MUANG PHET: QUARITCH WALES' MOATED SITE EXCAVATIONS RE-APPRAISED

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ABSTRACT

The site of Muang Phet in northeast Thailand was first excavated in the 1950s by H.G. Quaritch Wales. He concluded that the site was founded in the 7th to 9th centuries AD as a result of Dvaravati occupation. The later phase of the site he interpreted as 10th to 13th century Khmer occupation. Recent archaeological surveys and a new excavation of the site indicate that it was founded earlier and abandoned earlier than Wales suspected.

INVESTIGATIONS IN NORTHEAST THAILAND BY QUARITCH WALES

In 1955, after reading Peter Williams-Hunt's now well-known article (Williams-Hunt 1950) disclosing the existence of over 200 sites fortified by earth walls and moats in the Mun and Chi River valleys of northeast Thailand, Horace G. Quaritch Wales, a British archaeologist who had been active for over 20 years in the study of early historic period sites in Southeast Asia, set out to investigate a group of these fortified sites. Working along the Nakhon Ratchasima (Khorat) to Ubon Ratchatani railroad line, he surveyed four of these sites in Nakhon Ratchasima and Buriram provinces: Muang Rong Thong, Muang Sai O, Muang Phet, and Thamen Chai (Figure 1). At Muang Phet and Thamen Chai he excavated exploratory test trenches, the first archaeological excavations ever conducted in northeast Thailand. In a 1957 article in the journal *Antiquity* he discussed the results of his excavations (Wales 1957).

Muang Phet, the first of the sites he excavated, is a 6 ha mound with two moats and three earthen ramparts surrounding it (Figure 2). It is located on a broad, low alluvial terrace in the hilly upland area south of the present town and former Khmer center of Phimai and lies about 50 km east of Khorat, the present provincial capital. Today, as at the time of Wales' excavations, a small village of rice farmers occupies Muang Phet. On this 3 m high mound Wales excavated a test trench 18 ft long near the center of the mound, followed by stratigraphic excavation of a 7 by 9 ft adjoining block. Wales discerned two distinct habitation levels: the upper one (Period II), from 97 to 132 cm below surface, was directly underlain by a thick occupation layer (Period I), extending to 272 cm below surface (Figure 3). The Period I layer contained iron fragments all the way to the base of the deposit and sherds from three types of pottery: a fine black ware, a thin brownish cord-marked ware and a coarse red and yellowish ware. The Period II layer contained sherds from a coarse reddish and yellowish ware and a fine, nearly white, unglazed wheel turned pottery.

Wales also conducted test excavations at Thamen Chai, a larger site of about 25 to 30 ha surrounded by three moats and four ramparts 2.5 to 3 m high, located on the Thamen Chai River about 30 km east of Muang Phet. One test trench was excavated near the southwestern edge of the site, where a road cut had revealed a pair of *sema* stones embedded in the top of a layer which was found to contain sherds similar to the Period I sherds at Muang Phet. A second test trench, along the edge of the inner moat on the southeastern side of the site, uncovered a few Period II white ware sherds in the upper layer, underlain by Period I pottery. This excavation was located near a cluster of *sema* stones with their bases embedded 18 cm within the Period I layer.

In his interpretation, Wales concluded that the Period I layers resulted from a Dvaravati occupation dating probably from the seventh to the ninth centuries AD. He based his conclusions primarily on the presence throughout the deposit of iron, then assumed to have been intro-

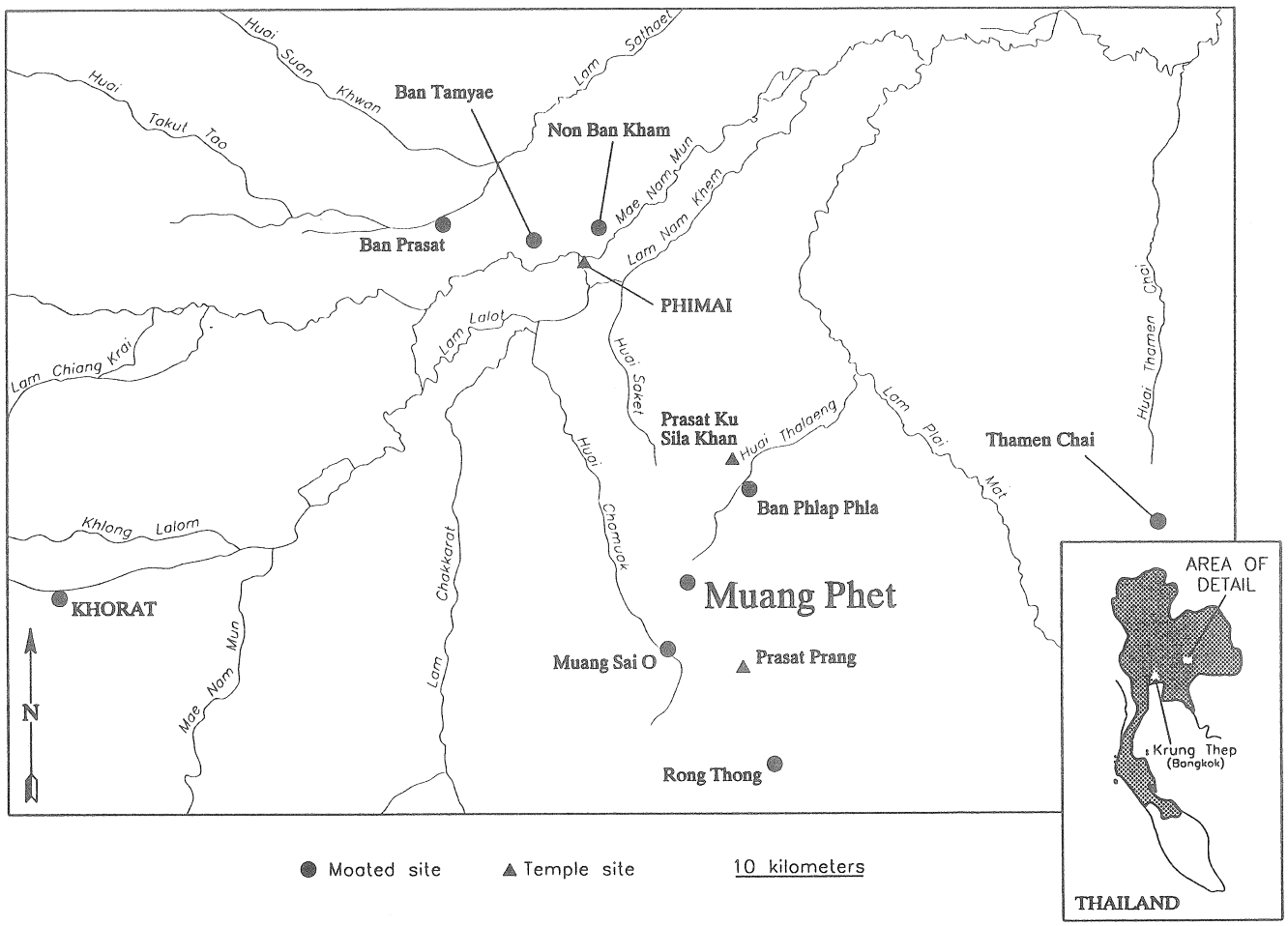

Figure 1: Map of the Phimai region showing the location of Muang Phet and other sites referred to in the text.

duced to Southeast Asia from India. There were similarities between the Period I ceramic complex and a collection of sherds from Kampong Sen, a presumed Dvaravati site in central Thailand. Buddhist *sema* stones were present *in situ* at Thamen Chai. He supported his main evidence by noting that the style of the fortifications is in accordance with Indian concepts, that *sema* stones carved in Dvaravati style are found at other fortified sites and that a villager at Thamen Chai found a small bronze Buddha image in Dvaravati style in the roots of a fallen tree near the *sema* stones. The Period II layer was considered to be the result of a Khmer phase occupation of the tenth to thirteenth century.

CRITIQUE OF WALES' INTERPRETATIONS

By the 1970s, new data generated by Wilhelm Solheim and other members of the University of Hawaii-Thailand Fine Arts Department Mekong Valley Project had raised questions about a number of Wales' assumptions and resultant interpretations. These were discussed by Welch in his dissertation (Welch 1985). Updated slightly here, they can be summarised as follows:

(1) A charcoal sample from Muang Phet, reported to have come from a depth of 4 ft (122 cm) and therefore within the Period II layer, was radiocarbon dated to 1810±150 BP (BM-41) (Barker and Mackey 1960: 29), which can be calibrated to 120 BC-AD 570 (2σ)

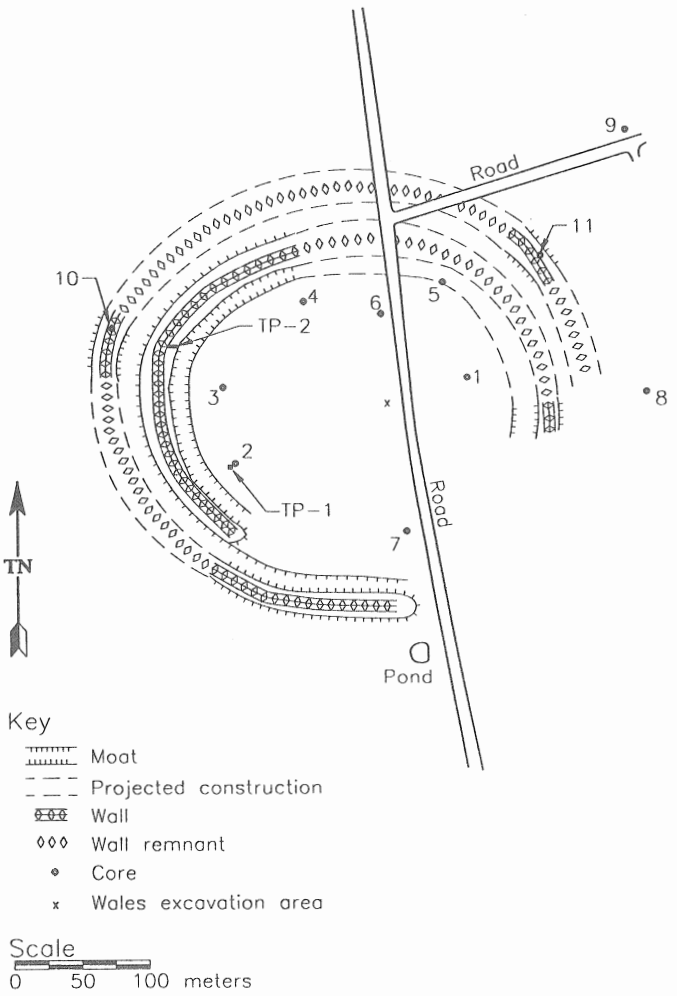

Figure 2: Plan of Muang Phet, Site NR-H-01.

or AD 70-410 (1σ) (Stuiver and Reimer 1993). Although this date would suggest a predominantly prehistoric occupation, Wales continued to consider these sites as dating from the Dvaravati and Khmer periods in his later publications (e.g. Wales 1969).

(2) Wales states that the Buddhist *sema* stones at Thamen Chai were found embedded in or on top of the Period I occupation. Therefore they should date from the beginning of the Period II occupation, rather than dating from the Period I occupation as Wales maintained.

(3) Evidence from several sites, including Ban Tamyae near Phimai, indicates that the use of iron on the Khorat Plateau began prior to Indian contact, as early as 800 to 400 BC.

(4) Based on the illustration of two Period I black sherds, it appeared likely that the black ware was in fact the same as the Phimai black ware which had been found at numerous sites in the Mun River alluvial plain near Phimai, where it dates from about 200 BC to AD 600. The provenance of the sherds from Kampong Sen with which Wales compared his sherds was unknown and they may have come from a pre-Dvaravati level. Helmut Loofs (1979:348) has argued that much of what Wales calls Dvaravati pottery in fact was excavated from pre-Dvaravati levels at U Thong. Period II, considered the Khmer occupation, did not appear to contain any distinctive Khmer sherds, or at least Wales mentioned none. The most likely association for the white ware, although not adequately described, was with the white wares from Phase III at Non Dua, a moated site in Roi Et province to the east excavated by Higham (1977), tentatively dated between AD 700 and 1000. Some of the coarse reddish ware was incised, a common form of decoration on ceramics during the early historic period.

Thus there were several reasons for thinking that the Muang Phet and Thamen Chai occupations dated earlier than Wales proposed. Welch concluded that the Period II layers, with the *sema* stones and the white ware, probably resulted from a sixth to tenth century early historic occupation or, given the radiocarbon date, perhaps even an occupation a few centuries earlier. The Period I layer, with the probable Phimai black ware, seemed certainly late prehistoric, probably dating from the Classic Phimai Phase (c. 200 BC-AD 300).

In 1986, Welch and I proposed a project in cooperation with Chiang Mai University to conduct X-ray fluorescence spectrometry of Phimai region pottery sherds. The planned selection of a sample of sherds from Wales' two excavations for inclusion in the analysis provided an opportunity to re-investigate Wales' data on these northeast Thailand sites. According to Wales, all materials from his excavations were supposed to have been turned over to the Fine Arts Department National Museum. However, the National Museum had no record of the registration of these materials. It seemed unlikely that we would ever be able to relocate Wales' original excavated materials.

KBAP SURVEY OF MUANG PHET

In February 1989 the Khorat Basin Archaeological Project (KBAP), as part of a continuing survey and testing program initiated in the Phimai Region in 1979, began a survey to record archaeological sites in sample blocks in all three environmental zones (alluvial plain, terrace and

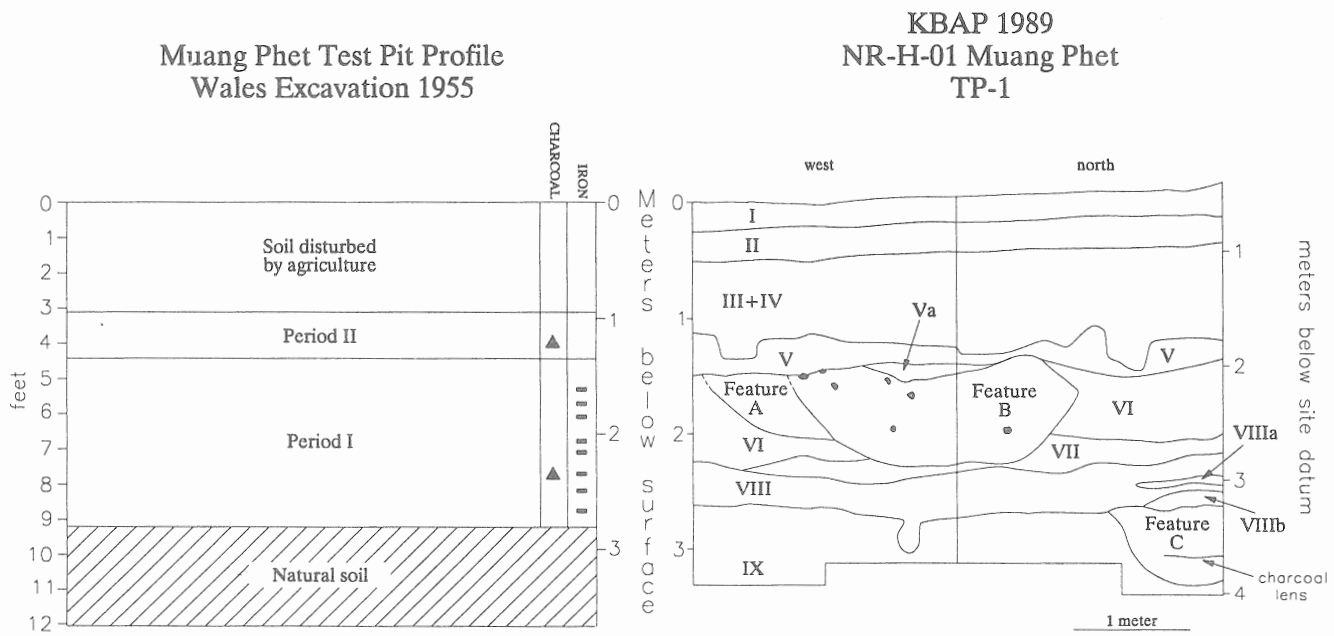

Figure 3: Comparison of profile of test trench excavation by Wales (adapted from Wales 1957) with KBAP profiles of west and south walls of TP-1.

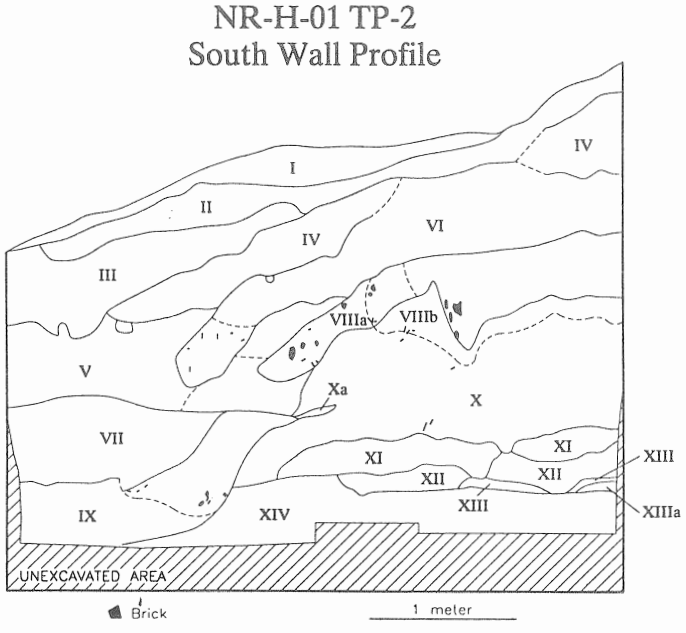

Figure 4: Profile of south wall of TP-2, Muang Phet inner moat and wall.

upland) around Phimai. Muang Phet, located about 30 km south of Phimai, was included in the upland survey block. At the time of our survey, the site still retained remnants of the walls and moats that Wales had described surrounding the village mound. However, since Wales' investigations, portions have clearly been levelled for the planting of crops. Villagers were able to point out the location of Wales' test trench and one villager who had worked for Wales was able to describe the excavations. According to him, Wales had worked in the village for three days.

Conducting a surface reconnaissance along the inner earth wall, we were able to collect a large sample of sherds eroding from the rampart's sides. These were, as anticipated from Wales' descriptions and drawings, late prehistoric Phimai black sherds. Early historic period sherds were also present, though much less numerous, but the only Khmer period material observed at the site was a large brown jar placed at the shrine to the local land spirit.

We selected Muang Phet as one of the sites for test excavations. This decision was based in part on our interest in re-evaluating Wales' excavations and testing the alternative explanations we had proposed. However, there were several other factors of importance in the

choice of Muang Phet as our sample upland site. Muang Phet is a medium sized site, with the interior mound about 6 ha in area. It is considerably smaller than two previously excavated moated sites in the Phimai region: Ban Prasat (31 ha), excavated by the Fine Arts Department (1993); and Ban Tamyae (16 ha), excavated by the KBAP (Welch and McNeill 1988-9). It is considerably larger than Non Ban Kham (2 ha), also excavated by the KBAP, thus increasing the diversity of site sizes investigated. A newly paved road from Phimai to the nearby railroad station at Hin Dat meant easy access to the site. Thus Muang Phet could be excavated more efficiently than any of the other upland moated sites. Despite some destruction, the walls and moats were among the best preserved of any in the region, providing an opportunity to conduct excavation of these earthworks.

KBAP EXCAVATIONS AT MUANG PHET

We initiated our investigations by coring a number of locations with a soil auger. Based on the results, we selected two locations for testing (see Figure 2). Excavations were conducted for five weeks during the months of March and early April.

TP-1 was a 2 by 2 meter test pit located on the southwest side of the mound, about 120 m southwest of the location of Wales' test trench and pit. TP-2 was laid out as a 1 by 4 meter trench on the inner earth wall on the west side of the site. The trench was placed along the lower, inner slope of the wall just above the moat. Later we extended TP-2 5 meters upslope (westward) on the wall.

TP-1 was excavated to a maximum depth of 330 cm below surface. Nine soil layers were defined, three pit features were identified and approximately 39,000 sherds, weighing 128 kg, were recovered. The unit produced a stratified sample of ceramic types including sand-tempered light red and light brown early historic or pre-Khmer wares, late prehistoric or early historic white wares and prehistoric plain, red slipped and streak burnished Phimai black chaff-tempered wares. In addition we recovered fragments of brick and iron, as well as shells of fresh water snails and animal bones. This mound location appears to have been a habitation area. No evidence of burial activities was found. We were able to obtain only one datable carbon sample (Beta-59626), which yielded a date of 1920±90 BP from Layer V.

TP-2, excavated through a portion of the inner moat and wall, reached a maximum depth of 315 cm below surface with a total of twelve soil strata defined. At the east end of the trench, in the inner moat, the cultural material continued down an additional 40 cm as revealed by auger coring. Presumably this material had slumped off the wall down into the moat. We recovered a little over 30,000 sherds, weighing 93 kg. No obvious modern or historic wares were encountered. The upper layers produced a mixture of plain wares of indeterminate age associated with some prehistoric Phimai black wares. The lower layers produced additional Phimai black ware. Bricks, animal bones and shells were recovered throughout the trench. There is some evidence of occupation on the wall in the lower depths but no evidence of human burials.

ANALYSIS

Stratigraphy, Ceramics, and Chronology

Our TP-1 excavations generally confirmed that Wales' interpretation of the stratification of the mound was correct but greatly simplified (see Figure 3). As in Wales' unit, the surface horizon was a garden soil containing little cultural material, although in our test pit, this layer (I) was only 25 to 35 cm thick, rather than the more than 90 cm in thickness that Wales reported in his excavation. Our Layers II and III, from 25 to as much as 90 cm below surface, appear to correspond with Wales' Period II. These silty clay loam layers contained friable plain chaff-tempered sherds and several light-colored grog-tempered wares. Our Layer IV, 90 to 120 cm below surface, is a transitional layer both in terms of soil texture and the ceramics it contained. This layer was a clay loam, sandier than the layers above, but not as sandy as the sandy clay loam layers that underlay it. It contains ceramics typical both of the layers above and those below. Its correspondence with Wales' strata is uncertain. He probably would have placed it in his Period II based on the presence of light colored wheel turned ceramics and the fact that the Layer IV/V boundary is more obviously discernible than the III/IV boundary. We excavated five layers (V to IX) which clearly correspond to the Period I level.

The pottery assemblage recovered from these lower five layers is dominated by three closely related types of chaff-tempered pottery: streak burnished reduced black (Phimai black), plain black (at least one surface reduced) and plain (with both surfaces oxidised). Less abundant but still common were chaff-tempered sherds on which the exterior surface had been impressed with a cord wrapped paddle and those with streak burnished oxidised surfaces, generally reddish-yellow or similar colour. Non-chaff-tempered sherds are nearly absent in the lowest three layers. In Layer V a few grog-tempered sherds make their appearance.

Layer IV, however, marks a significant transition in the pottery making traditions. Phimai black and plain black chaff decline to 10% of the assemblage each. Plain chaff remains the most common type but the second most common is a new type, a very friable, poorly fired plain chaff-tempered ware. Grog-tempered types become more common, increasing to 10% of the assemblage, the most common of these being a wheel-made beige ware. In Layer III we clearly see a significantly different assemblage from that of the lowest three layers. Friable plain chaff-tempered sherds are the most common type representing over 50%. The wheel-made beige is joined by cream plain grog and grog-tempered white ware. Most evident is the almost complete disappearance of Phimai black, plain black chaff and plain chaff. These are replaced by the less well-made, more poorly fired chaff tempered types. Layer II is similar but cream plain has become the most common grog-tempered type.

The single radiocarbon date [Beta-59626 (H-1-161)] that could be obtained from this excavation unit, charcoal being both sparse and dispersed, confirmed the radiocarbon date from Wales' excavation. The date was obtained from a single piece of charcoal weighing 3.2 grams found at the base of Layer V, but not within a distinct feature. The 1920 BP date from the upper layer with Phimai black pottery correlates well with the 1810 BP date obtained by Wales from about 10-20 cm above his Phimai black level. According to the British Museum report of the date in the journal *Radiocarbon* (Barker and Mackey 1960), Wales' charcoal sample came from approximately 120 cm below surface, which would place it in the lower half of his Period II level, probably equivalent to our Layer III or IV. Our sample, from Layer V (at 155 cm below surface), dated to 1920±90 BP, which calibrates to a date of 160 BC-AD 260 or AD 290-320 (2σ) and 30 BC-AD 200 (1σ) (Stuiver and Reimer 1993). The calibrated age of AD 80 for the midpoint is 150 years earlier than the AD 230 midpoint for Wales' sample, fitting well into the stratigraphic sequence. However the dates, if correct, might suggest that the transition from Phimai black to the grog-tempered ceramics that Wales called Khmer and that we have generally defined as early historic wares, may in fact have taken placed earlier than we had previously thought. However, because so little is known of the context from which Wales' date is derived, this must remain questionable until further chronological work is conducted for these putative early historic ceramics.

TP-2 was important for the information it contained about the age and construction of the moats and walls. The configuration of the upper layers, with boundaries that slope down toward the moat, clearly indicate that these are part of the moat and wall construction (Figure 4). These upper layers contained primarily Phimai tradition plain chaff and plain black chaff sherds. The lowest fill layer, Layer VIII, contained a large number of burned brick fragments. Layer X and the layers below it are horizontal and appear to be bisected by the moat, suggesting that they may pre-date the construction of the wall and moat. The ceramics from Layer X and below included types that we thought might date from relatively early in the Phimai pottery making tradition (c. 200 BC). Yellow-red streak burnished, polished and slipped sherds were much more common in these layers than in TP-1. However radiocarbon dates of 1710±60 BP (calibrated 2σ age AD 210-530) and 1640±60 BP (calibrated 2σ age AD 250-560) were obtained from Layer X, the uppermost occupation layer and Layer VIII respectively, which we interpret as representing the base of the constructed earth wall. Thus the lowest wall layers appear likely to be contemporaneous with the lowest occupation deposits in TP-1. The radiocarbon dates indicate construction of the wall late in the prehistoric period, in the first half of the first millennium AD. No historic period sherds were found within the wall, suggesting strongly that construction had occurred before the end of the prehistoric period.

Artifacts

Apart from the previously discussed pottery, artifacts were rare at Muang Phet. These included a drilled sherd (TP-2 Layer V), two sherd disks (TP-2 Layers XI and XII), two dark gray fired clay beads (TP-2 Layer XII), and a fired hemispherical clay ball (TP-1 Layer IV/V). A much corroded iron artifact of three quarters circular form, perhaps a sickle blade, was recovered in the earliest cultural layer (Layer IX) in TP-1.

Vertebrate Fauna and Freshwater Molluscs

The faunal assemblage, comprising both vertebrate bone and freshwater mollusc shell, is not surprising or unusual in what it contains. The vertebrate remains are predominantly mammal, usually not distinguishable at a lower taxonomic level. Included in the identifiable remains are bones of bovids, suids and cervids. These indicated, as would be expected, both the raising of domesticated species and the hunting of forest game animals. There seems to be no significant change in the composition of the faunal assemblage over time, although the sample is too small to be of value in any type of statistical analysis of change.

Mollusc remains included taxa that are found most commonly in flowing water, such as *Filopaludina*, and taxa that are more typical of rice paddies, such as *Pila*. When compared with assemblages in other parts of the Phimai region, the assemblage provides information useful to understanding the adaptation of the site's residents to their local environment. At sites on the alluvial plain, such as Ban Tamyae and Non Ban Kham located next to tributary streams of the Mun River and not far from the river itself, snails with a preference for flowing streams are ten times as abundant or more common than the still water species. However, at Muang Phet the ratio is only 2:1, probably reflecting the presence of only a single intermittent stream near the site. This same type of distinction can be seen in the vertebrate faunal assemblage: turtle is quite common at the alluvial plain sites but absent at Muang Phet.

The results of the analysis of the faunal remains indicate that the prehistoric and early historic inhabitants of the Phimai region were adapting to the environment in expectable ways: exploiting locally plentiful species, maintaining an emphasis on hunting and collecting snails from the rice fields they were creating.

DISCUSSION

The investigations at Muang Phet have proved quite informative about several aspects of prehistoric settlement in the Phimai region. They include the period of initial upland settlement and the period when moats and walls were constructed. Differences between upland and alluvial plain sites are shown and intraregional exchange can be demonstrated.

Initial Settlement

Unfortunately, we did not recover sufficient charcoal from the deeper deposits at Muang Phet to obtain a radiocarbon age for the earliest occupation in the excavation areas. However, the radiocarbon dates from higher layers and the types of ceramics present in the lower half of the site clearly demonstrate that the settlement of Muang Phet dates well back into the prehistoric period. The absence of a Tamyae tradition horizon at the base of the excavation units, such as was found at Ban Tamyae and Ban Prasat, and of any Prasat burial vessel types, indicates that settlement at Muang Phet occurred later than at those sites, probably no earlier than 400 to 200 BC. The presence of iron in the lowest layers also suggests occupation later than at those two alluvial plain sites and certainly no earlier than 800 to 500 BC. The presence in the four lowest layers of TP-2 of a relatively high frequency of red slipped chaff-tempered pottery, a type that at Ban Tamyae appeared to date to early in the Phimai tradition, probably pre-200 BC, suggests an early Phimai phase age. However, the radiocarbon date from Layer X failed to support this dating. For now we can only say that settlement dates no earlier than the latter half of the first millennium BC. We lack evidence to say at what date in that period settlement most likely first occurred. This evidence suggests later settlement of the uplands than of the Mun River alluvial plain around Phimai.

Dating of the Earth Moats and Walls

The evidence suggests that the inner earth wall and moat at Muang Phet were built in the early centuries AD. The evidence is not unambiguous. Also, this is a construction date for only one of two, or possibly three, walls at the site and for only one moated site of many. Nevertheless, these radiocarbon dates provide the most direct evidence to date that the construction of walls and moats began in the late prehistoric period. At Muang Phet at least, we can say with some confidence that the walls and moats were built in the first half of the first millennium AD. We can therefore feel somewhat more secure in using the information obtained from these features to interpret late prehistoric social, political and economic organisation.

Upland-Alluvial Plain Comparisons

Not only were upland sites such as Muang Phet probably settled later than alluvial plain sites but population density remained much lower than on the alluvial plain through all periods of settlement. This is not surprising: the paucity of fresh water streams, the coarse texture and rapid drainage of most soils and the absence of broad areas of level land restricted the possibilities for successful wet rice cultivation. Other crops were no doubt grown but most were less productive than wet rice grown on the less permeable, finer textured and more fertile soils of the floodplain and low terraces of the Mun River. Upland communities, such as Muang Phet, remained relatively isolated, concentrating along drainages and remaining separated from one another by densely forested hills.

Problems with adequate water supplies and the isolation of these upland communities were probably important factors in the elaborate wall and moat constructions that are found at numerous upland sites. These constructions are found at the vast majority of upland moated sites but at only about one quarter of alluvial plain moated sites.

At the alluvial plain sites of Ban Tamyae and Non Ban Kham the frequency of the remains of domesticated animals such as cattle, pig and water buffalo increases

over the course of time, with a corresponding decrease in the frequency of deer and other animals that would have been hunted. Population growth and expansion of paddy fields on the alluvial plain probably reduced the availability of game. In the uplands, where the population remained small and the forest plentiful, given the unsuitability of vast stretches for the cultivation of rice, the inhabitants of sites such as Muang Phet maintained an emphasis on hunting.

Regional Exchange

During the late prehistoric period, Muang Phet was clearly part of the regional Phimai tradition that we have defined as characterising much of the upper Mun River valley. Phimai black pottery is a distinct horizon marker with a known distribution covering an area of as much as 50,000 sq km. The dominance of chaff-tempered ceramics and the presence in high frequencies of Phimai black characterise the ceramic assemblages from this period throughout the Phimai region. Muang Phet is part of this horizon and probably shared in the Phimai exchange network in a way similar to other upland sites.

Muang Phet and other upland sites may have been sources of upland products for the more populous communities on the alluvial plain. These communities would not have had direct access to these items, either because they were not naturally present on the alluvial plain or because the expansion of wet rice fields had resulted in their reduction or elimination. The commodities may have included forest products such as resins and wild game animals as sources of protein. The presence of deer and other wild species in the faunal record suggests their abundance in the area around Muang Phet. Lateritic soil deposits in the vicinity of Muang Phet may also have served as a source of the ore used in the iron smelting activities which have been well documented at several alluvial plain sites.

CONCLUSIONS

As noted above, the evidence, as expected, demonstrates that Muang Phet was settled much earlier than Wales thought. It also indicates, surprisingly, that the site was abandoned earlier than Wales suggested. No evidence was unearthed in the excavations to indicate that the site was still occupied during the Khmer period. The one Khmer style vessel at the site is a still intact jar placed at the village shrine. This vessel could have been brought to the site from elsewhere at a later date. What caused the abandonment of the site? One suggestion we would make is that a major trade route a few kilometres to the east bypassed the site. During the eleventh century or so, a road was built connecting Phimai and Angkor. Its route is marked to some extent by the construction of rest houses placed along the way (Finot 1925). These are stone or laterite structures built to an identical plan. Going south from Phimai, the first of these is Prasat Ku Sila Khan, located near Ban Phlap Phla. Another is at Non Srebo farther southeast. The most direct route between these two would have passed through Ban Prang, the site of a Khmer *prasat*, while by-passing Muang Phet. Perhaps Muang Phet was abandoned and a new village established along that route.

Wales was generally accurate in his gross descriptions of what he found at the site but the speed of his excavations probably precluded more detailed description of the results. However the KBAP survey and excavations clearly demonstrate the need to revise his interpretations. Our ability to do this is the result of the work that has been conducted by both Thai and foreign researchers in northeast Thailand over the course of the past 30 years. The work by Solheim, his students and those trained by his students has transformed our understanding of cultural development and change in northeast Thailand. The extent to which we need to revise Wales' interpretations, interpretations which were in fact quite reasonable given the state of archaeological knowledge and theoretical assumptions regarding Southeast Asia at the time, is a measure of how far northeast Thai archaeology has come in the 38 years since Wales conducted his survey and the first excavations in northeast Thailand.

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