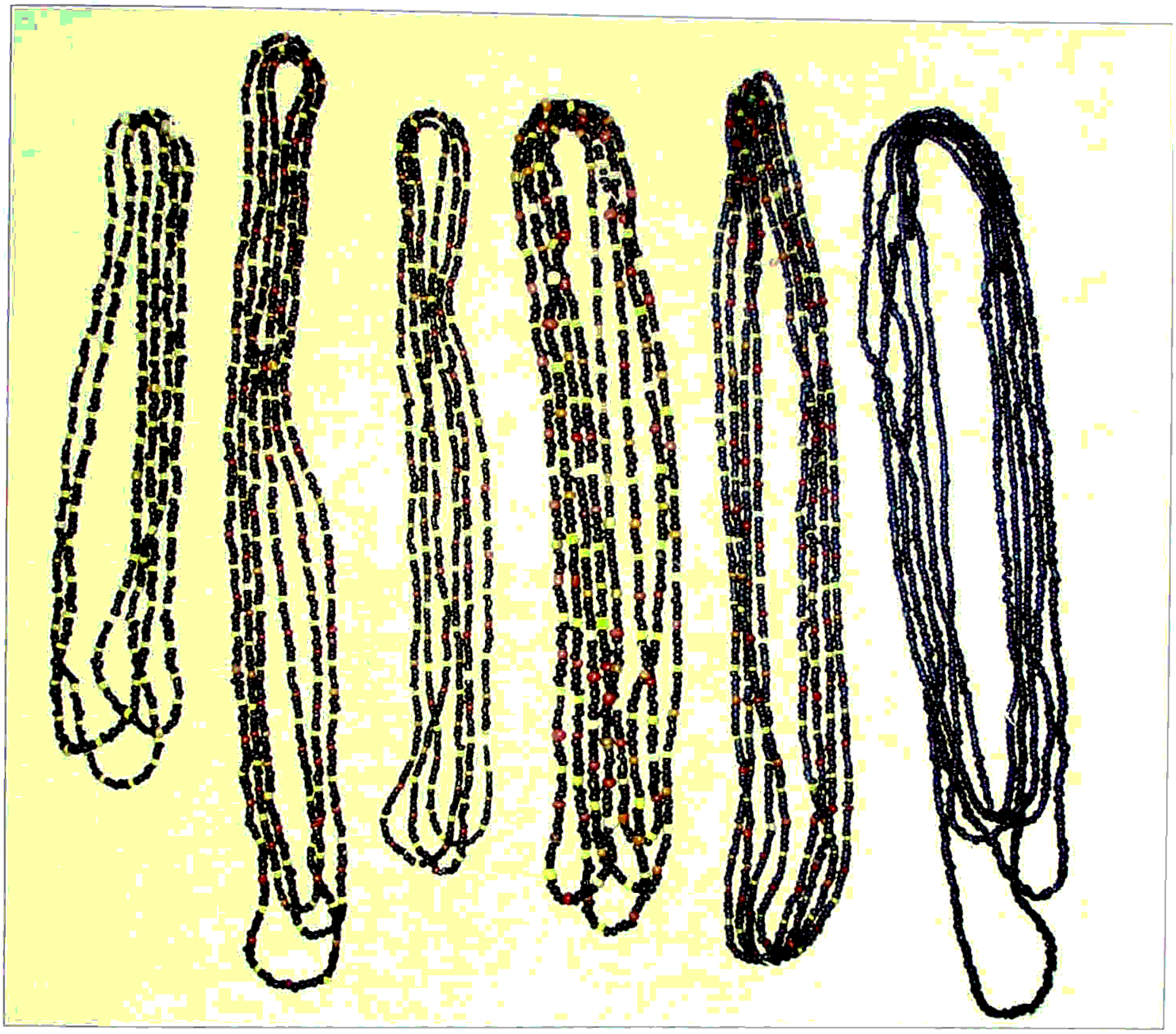
Geographically, Myanmar is closer to South Asia than any other country in Southeast Asia. There was contact with Sri Lanka and southern India along the coast and across the bay. In Yunnan, the headwaters of the Ayeyarwaddy and Thanlwin are found. From there, the plains of the central basin opened out. Several well-used early trade and military routes between India and China passed through Myanmar, including a road to the west up the Chindwin through Manipur and one to the northeast through Bhamo.[3]

One of the overland commodities was precious metal, notably gold and silver. Neither metal was extensively worked before the rise of 'Pyu' cultures with only a few gold artefacts from the Samon. The rise of technology to smelt silver from a lead-zinc ore seems to have been particularly well developed by the Pyu peoples, perhaps given their proximity to major deposits.[4] By the middle of the first millennium AD, with increasing wealth, social and religious changes, a range of personal and ritual goods were made from gold and silver. One of the most widespread that we have looked at are the silver coins, and although rare and generally in private collections, gold coins are also found in Upper and Lower Myanmar.

Scripts dating to the 4th to 5th century AD, possibly later, are seen on the fine 66 cm-high gilded silver casket and a number of inscribed gold plates we discussed in the last chapter. Personal gold ornaments include stirrup-shaped rings, bracelets, armlets, anklets, pendants and hair pins, with offerings such as gold foil, dice beads and inscribed plates. Production of these objects in precious metals involved a wide range of techniques such as granulation, chasing and repoussé, filigree, forging, mounting, and mastic filling. Other objects valued as status markers and possibly for their protective powers were intaglios and seals. Most of these found at Upper Myanmar sites are dated to the 7th to the 9th century AD, although there are a number of motifs placed in the 4th to the 6th century AD including Gupta-type seated lions, recumbent bulls, Sanskrit and Pali inscriptions, and Sasanian-derived motifs such as the bust of a man.[6]

Many other commodities such as semi-precious stones and salt were also traded, but the elaborate use of silver and gold underlines the economic expansion of the time and the key role that the Ayeyarwaddy played in this network. The Upper Myanmar polities associated with the Pyu first came to the attention of the Han dynasty as traders, with the Ayeyarwaddy providing an important route for shipment of silver from Yunnan overland to India and the Mediterranean as well as south. Local workshops have not yet been identified, but as seen with beads, intaglios and sealings dating to the first millennium AD, there are enough regional differences to suggest abundant local production and make it difficult to pin down an 'origin' within Myanmar.

The sudden expansion of the metal trade is linked to the break in the Roman bullion exchange with India in the mid-first century AD with a subsequent rise in Indian trade, particularly from the southern Andhra coast.[7] Silver from the mines on the southern Shan Plateau was traded down the Ayeyarwaddy, with other sources recorded in Bassein. Coastal areas have been linked to the *Chryse* and *Argyre* or gold and silver land referred to by classical



Small beads from urns found in the cemetery area outside the walled site of Thagara, Dawei, Lower Myanmar. Unlike the urns of Upper Myanmar, the Thagara ones contain only one to five beads per urn. *(Than Swe collection)*

geographers. For instance in the 1st century AD, Ptolemy described the Rakhine region as *Argyre*, and silver brought down to the mouth of the Ayeyarwaddy may then have been traded up the coast of Rakhine and on to the Chittagong area.[8]

Southern trade

Other routes went east along ports around the Gulf of Muttama, then down to Malaysia and Indonesia and on to the China coast. Some authors contend that these coastal routes were the principal means of trade, with older trans-peninsular accounts over-emphasised.[9] Probably goods were transported both ways, along the coast and via other networks going over the mountains to Dvaravati sites such as U Thong, Ku Bua and Nakon Pathom in the Lower Chao Phraya plain. An Early Han account of trade in pearls, glass and rare stone of about 100 BC mentions a year-long journey from south China to India, with a ten-day long overland portion possibly over the Three Pagodas Pass. While this is the major route from Mawlamyine, Wheatley also notes the Three Chedi pass from Dawei, mid-way along Tanintharyi Division, to Ratburi Province in Thailand.[10]

Intaglio with Bull, grey chalcedony (?) and carnelian.

Intaglio with *'Ye Dhamma'* verse. Both reportedly from Srikestra. *(Private collection)*

South of Dawei was the old port at Tanintharyi, possibly Tun Sun mentioned in 6th century AD Chinese records. Both Dawei and the Myeik-Tanintharyi areas would have been ports of call on a so-called Maritime Silk Route tied into sites along the coast of Thailand and the Malay peninsula. These included Chaiya, Nakhon Si Thammarat and Yarang, identified with Panpan, Tambralinga and Langkasuka, respectively.[11] The later significance of the south to Bagan can be seen in a signed votive tablet of Anawratha recovered in Myeik, an inscription of the 11th century AD Saw Lu near Maunglaw, southeast of Myeik, and two tablets from Shin Mokti at Dawei inscribed by governors of Kyanzittha's reign (1084-1113AD).[12]

Chiefdoms and States

Wheatley describes these societies as increasingly heterogeneous chiefdoms, a transient phase leading to the rise of states. With the state, competing factions adopted rival deities, sustained warfare supplanted sporadic raids, and fission could be controlled over a substantial period of time.[13] As Lieberman has noted, there is no sign that any of the pre-Bagan walled cities of the arid Upper Myanmar plains controlled more than a limited sector of the basin.[14] This also appears to be the case in Lower Myanmar, where rival walled sites formed part of trade networks, probably similar to Vickery's profile of Funan and Champa coastal areas, where a "coterie of port-based chiefdoms" fluctuated in power in relation to international trade.[15]

Inland, the sequence of Pyu centres traditional begins with Tagaung, followed by Beikthano from *circa* 200 BC until the end of the 4th century AD. It then was 'conquered' by Sriksetra, the pinnacle until the 8th century when both it and Halin perished.[16] However, a more fractured rise and fall of polities was likely, suggested for instance, by passage in Chinese records about a kingdom known as Chin-lin on a large bay over 2,000 *li* west of Funan. Another 2,000 *li* west was Lin-yang, accessible only by overland routes. Chen Yi-Sein identified Lin-yang as Beikthano, its demise attributed to Khmer occupation from 210-225 AD followed by the Mon. At this time the city was given the names of Panthwa or Ramaññapura, Sinicised as Lin-yang. Finally, according to Chen Yi-Sein's reading, in the 5th century AD, Pyu forces from Sriksetra destroyed Beikthano, ending the history of the city.[17] An invasion of Beikthano in 205/210 AD during the reign of the Funan king Fan Shi-Man (Sirimara) is not specified in accounts of Funan. As we noted in the last chapter, however, San Shwe has provisionally called some of the structures at Beikthano 'Monized.'[18]

If this account is interpreted in broader terms such as Austroasiatic and Tibeto-Burman rather than the more biased terms of Mon and Pyu, the Chinese records may simply have been noting shifting dialects of the fluctuating chiefdoms at Beikthano. For indeed, what does come through the tangle of stories is that the Tagaung, Beikthano and Sriksetra lineages were marked by abrupt changes in power, something noted by Tun Aung Chain in his

Small *stupa* backed by mountains bordering Thailand, east of Mokti, Dawei, Tanintharyi Division.

analysis of inscriptions on the five large stone urns from Sriksetra:

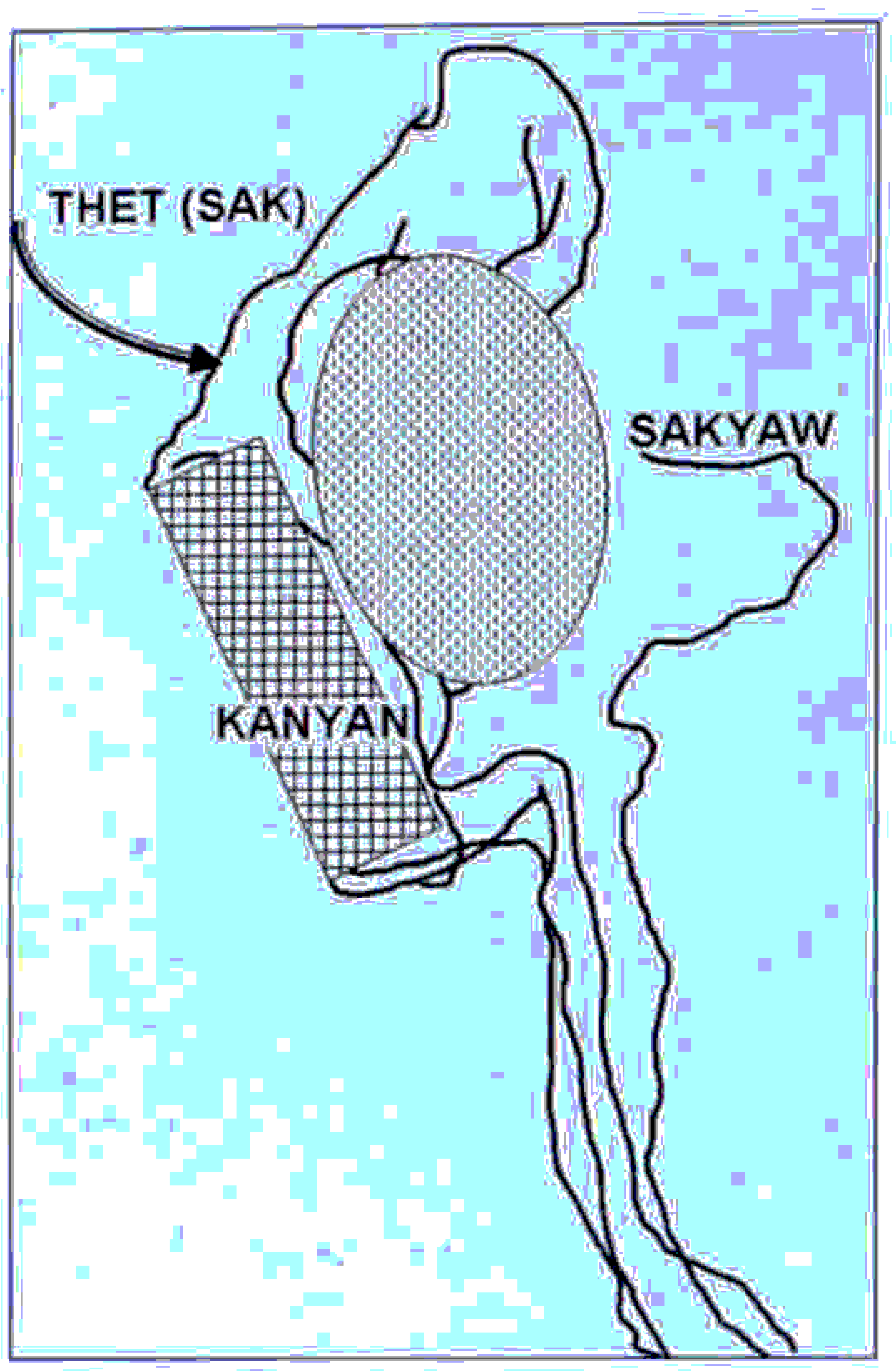
"...one feature stands out in the king-list – the total absence of a son succeeding a father. Without the principle of primogeniture firmly established court politics tends to be complex and disruptive. Despite the long reign of Suriyavikrama, and presumably that of Harivikrama, one has to suppose continual intrigues and struggles at the court of Sriksetra."[19]

These struggles persisted for the better part of the first millennium AD as the amalgamation of Indic cults forged new political and religious structures. In the constant fluctuations, *how* these functioned is part of *what* they became.[20] We focus on the pattern of change within the thousand or so years during which chiefdoms developed, where the remains left on the ground today reflect a constantly renewing relationship to the local ecology by a multiplicity of small groups.

Fluctuating populations and built forms

The majority of these groups probably fell within two main language families mentioned above in connection with Beikthano, the Austroasiatic "the most geographically fragmented language family in Mainland Southeast Asia and eastern India, and the Sino-Tibetan, 'rake-like rather than tree-like in structure'". For the latter, the Sino-Tibetan, this may suggest an early radiation, ones that do not 'lend themselves to homeland identification'.[21] Bellwood's characterizations are in relation to the earlier dispersal of rice farming but as noted by Bayard, the lowlands of the first millennium BC may have approached the contemporary highlands in the complexity of multiple languages and dialects, with people perhaps changing dialects as expedient.[22] The presence of many fluctuating groups seems likely. However, this is separate from the appearance of Mon and Pyu scripts.

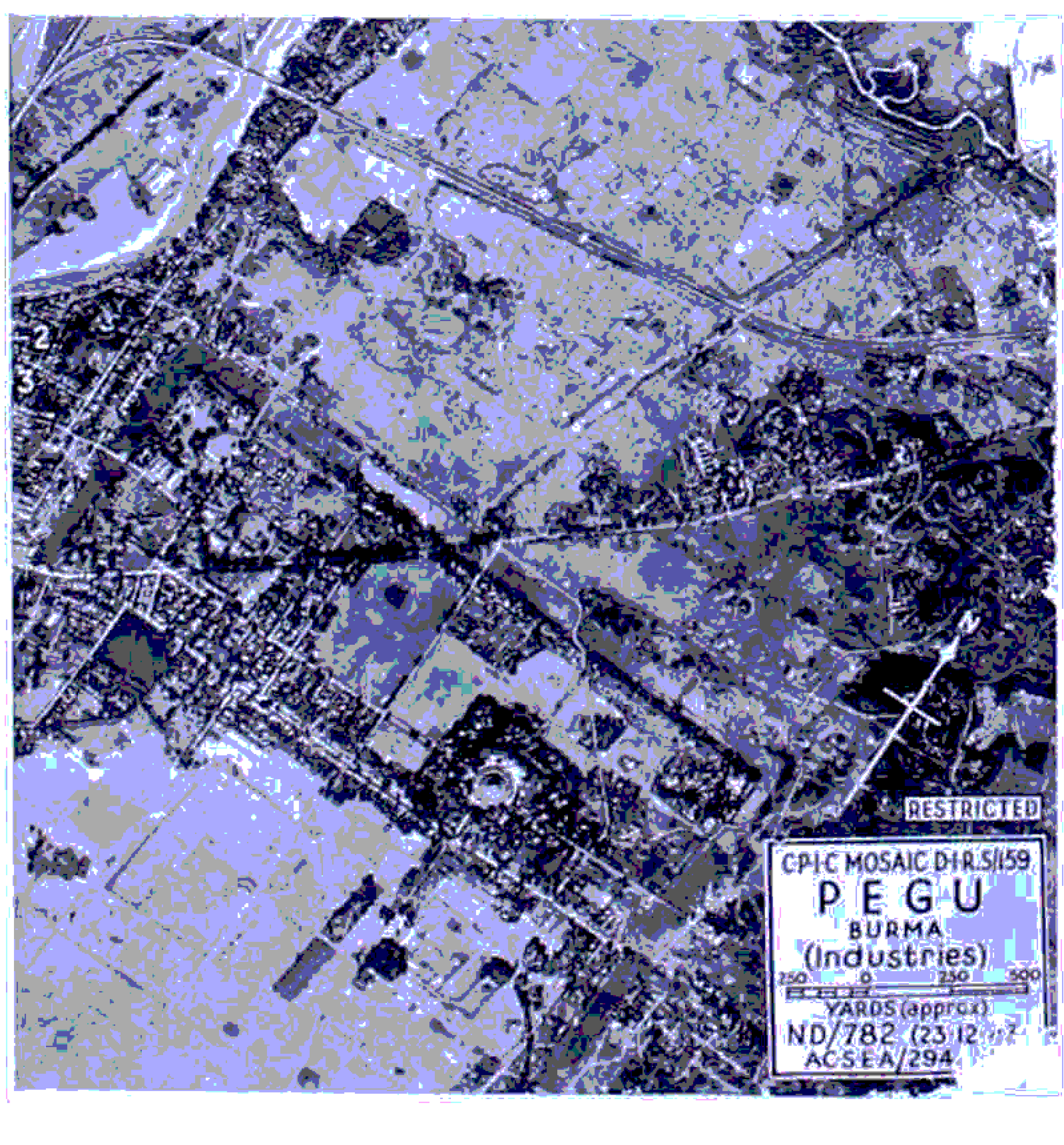
At present, the earliest evidence of Mon script comes from Nakhon Pathom and is dated to the 6th or 7th century AD. As a



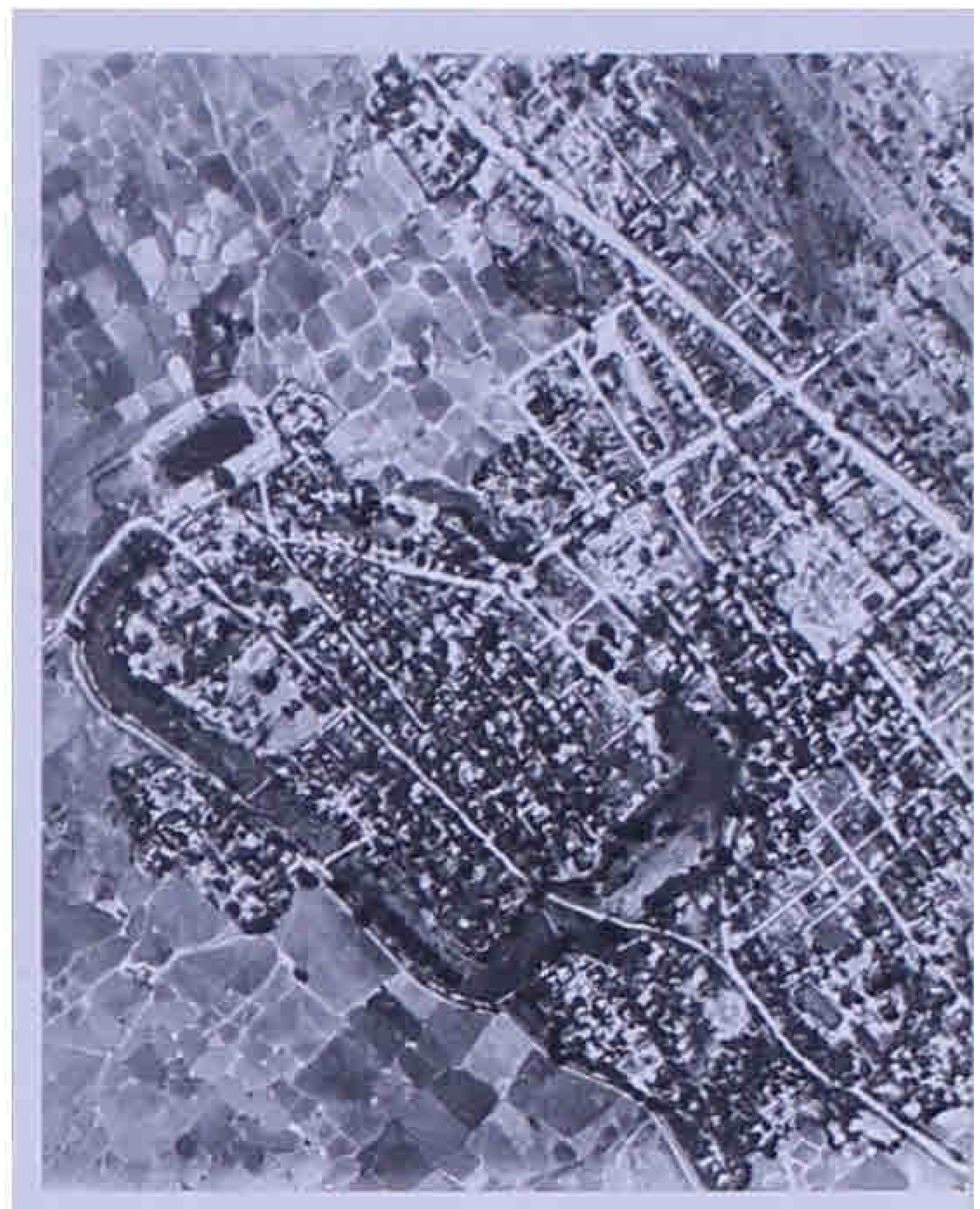
Luce has suggested that the Thet (Sak) mentioned in the chronicles brought Buddhism to Myanmar via the northwest. To the geographical point of reference can be added the Kanyan and Sakyaw, groups that Luce linked to Karen language-speaking peoples but whose names in the Za-bu-kon-cha chronicle simply refer to their dwelling along the bank and along the water. *(After sketch map by Win Maung (Tampawaddy))*

result, many authors conclude that the Mon arrived in Lower Myanmar from Central Thailand in the later part of the first millennium AD. Aung Thwin also sees the Mon script in Myanmar as derived from Bamar (Burmese) scripts rather than having served as an origin for the Burmese script as has been presumed for many years.[23] Earlier Pyu scripts do exist, possibly from the 4th century AD, but although two scripts evokes two units, but there were many Sino-Tibetan groups, not only those that survive in chronicles such as the Sak-Kantu (Thet Kadu), the Kyan (Chin) and the Pyu (P'iao, Tircul).[24] Some references speak of 18 dependent kingdoms and nine garrison cities, the principal one perhaps nearest to Nanchao. The tribes of the Pyu are also mentioned in various Chinese texts, their number ranging from 298 to 32.[25] Luce called the Sak the 'most numerous and cultured' peoples of Upper Myanmar during Pyu times and labelled Tagaung the Kadu 'eastern capital' in the 11th century AD.[26] We mentioned earlier other suggestions that Beikthano was once occupied by the Kadu, giving a sense of numerous groups that the archaeological record suggests should be multiplied several times over.

Among these many groups were the populations of the Samon Bronze-iron sites. It is not yet clear how the 'Pyu' settlements related to the Samon, for the two overlap both geographically and possibly chronologically.[27] It may have been a simple expansion to areas on the periphery of the Samon as Hudson proposes. This model, based on the location of the 100+ hectare walled sites of Maingmaw, Beikthano, Sriksetra, and Halin, is useful for setting out the relationship of these four centres to the Samon. However, Samon artefacts are abundant at Halin and Pyu deposits are rich in the Samon areas such as Pyawbwe where Bronze-iron cemetery sites are clustered.[28] The "spatial model ignores landform, and takes the size of each enclosed site as its only variable."[29] However, many walls, such as those at Beinnaka, are not fully documented, site size was changed and, as Hudson shows for instance with the Paw-daw-mu (Temple 996) at Bagan, brick structures were rebuilt time and time again. It is thus problematic to assign dates to their foundation, size over time or duration of each phase.[30] At Tagaung and at Sriksetra, there was no rigid template to be 'realised' but a series of interlocking cycles built into the structuring of the landscape.[31]



Walls were rebuilt as different groups vied for resource control and patronage. There has not been systematic excavation or dating of Pyu fortifications, with only two radiocarbon dates from Halin from under gate passageways, one where a number of skeletons were found, rather than the walls. Fortifications, particularly the wooden gates that have provided datable material, could have been raised quickly for defensive purposes but as we have seen in the placement of religious structures, protective artefacts and inscriptions around the outside of the walls, the liminal area of the wall included zones on both sides of the built structure. Walls were built repeatedly, with excavation of South Asian sites such as Kosambi and Nagarjunakonda indicating initial use of mud, followed by brick and in some cases, mud-plaster coating.[32] Sometimes the new fortifications would be on top of the old, but not always. At Sriksetra, for instance, the eastern wall has long been recognised as of a different construction and at Beikthano, while a western wall has been detected, the large *in-gyi* or lake may have provided natural protection and the structure of the northern wall is different from the other sectors.



The first millennium AD history of Yamethin, Mandalay Division, remains unexplored but it is in the midst of the Samon bronze-iron site distribution. Photo 3043 EA/537 19 DEC 44 F34"681. *(Williams-Hunt Collection, SOAS)*

The integration of an array Hindu-Buddhist sects would have signalled profound changes to both social hierarchies and communities. Whereas earlier kinship-based systems of veneration honoured local lineages associated with place, new systems of patronage extended positions of ritual and political honour, affecting land ownership and inheritance. While a widening pattern of patronage, sects and land control had a ripple-like effect, the inability of rulers to prevent fission probably brought continued change to chiefdoms along the Middle Ayeyarwaddy. For instance, as we saw earlier, the followers of the last king of Tagaung, split into three bands, moving to areas among different Tibeto-Burman groups, the Pyus, Kanyans and Thets (Sak).[33] In short, the picture is one of multiple languages and dialects. Borders were spatially and temporally permeable, although the literature is filled with references to the Pyu and the Mon that imply clear and fixed borders. To give some idea of the movement of Mon-Khmer, Tibeto-Burman and T'ai peoples across the landscape, we turn briefly below to a local custom, tea-eating or *la-phet-thoat*, and a bronze horse from the Samon Valley.

Opposite: No finger-marked bricks have yet been recorded at Bago, east of Yangon, but it is reasonable to believe that this was an ancient site. CPIC MOSAIC DIR 5/159 23 DEC 42 ND/782. *(Williams-Hunt Collection, SOAS)*

Meiktila Lake is said to have been constructed by the Bagan king Anawrahta but the site is near to that of Myin u Le where the first bronze 'mother-goddess' was found. CPIC MOSAIC ND/721 28 NOV 43 ACSEA/643/G. *(Williams-Hunt Collection, SOAS)*

Bronze horned animal from Myauk Mee Kon, Pyawbwe (10 cm high). *(T& Q collection)*

Tea-eating and men on horses and child-eating ogres

Nineteenth century AD Konbaung records say 'tea-eating' is traditionally attributed to the Shans, part of the T'ai language groups.[34] Indeed, in the Shan States, it is customary to offer plain tea, often with a pinch of salt, and much tea is grown in this region. But Thai people do not take *la-phet* in pickled form. Recent ethnographic studies in southwest China link 'tea-eating' to isolated Mon-Khmer.[35] However, the eating of pickled tea and containers for *la-phet-thoat* are most closely associated with Myanmar peoples. The place of *la-phet-thoat* in Myanmar tradition is reflected in a saying recorded by U Po Nya. This notes that those who boast of going to make an offering to the family of the deceased and pay respects to the body, but in reality go to enjoy *la-phet-thoat*, are not well appreciated by the Buddha. *La-phet-thoat* has also traditionally been taken at the close of a successful negotiation.[36] Negotiation and Buddhist norms relate to the second example of horses, one of intrusive groups from the north negotiating with the indigenous population and the Buddhist cultures of the Pyu.

The Pyu are thought to have come south from around Kokonol Lake, Kansu via the Tapain and Shweli Rivers. As we saw above, the fall of Tagaung traditionally led to a tripartite division of the population: the Kanyan and Thet established *Thunapayanta* (*Sunapranta*) at Bagan, the Pyu moved down the Ayeryarwaddy, and another group founded the 19 *Kharuin* of Kyaukse.[37] In the last of these is Maingmaw.[38] A notable find from Maingmaw are numerous terracotta plaques bearing the figure of a man on a horse. Few have been preserved, with the use of many for a well noted during ground survey in the late 1970's.[39] Luce saw these as one of the four celestial horses of Vishnu, but the plaques may recall the movements of changing groups for the Maingmaw, and Sriksetra, horse plaques are all different.[40] We saw a related pattern of similar but individual designs on roof tiles from Tagaung, Inle and Sriksetra. The variations suggest many fluid (and diverse) groups.

Some of these, perhaps Tibeto-Burman, appear to have been in contact with those of Yunnan. As noted, cemeteries around Dian and Erhai (*circa* 400 BC-100 AD), are linked to equestrian tribes from the northwest moving into the area.[41] At Shizhaishan, cowrie containers bear three-dimensional sculptures showing native farmers wearing their hair in buns and equestrian peoples with their hair in plaits.[42] While data remains scarce, weapons not agricultural tools, are the norm in the Samon cemeteries, and one double burial at Hnaw Kan was associated with the deposit of a horse.[43] It is also possible that the disappearance of Samon *kye doke* and 'mother-goddess' figures relates to the arrival of groups such as the Thet (Sak), Tibeto-Burmans traditionally having migrated into northwest Myanmar. While most explanations relating culture to migration involve north to south movements, groups from areas such as the Samon had long moved south to north as well. Record of at least one such movement may be the supposed exile of the decimated Pyu population by Nanchao in the early 9th century signaling the rise of Bagan.

Bronze horse recovered in the Samon Valley. *(Private collection)*

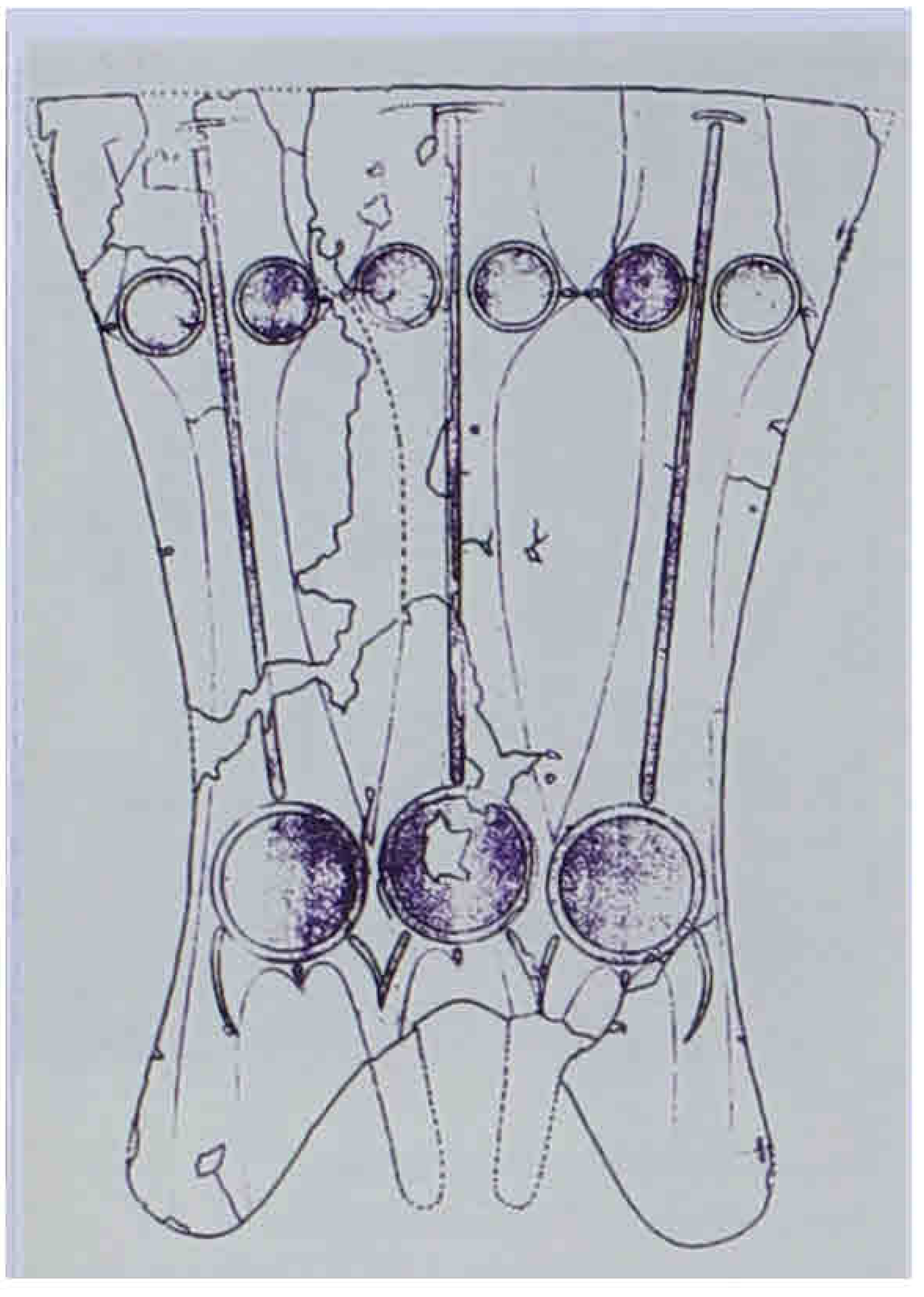
Linking material culture to a particular group is laden with ambiguities given the variable names and biases of the sources – and the different ways that 'groups' are defined. The sources range from Chinese records, to local chronicles of uncertain date and royal compilations. In each case, those who commissioned compilations influenced the material included and excluded. This also affected the names – and meaning – given to places and events. Some groups, such as the Thet (Sak) are associated with language-speaking families but others such as the Kanyan and Sakyaw are less clearly linked being named in only relation to place – literally the peoples living 'along the bank' and 'along the water'. Thus while each source is useful, all give a different perspective and make it vital to recognize the contexts in which they arose. This also applies to the work of later historians such as Gordon Luce, cited below in connection with the presence of 'earlier' or 'indigenous' groups.

Luce noted that some of the feathered figures depicted on the sides of the Dian drums from excavations such as those at Shizhaishan resemble the Austronesian Kalimantan Dayak groups.[44] The presence of earlier Austroasiatic or Austronesians is common in legends of Rakhine, Mon State and Tanintharyi Division. For example, with the purported arrival of Asoka's missionaries in the 3rd century BC, child-eating ogres from the sea are said to have been defeated by a more fearsome creature with two lion bodies and a man's head. The *manothaya* at Kelasa stupa overlooking the sea, traditionally links the site to this triumph. However, a similar legend exists in Rakhaing, where the name is derived from the Pali Rakkha (or Sanskrit *Rākshasa*), the Myanmar *bilu*.[45]

The *bilu* are generally associated with the 'sea gypsies' or Salon (Moken) of the Myeik Islands. They are sometimes related to the Pisacas, in turn connected to Negritos or Kappali in Myanmar, and used as a name for the Andaman Sea.[46] The tradition of Zothoke has the daughters of two ogre brothers cutting their long hair to make ropes for tying around a golden relic casket.[47] While couched in legend, it is possible that submission of local tutelary guardians carries memory of a changing land ownership as new social and religious hierarchies were introduced. Apocryphal as it may be, the account is useful for its allusions to changing social processes and religious beliefs. It is this that is of interest, the retention of place within a welter of legends continually under production.

Religious and social change

As the incorporation of ogres and ropes of hair suggest, what each of these groups and regions became was determined locally, a process of becoming whose memory is embedded not only in the landscape but in the chronicle accounts, traditional histories and epigraphy. It is important to consider these sources, not as factual in a Western sense, but for their social memory of past places. The Buddha-isation of many regions, from Tibet to Southeast Asia, was not an altogether peaceful process as social structures underwent major change. [48]



Triple 'mother-goddess' figure (height 72 cm); Nyaung Yan, Thazi Township, Mandalay Division. The seeming headless form recalls bronzes from Chengdu north of the Yangze River. *(Drawing after Win Maung (Tampawaddy))*

It seems probable that the kinship system of the small Samon chiefdoms allowed for only limited economic and political expansion. Nonetheless, within Wheatley's characterization, these varied from non-ranked chieftainships comparable to segmentary tribes, to paramountcies that could 'approximate to true states.' The less developed chiefdoms were hereditary whereas the more highly ranked revised the basis of their control away from one of kinship, moving from a system of 'patriarchy' to one of 'patrimony.'[49]

In 8th century AD inscriptions of Funan, Vickery noted a change in protocol as kings and officials replaced clan-based inheritance in positions of authority. This also appears to have marked a shift from matrilineal to patrilineal rule.[50] Under the former system, inheritance was through sisters' sons, and the domain controlled by the chief or *poñ* varied from a hamlet to a large village or supra-village. In the case of hamlet-sized chiefs, there might also be one *poñ* with greater authority than the others. Gutman has noted the presence in the early part of the 8th century AD Anandacandra inscription of Rakhine of ancestral monarchs whose power reached beyond a single villages or groups.[51] In Funan, the early centuries AD, the rulers of higher ranked *poñ*-doms often used Indic rather than Khmer names. This was one of a number of changes, others including supplanting male with female deities and the use of *mratāñ*, all signalling major modifications to systems of inheritance. Much of the inscriptional evidence relates to coastal communities, with Vickery making a notable point about the use of terms such as 'king' and 'state':

"The Chinese found rulers with titles which they interpreted as 'king', and they thus described Funan as a country with kings, presumably a state, and this conception was taken over by the first modern scholars, although by the definitions above, it appears rather as a chiefdom."[52]

Vickery's caution on the use of 'king' and the conflation of titles and states fits well with similar use in the literature on the Pyu. Other relevant aspects of the Funan analysis include the shift from matrilineal to patrilineal systems of land inheritance and the role of coastal polities. We looked earlier at traditions associated with coastal developments around the Gulf of Muttama. As for alterations in inheritance, it is one of many areas where more data is needed. There are nonetheless possible indications in the few known Pyu genealogies in inscriptions and chronicles, conceivably with the 'mother-goddess' figures of the Samon valley, and in Mon traditional accounts. And whether or not inheritance norms changed, certainly as local rulers began to adopt Indic names and incorporate new norms, systems of land control were modified during the early first millennium AD.

When expanding agriculture and trade are considered in tandem with land ownership, the depth of transition occurring in the first millennium AD begins to be seen. This involved the authority of the ruler, the newly forming Hindu-Buddhist communities, earlier systems of land management and deep-seated perceptions of place. Although we do not know the precise mechanisms at work in the early first millennium AD, the records of later developments at Bagan and during Dhammaceti's rule offer some idea of the themes that may have underpinned such change.

Landscape and social changes

Records of Mon King Dhammaceti's 15th century AD religious and political reforms afford a template, not of what earlier changes were, but the degree to which they affected the administrative and ritual hierarchy of local communities. Royally sanctioned ritual change was intimately linked to control of land and place many different periods.[53] At Bagan, for instance, Aung Thwin has shown that during the 9th to 13th century AD, the union of church and state institutions fundamentally changed patterns of land ownership and the accumulation of wealth.[54] One way the king could gain control of land was to construct ordination halls for monks to constitute his newly purified *Sangha*. These communities ensured that the religion would flourish and equally, would support the state. In Dhammaceti's time, ordination halls were built on land ritually purified by the king which he then rendered free from tax. The entire process helped to maintain a small and united *Sangha* and served the interests of the state.[55] These conclusions are similar to Bechert's observations on the ideology underlying the relationship between the state and *Sangha*:

"A hierarchical structure was the best practical means to enforce the control of the *Sangha*; for it was virtually impossible to keep under control a *Sangha* which consisted of a large number of non-connected groups of monks."[56]

In addition to construction of ordination halls, Dhammaceti brought earlier cults with their land within his newly purified Theravada structure. One of these was the *Dewatu Sotapan* or 'Stream-winners,' where female and male *Yokkha Soe* or tree spirits were given land rights upon joining the royal Buddhist network. As detailed by Shorto, *the Dewatu Sotapan* is described in the *Nidanarambhakatha*, a mid-16th century AD encomium on Dhammaceti.[57] Thirty-six Stream-winning gods to whom Dhammaceti gives white umbrellas are listed, plus further 15 lesser gods venerated seasonally. While about half of the *Dewatu Sotapan* are located around the capital at Bago, the others stretch south to Dawei. Notable exceptions to the predominantly male spirits include the ancestor-goddess (*dewatu bau*) of Thanlwin. Within the cult, however, all 36, having benefited from proximity to the teachings of the Buddha, enter into the first of four stages towards being *Arahat* or 'Noble Ones.' In this way, Dhammaceti was able to bring the local spirit pantheon and its associated lands, under his authority.

Thus Dhammaceti in some cases built on newly purified land and in others brought land under the jurisdiction of local cults into the royal Buddhist structure. The process drew upon the

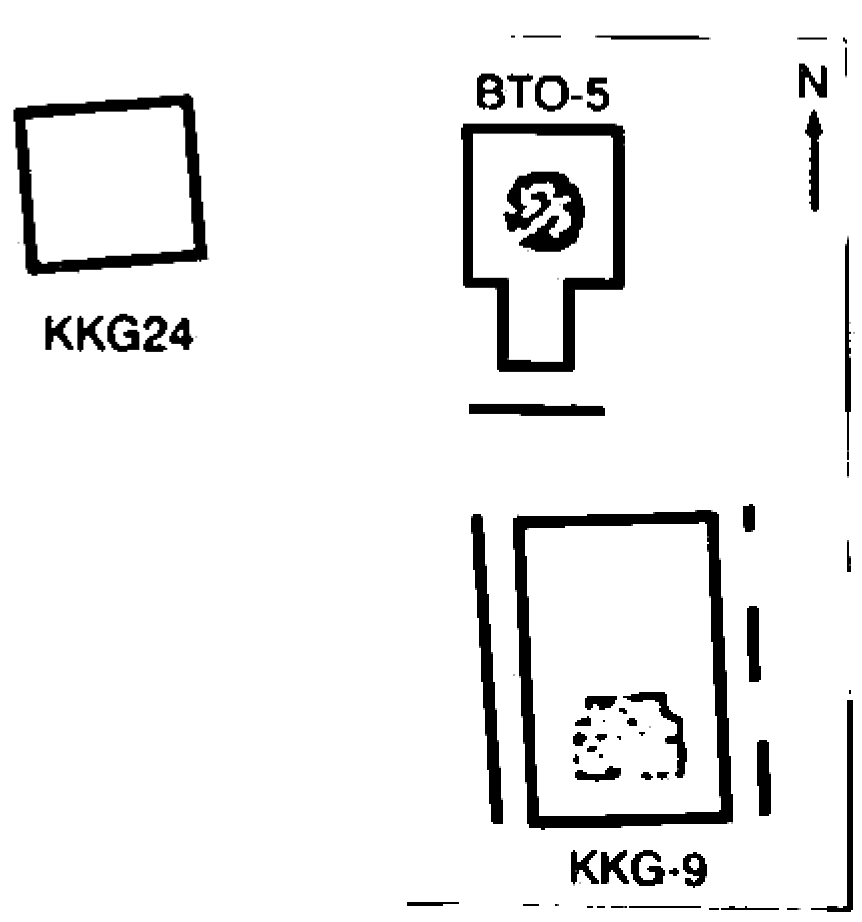
Unexcavated stone urns in the Beikthano Queen's Cemetery located outside the walls of Sriksetra.

international Buddhist practice of his day, but it worked because of a quality stemming back to the early period of Theravada practice in India – its ability to incorporate previous localised structures. Remnants of earlier processes merging chthonic and Buddhist practice can also be seen in various ways at walled sites in Upper and Lower Myanmar.

Clusters and urns

One of these begins with the understanding that "the landscape is never complete; neither 'built' nor 'unbuilt,' it is perpetually under construction."[58] Much of this construction related to the establishment of new religious communities. At Beikthano, for instance, San Shwe has identified clusters of facing structures of what were probably different sects within the site. One group (KKG24, KKG9 and BTO5) is located along the southern 'partition' wall, which runs south from the palace enclosure. KKG9, a rectangular structure, possibly for ordination, faces north towards a square *stupa*-like structure (BTO5). In the northern part of the site, three clusters are seen. One (KKG2, 3, 4) includes a long (29 x 10 m) rectangular monastery (KKG2) with eight rooms of equal size. This faces a large circular *stupa* (KKG3) and *stupa*-like structure (KKG4).[59] Another cluster of three rectangular buildings is just north of this (BTO8, 9, 10), where 1996-1999 excavations recovered urns, iron nails, shallow clay oil lamps and 'children's toys'.[60] North of this is another cluster (KKG11, 12, 14) excavated in the 1960s. Each cluster varies in the form of the buildings and the objects that have been recovered, although a similar patterning to the KKG2, 3, 4 group is also found at Nagarjunakonda, one of the many *stupa*-monastery arrangements documented by Sarkar.[61] Likewise in the south at Winka, WK5 (18.7 x 16.2 m) with a line of seven rooms along the back wall is thought to have been a monastery, located west of a laterite *stupa*, Kumarazeidi (Rajamuni).

In addition to building clusters, demarcation of associated monastic land can also be read in use of burial urns at Pyu sites. For instance, 40 terracotta urns were interred when the rectangular memorial hall KKG9 was erected in the south of Beikthano and 80 at KKG12, a square structure near the north wall. The thin walls of the urns mean that few have been recovered intact. Some may have been purpose made, but many different shaped vessels, such as flasks, were used. The purpose-made urns were made of a coarse clay, contrasted to a fine levigated clay for decorated wares, and a medium clay for ordinary vessels. Most of the urns had tapering sides and were flanged at either the mouth or base. While some pieces of pottery from Halin were decorated stamped panels or impressions, the urns were plain. The lid of one terracotta urn, however, has been likened to the structure of *stupas* thought to have evolved only in the late 11th century AD.[62] In addition to bone and ash, urns often contained precious offerings. For example, early in the 20th century when workmen were putting up scaffolding on the Bawbawgyi stupa south of Sriksetra, a terracotta urn was recovered



Cluster KKG9, KKG24, BTO5 at Beikthano.
(Drawing after San Shwe)

some 180 cm below the dome. Inside the pot were inscribed silver and gold scrolls, five silver coins, small pieces of jadeite, and bone ash.[63]

At KKG9 and also KKG11, the long rectangular halls once had wooden columns. Stargardt has labelled this type of structure 'pre-Buddhist' based on the pillared form of the building and the use of cremation burials in Iron Age contexts in Southeast Asia.[64] San Shwe aptly notes these as 'memorial halls,' suggesting that when sufficient urns were accumulated and a donor came forward, the construction was consecrated.[65] The pillared ritual structures that Stargardt cites are seen with the 'men on horses' discussed earlier on the three-dimensional scenes on Dian cowrie containers. Given the links between the Bronze-iron culture of the Samon valley and Yunnan, the continuation of earlier architectural norms with the adoption of Buddhism is to be expected. Nor would cremation or secondary burial have been unknown, with regional examples of the former provided by the Iron Age Sa Huynh culture of Vietnam and the later by ethnographic example of the Chin peoples of Myanmar. Amongst the Chin at the end of the 19th century, a corpse was first kept for one or two years until a feast could be held, and then laid in an open coffin raised above the ground until only bones remained. These were then gathered and placed in an earthen pot.[66]

However, neither was inhumation within the precinct of a ritual structure a break with Buddhist norms of the first millennium AD. The inscription on the stone urns from Sriksetra establishes their place within a royal context, in this case Buddhist, as does the presence of terracotta urns in the foundation layer not just of pillared halls but numerous *stupas* and *stupa*-like structures inside and outside the walls of Upper Myanmar sites.[67] But it is likely, as seen at Amaravati and Nagarjunakonda, that Buddhist sites were built on top of burial grounds. Schopen notes that by this practice monks situated themselves within the already existing religious landscape. It also fit well with the custom of burying monks within stupa complexes and erecting *stupas* for monks as in many cases this is interpreted as a memorial structure to enshrine monks within local community.[68] The point, now well documented in India, is that new Buddhist communities literally and figuratively built upon previous practice, thereby embedding localisation in the honouring of the *Sangha*.

A similar pattern may be emerging at Halin, where Bronze and Bronze-iron finds have been excavated. The majority to date are located just south of the city wall near the Shwegugyi stupa, the lower part of the site where streams converge and the salt fields are found. It is also on this side of the wall where radiocarbon dates from under two gates (HL10 and HL17) indicate construction possibly in the early centuries AD. The HL17 gate, an inward curing structure some 5.1 m wide, was also the one where a collective burial was documented by Myint Aung, with it unclear whether the 40 skeletons were a primary or secondary inhumation.[69]

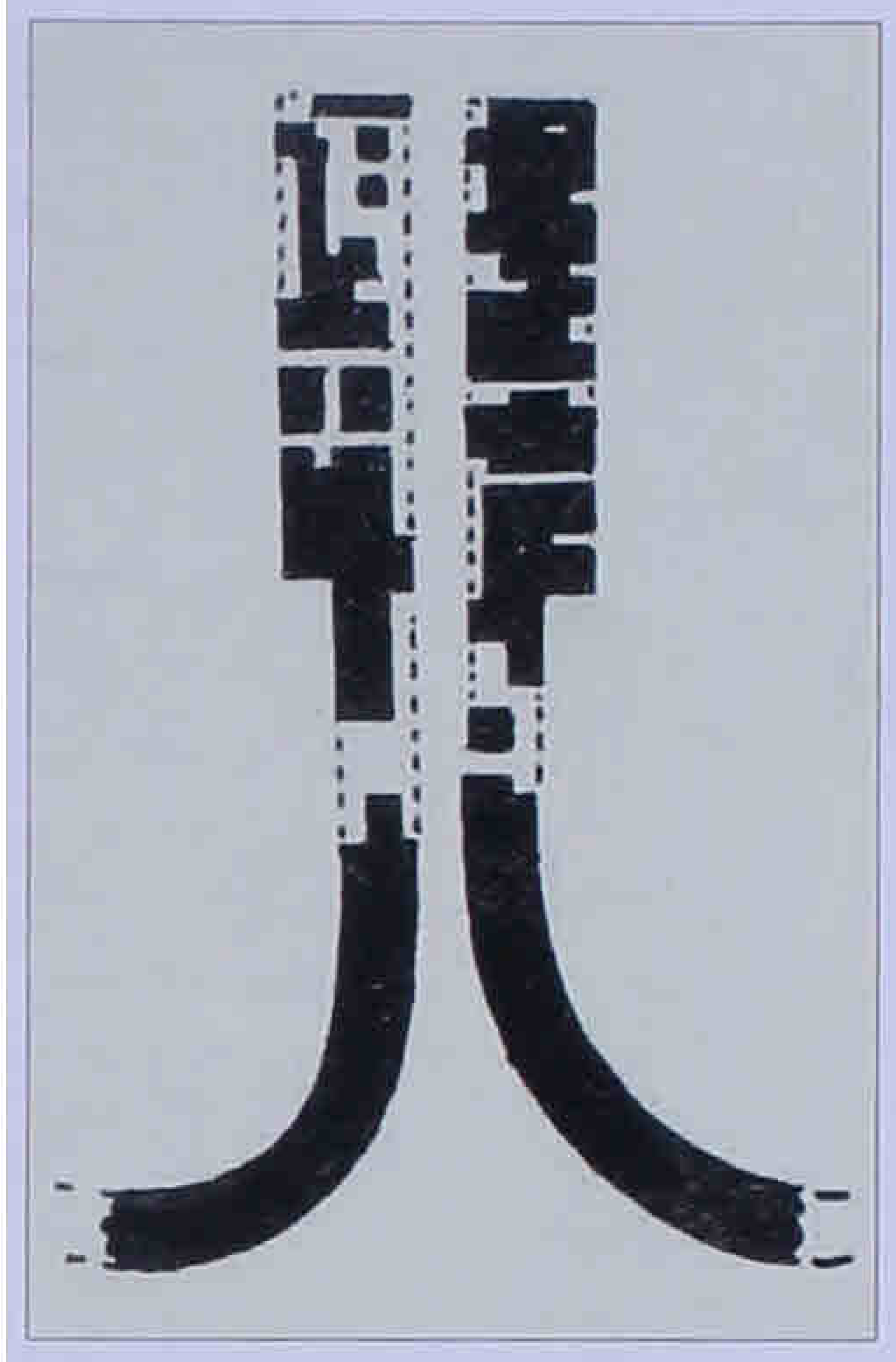
Detail of typanum on bronze drum kept in Sagaing showing a pillared structure probably a rice barn The drums from Myanmar may have been part of what Calo' has called the 'Dian sphere of influence'.
(Photo by Win Maung (Tampawaddy))

The data on HL10 also has ambiguities, with four urns having been found in the 'filling stratum'.[70] However, as we saw earlier, 2004 excavations near Shwegyugyi yielded at least four skeletons 2.4-9.75 metres below ground level. Thus the southeast area had long been used for primary and possibly secondary inhumation.

At Sriksetra, within a concentric gravity-controlled water circulation proposed by Stargardt, 'completion' of the system included channels passing through terraced areas with dense deposits of urns on ridges in the southwest part of the site.[71] One rationale for this – if the roughly circular pattern of present day watercourses was in place 1,500 years ago – was to maintain physical links with ancestral remains. However, this is not implied by the fractured lines of inheritance noted by Tun Aung Chain in the royal stone urn inscriptions, for these suggest that new lineages appeared often. Thus the major stupas of Bawbawgyi, Hpayagyi, Hpayama and a fourth on the south east are all associated with urn-filled terraces which appear to have been deposited to consecrate the building construction. A like process is implied in chronicle accounts that King Duttabaung erected seven stupas over the relics of the Buddha, including the Bawbawgyi.[72] These all recognised place but over-rode previous territorial claims as patronage was transferred to new groups.

This process of repeated sanction for sects, each with patrons and followers loyal to the ruling family of the moment, follows more closely the process later evoked by Dhammaceti in his periodic purification of the *Sangha* than the sanctified limits of Sriksetra slowly growing outwards to complete the concentric form seen today. Perhaps more data will one day prove this to have been the case, but at present Stargardt's proposal that the water system symbolised a *Dhammacakra* in motion self-admittedly suggests a model that may or may not have been distinguished by the inhabitants of Sriksetra.[73] Where the idea is immediately applicable is in correlating Sriksetra's micro-topography with the distribution of urns, for it highlights the vital act of marking place with relics and offers clues about the prehistoric landscape of the site.

Marking place occurred place in a range of contexts, some visible in the archaeological record and some not: bones and ashes of venerated persons, canonical offerings to erect *stupas* and ordination halls, and transfer of chthonic powers from ancestral to Buddhist authority. All these aspects would have integrated existing custom into new ruling structures in both Upper and Lower Myanmar, and help to interpret the prominent role given to relics in Mon chronicles. For instance, in the legend of Zothoke cited earlier, the tresses of the two ogre daughters were used to wrap the relic casket. While we lack record of relic deposit ceremonies of the Pyu or Mon, present tradition dictates the essential deposition of *htarpanar* or relics in the ground upon breaking ground, at mid-level within the structure and upon consecration of the *hti* or umbrella.[74]



Lulin Kyaw gate (HMA34) on southwest side Srikestra. *(After drawing by Hla Tun Pru)*

Gates and marking the landscape

Localised practice is also linked to gate construction, as we noted earlier with the finds of urns and skeletons under the gates of Halin, but seen in another way at Sriksetra. Excavation in recent years has been undertaken at the Shwedagar (HMA5) and Lulin Kyaw (HMA34) gates on the northwest and southwest. Like the Halin gates, these are massive, with the HMA5 gate curving inwards for some 30 metres. As discussed by Hla Tun Pru, the combination of artefacts at both of these brings together Buddhist practice and local beliefs, including alchemy, in the power of metals. At HMA5, a 29-line inscription on a stone stele measuring 114 x 76 cm recorded extracts from the *Mingala Sutta* and *Moura Sutta*, dated to *circa* the 6th century AD. Along with these *Paritta* or protective Buddhist verses, iron nails were found nailed into the ground at the foot of the outer face of the wall. At HMA34, Lulin Kyaw, some nails (17-27 cm) were hammered into the ground and the face of one wall. An urn was found at the base of an external assembly area, possibly for elephants and military troops.[75]

In all these examples, recognition of 'super-natural' elements of the terrain and embedding new objects into the land, brought local chthonic beliefs into Buddhist administrative frameworks. These would have affected land ownership, demarcating of place and ritual practice. In various parts of Southeast Asia, these customs recognised non-anthropomorphised earthly forces as well lineages able to control them. For instance, in the centre of pre-Angkor circular sites near Angkor, a *phraa phuum* or 'navel' post was consistently recorded in the centre of mounds.[76] These posts appear to represent pre-anthropomorphic animist notions of the earth, and may at their time of origin been associated with burial.[77] Similar beliefs are expressed in rocks, zoomorphic creatures and vegetal forms common throughout Southeast Asia. Another example is

Hpayagyi stupa outside northwest wall of Sriksetra.

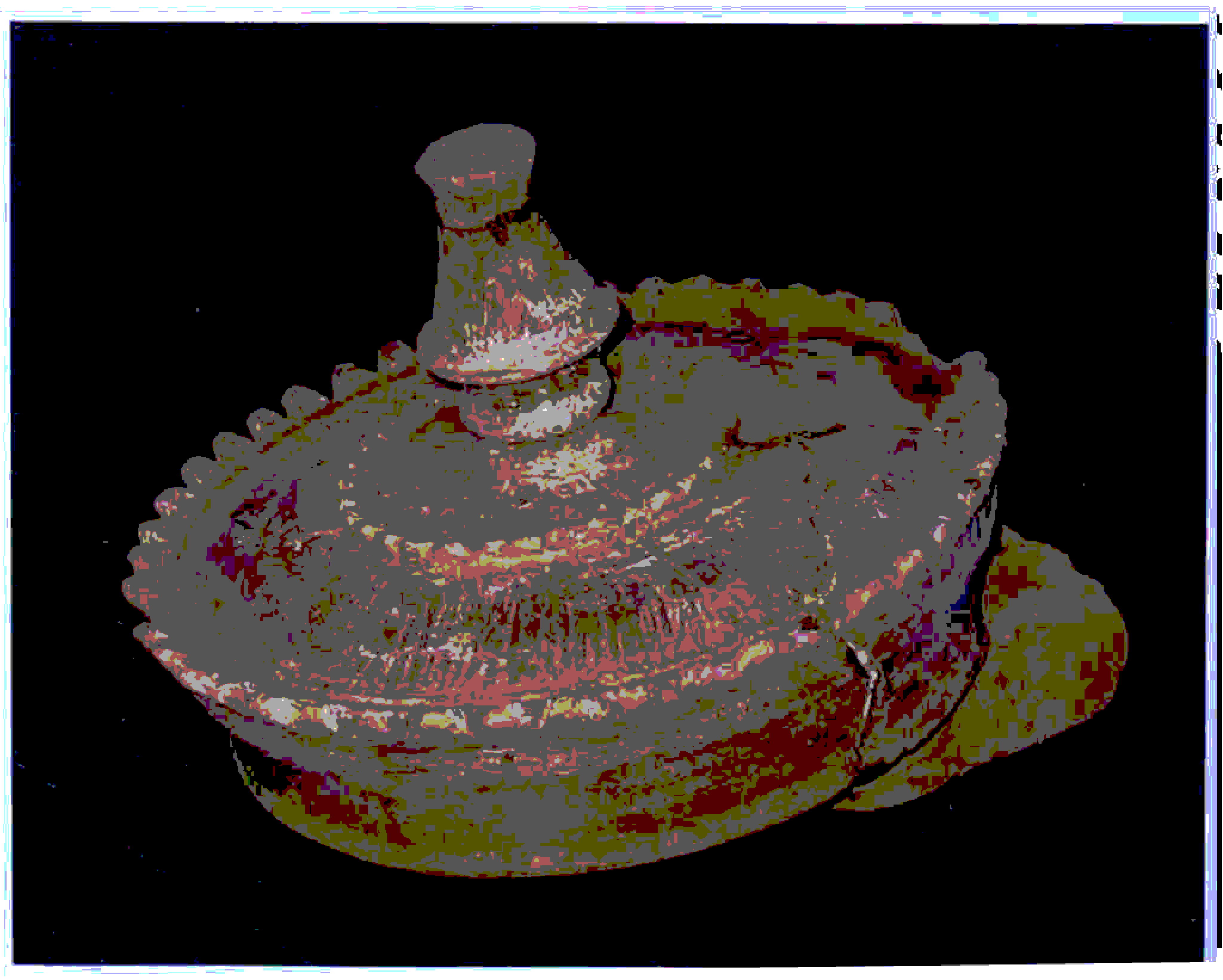
The *Naga* shrine of Tagaung is linked to a legend connected to Mogok, the upland ruby area, and a wooden pillar brought to Tagaung to build the palace.

seen at the circular first millennium AD walled site of Ban Takhong, Northeast Thailand, where the *Naga* of the land is seen to inhabit the southeast moat. These beliefs survive in the later sculpture of the Khmer where one of the most popular depictions is the Buddha under *Naga*.

While the Buddha under *Naga* is not frequently seen in Myanmar art, legends contain many similar themes. The tales are often linked with supernatural events, a hermit and the founding of a Buddhist kingdom. They are not factual but nonetheless contain places and possible sequence of past events. And importantly in the case of Myanmar, they are the context within which the memory of these ancient sites has been retained within the historiography of the country.

Chronicles and legends

Within Lower Myanmar, for instance, are accounts of a Buddhist sage called Gawampati. Gawampati is known in other regions, but his profile in Myanmar is a unique combination of highly embroidered tales centred on the land and the establishment of Buddhist rule. Gawampati is said to have been born from one of two eggs coming from the union of a *Naga* and a hermit at the foot of Zingyaik mountain near Thaton. In this context, Shorto maintained that his *Naga* mother recalled female chthonic spirits (*bau*) but his role became male as guardian spirit (*kalok*) of the Mons. In addition, Mon chronicles and later inscriptions refer to Buddha's visit to the Mon lands of *Suvannabhumi*, at the behest of Gawampati.[78] As 'builder,' he is present at the foundation ceremony of Sriksetra in 443 BC.[79] The earliest known inscription about Gawampati is that of the 11th to 12th century AD Bagan king Kyanzittha, which refers to Sriksetra rather than Thaton. From this, Aung Thwin has concluded that "Gawampati is far more likely to



Urn lid with fluting detail from Sriksetra. *(Archaeology Museum, Sriksetra)*

Zingyaik peak on the left of mountainside, with Thinkanhlan peak to the right, south of Thaton. Legends recount the union of a *Naga* and a *hermit* at the foot of Zingyaik Gran *Nat.* One poem recalls pilgrims' offerings of gold leaf, Thanu flowers, a quid of betel and *la-phet.* Sailors vowing truly never fail to be rescued.

have originally been the patron of the Pyu" and placed the sage's roots in Upper Myanmar.[80] Not disputed, however, and the significance of Gawampati's inclusion here, is this link to place and the establishment of Buddhist kingdoms.

Sriksetra's founding, like Thaton, is preceded by a visit of the Buddha to Phoe Oo Taung or 'mole mountain' (270 m) near Pyay (Prome). Two moles were living on the mountain, one later reborn as King Duttabaung of Sriksetra and the other as Queen Panthwa of Beikthano. The marking out of Sriksetra, according to the *Glass Palace Chronicle*, took place in 443 BC, 101 years after the Buddha's bodily demise. *Sakka* (*Indra* or *Thagyamin*) holding the tail of *Katakarma*, the *Naga* king, delineated a circular perimeter of 3 *yojana* on a 'pleasant level ground'.[81] Also present on the occasion are the hermit *Bisnu* (Vishnu), Gawampati and *Visvakarma* (the celestial architect). The story is not literal, seen for instance in the use of *yojana* (*yuzana*), which can be anywhere from 7.2 to 14-19 km, so considerably larger than the already sizeable 13.7 km circumference of the walls remaining at Sriksetra today.

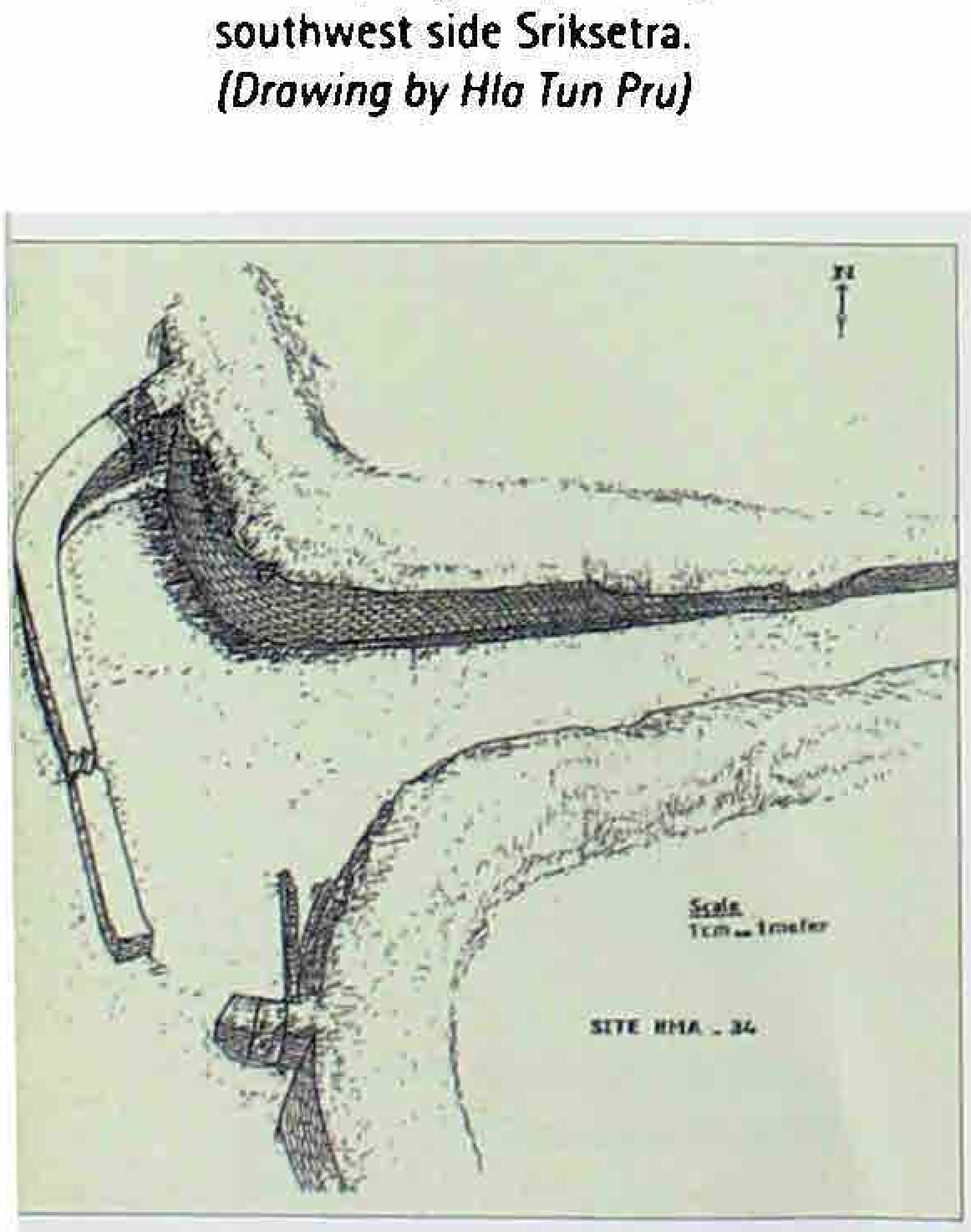
Sriksetra's founding is repeated in biographical inscriptions of Kyanzittha. One of these, in Old Mon, was installed in 1093 AD at the Shwesandaw pagoda in Pyay. This contains another prophecy given by the Buddha to *Bisnu*, Kyanzittha in one of his previous lifetimes. The Buddha foretells that the future Kyanzittha will be reborn as Duttabaung, found Sriksetra, and later be reborn as a king of Bagan. Duttabaung and Panthwa are also central in accounts of Beikthano in the Taungdwingyi Thamaing, the history of a city to the west of Beikthano. Panthwa's lineage is traced back to the legendary first capital of Tagaung in the northern part of Myanmar. Her father, heir to Tagaung, killed a great boar threatening the kingdom in the fortieth year after the Buddha's demise, and later became a hermit near the future site of Sriksetra. A young doe living there, after licking up the hermit's urine left in a cup in the rocks, gave birth to a daughter named Bedayi.[82] Indra learns that the girl had been the sister of Vishnu in a previous life, and requests Vishnu to build her a city.

Rich copper deposits are found at Letpadaung, just north of Chin Sa Kon.

In a parallel story, two blind princes were born to the chief Queen of Tagaung by her lover, a *Naga* borne in a knot of the palace post brought down from Mogok. The princes were banished to float down the Ayeyarwaddy but eventually regain their sight with the help of a Sagaing ogress called Candamukhi and finally, meet Bedayi. The elder brother marries Bedayi, and then dies, although Bedayi – passed to the younger prince – bears a child, Duttabaung. Duttabaung hears of Beikthano's wealth but fails to take the city due to a magic drum that Panthwa had received from Indra. When beaten, the drum made the waters of the Yan Pe stream to the south of Beikthano rise, drowning any invading troops.[83] Duttabaung uses a ruse and conquers Beikthano although eventually he falls from power and is carried off to the *Naga* country.

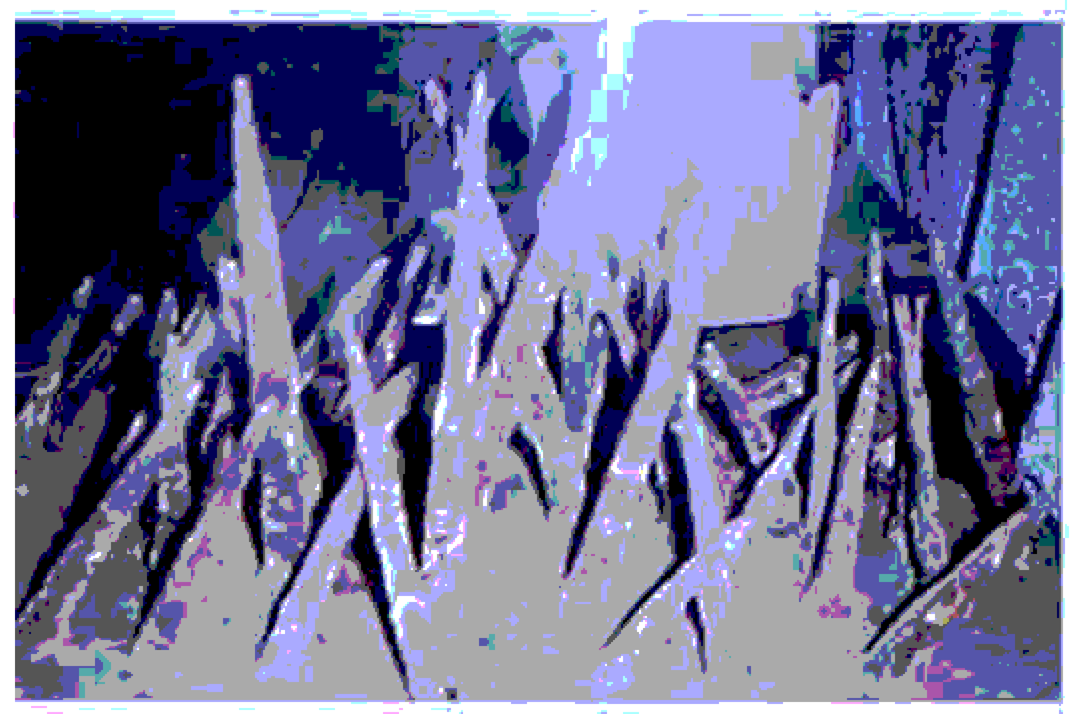
In this convoluted way, the chronicles legitimise a sequence of Tagaung, Sriksetra and Beikthano rulers. The stories are ones of royal patronage of religious sects, supernatural events and territorial control. Over the centuries, chronicles were re-written many times, incorporating particularly Buddhist principles and traditions, which have affected the choice of material and the form used to record events. They retain memory of groups that were important as allies or those that presented a threat – sometimes in what they do not say. And notably, they preserve memory of ancient cultures centuries before archaeology was considered an academic discipline.[84]

Lulin Kyaw gate (HMA34) on southwest side Sriksetra. *(Drawing by Hla Tun Pru)*



Man and the landscape

We looked above at some of the 'alternative' ways that concepts of place and landscape may have retained social memory of fluctuating groups during the first millennium AD. The importance of the terrain can be seen in the central role given to land and ownership in the religious and social changes of this period. These profoundly affected the ancient landscape we study today. The terrain is again central in comparing the inland sites of Upper Myanmar and ones in the coastal zones of Lower Myanmar. Although the land alterations involved the construction of walls in both inland and coastal areas, these differ in relation to the local ecology. For example, at Tagaung, rainfall can vary from *circa* 950 to 1500 mm per annum, a combination of its proximity to the Ayeyarwaddy, the topographic contrast of this to the Mogok uplands and its relatively northern latitude within the country. There are two earth-centric factors, nonetheless, that bring north and south together: recognition of the potential inherent in 'supernatural' elements and a deep 'scarring' of the land.



Iron plate with spikes from Sriksetra.

At times, the prospective benefits of place are expressed by earthly powers. This can be seen in Upper Myanmar with the setting of multiple urns not only inside and outside buildings but also within and outside walls marking out domain. Brick walls were generally built on the land; while sensitive to the local topography, protected and fed by *in-gyi* and small streams, they did not take their form from it. Despite the consequent variation in shape, the walled sites have a common vocabulary of built elements: sentry posts and troop assembly areas, *stupas* and urns, and protective devices such as seen at Sriksetra with steles inscribed with *Paritta* and iron nails hammered into the earth melding Hindu-Buddhist and animistic elements.

In Lower Myanmar, vestiges of related practices can be found. In the Mon State, however, walls were made of brick and laterite dug up along the margins of low lateritic 'islands' in the landscape. As a result, moats were carved out with often multiple walls built. Therefore, some walled sites of the south do not rest on the land but take their form from the local topography. While the brick and earthen walls in Upper Myanmar were important water control mechanisms, those of Lower Myanmar were a vital means of survival during the rainy season.

Especially in the far north and the south, these can be of striking beauty, such as *Thaung Hwet Taung* and the shadow of the Shan hills at Tagaung or Zingyaik peak and the crest of the Martaban range at Thaton. In the flat terrain of the Middle Ayeyarwaddy basin, the supernatural elements are less spectacular, but in many cases proved to be of arguably greater economic benefit. These include the *in-aing* and *in-gyi*, seasonal ponds and lakes dammed for fishing, domestic and agricultural use. Neolithic-Iron Age sites such as Taungthaman-*in* exploited such locales. At Tagaung, the formation of *in-gyi* along the tier of streams feeding into the present Ayeyarwaddy created an ecological diversity able to support habitation from at least the Neolithic to the present. As we have seen, at Beikthano, Halin, Maingmaw and Sriksetra, *in-gyi* were also vital.

'Megalithic' stones *in situ* at Chin Sa Kon (Moegyobyin), Salingyi, Lower Chindwin.

We returned to the *in-gyi* often, for as Aung Myint has noted, it may be that the building of walls in fact commenced from them

The antiquity of the popular beliefs surrounding Zingyaik Mountain is unclear although the peak is sometimes seen today as having the potency of a *Naga*. On the eastern side of the mountain lies the village of Ei-wè associated with the legends of Thaton. *(Photo San Win)*

and that it is from the perspective of these natural features that the wall constructions can best be understood. The transition from the Bronze-iron cultures to these fortified sites was not simply the building of walls, however. Profound changes were absorbed or forced into societies, forever altering the man's interaction with nature. These accelerated in coming centuries but the deepest transformations were already in place in the first millennium AD landscape of Upper and Lower Myanmar.

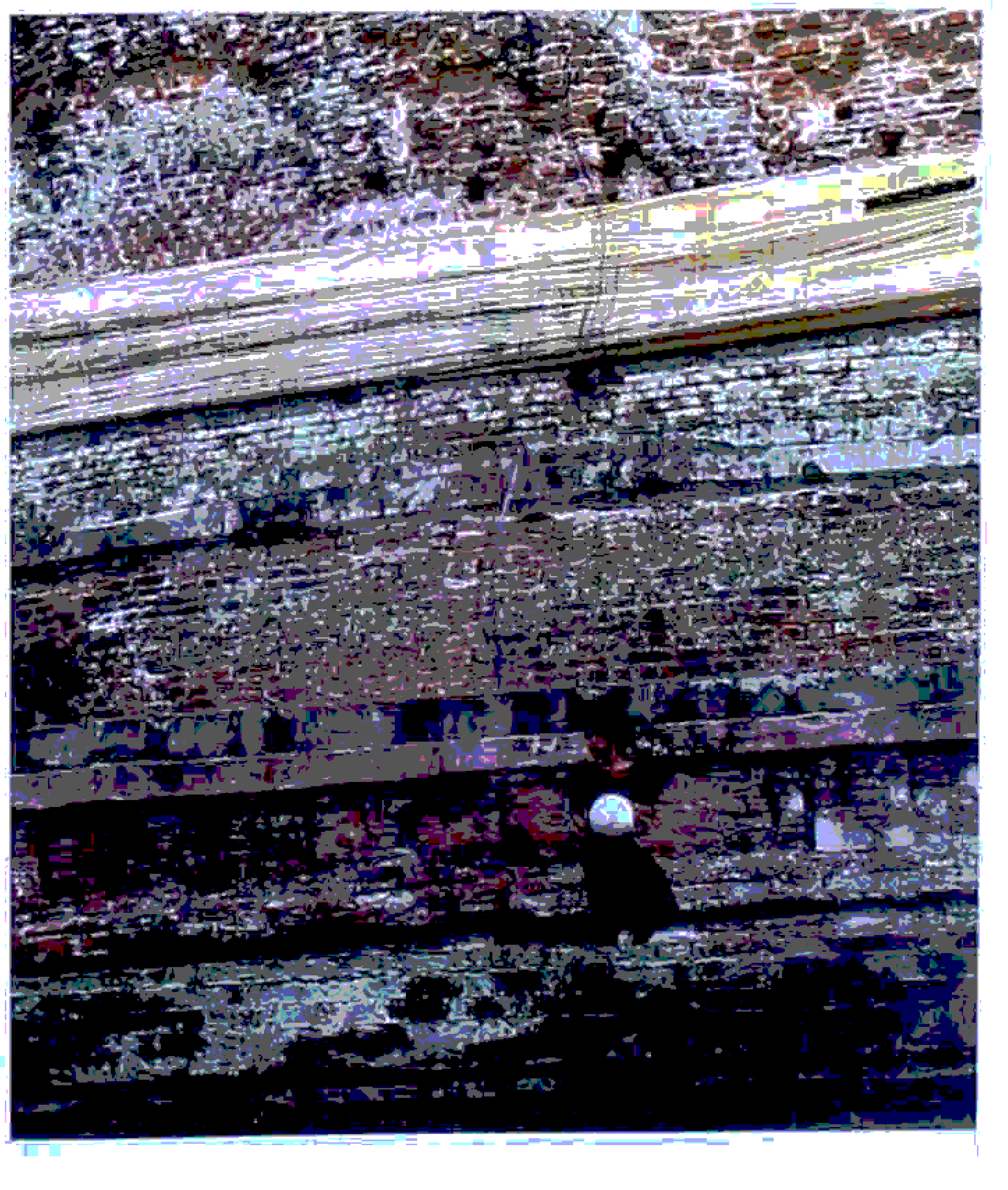
Taungthaman-*in* during the dry season.

Thaungthaman-*in* during the rainy season. *(Photo Paisarn Piammattawat)*

Footnotes

[1] Ingold 1993: 156
[2] Coèdes 1968: 46-64; Gutman 1976: 317
[3] Taw Sein Ko 1913: 329-30
[4] Bronson 1992: 82-3
[5] Tan 2005
[6] Middleton 2005: 9, App. 4, 6, 14, 15, 23, 28
[7] Mitchiner 1990: 10
[8] Gutman 1976: 7, 1978: 10; Middleton 2005: 11
[9] Jacq-Hergoualc'h 2001
[10] Higham 2002: 261; Wheatley 1961: 9-10
[11] Jacq-Hergoualc'h 2002: 84
[12] Luce 1969: 26-7
[13] Wheatley 1983: 18-19
[14] Lieberman 2003: 89
[15] Vickery 2004: 2-4
[16] Moore 2004; Sao Saimong Mangrai 1976: 158; Than Tun 1979: 52
[17] Chen Yi-Sein 1999: 86-7
[18] San Shwe 2002: 29
[19] Tun Aung Chain 2003: 13
[20] Krell 1993: 72
[21] Bellwood 2005: 226
[22] Bayard 1979: 280; Gutman and Hudson 2004: 151
[23] Aung Thwin 2005; Lieberman 2003: 90
[24] Gutman and Hudson 2004: 151; Luce 1985
[25] Luce 1985: 70-71
[26] Luce 1969 Volume 1: 28; 1974: 124
[27] Moore 2003, 2005
[28] Hudson 2004: 148
[29] Hudson 2004: 121
[30] Hudson 2004: 247
[31] Ingold 1993: 156
[32] Chakrabarti 1995: 197, 235, 252
[33] Pe Maung Tin and Luce 1960: 3
[34] Toe Hla 2004: 60-4
[35] Zidan Cao 2004
[36] Toe Hla 2004: 63
[37] Aung Thwin 1982: 16
[38] Than Tun 1979
[39] Aung Myint 1998: 14-5; Moore and Aung Myint 1991: 83
[40] Luce 1985: 143, Plates 40, 41
[41] Namio Egami 1985
[42] Namio Egami 1985: viii
[43] Pautreau et al 2001: 99, 2003: 62, 2004
[44] Luce 1969: 3
[45] Gutman 1976: 6
[46] Luce 1974: 119; Myint Aung 1999
[47] Luce 1974: 120
[48] MacDonald 1990: 203
[49] Wheatley 1983: 11, 13
[50] Vickery 2004: 22
[51] Gutman 1976: 317
[52] Vickery 2004: 7
[53] Carloye 1971: 564-566
[54] Aung Thwin 1985
[55] Aung Thwin 1979: 681
[56] Bechert 1970: 767
[57] Shorto 1967: 69, 132
[58] Ingold 1993: 162
[59] San Shwe 2002
[60] San Shwe 2002: 11, 12
[61] Sarkar 1966
[62] Myint Aung 1970: 60, figure 5
[63] Taw Sein Ko 1914: 90
[64] Stargardt 1995b: 171
[65] San Shwe 2002, 2007; Stargardt 1990
[66] Carey and Tuck 1896: 193; Moore 2003
[67] Stargardt 1995c: 162
[68] Schopen 1997: 193, 375, 2004: 363
[69] Hudson 2004: 136; Myint Aung 1970: 57
[70] Myint Aung 2003: 91
[71] Stargardt 2002: 154-156, 165
[72] Pe Maung Tin and Luce 1960: 17
[73] Stargardt 2002
[74] Moore 2003
[75] Hla Tun Pru 2004; Sao Saimong Mangrai 1976: 160
[76] Moore et al. 2006
[77] Ang Chouléan 1997
[78] Shorto 1963: 57, 1976
[79] Moore 2005; Pe Maung Tin and Luce 1960: 14; Strong 1994
[80] Aung Thwin 2005: 85; Shorto 1967, 1970, 2002/1963
[81] Pe Maung Tin and Luce 1960: 14
[82] Luce and Pe Maung Tin 1960: 8, 13
[83] Chen Yi-Sein 1999: 76-77; Khin Myo Chit 1985: 57
[84] Aung Thwin 1980: 173
[85] Tilley and Bennett 2001

Bawbawgyi stupa south of Sriksetra.



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