

THE CHRONOLOGY OF THE BERNAM CIST GRAVES IN PENINSULAR MALAYSIA

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ABSTRACT

Several granite cist graves, also known as "slab graves", were recorded in the Bernam Valley and its vicinity in Peninsular Malaysia between 1895 and the 1950s. Finds recovered from those graves include glass and stone beads, socketed iron tools and fragments of earthenware pottery. Between 1992 and 1998 the author excavated eight recently-located stone cist graves. Several radiocarbon dates and one thermoluminescence date point to a chronology centred on the early first millennium AD. These chronometric dates are assessed in the context of the chronology to be preferred from distinctive, typologically dated artefacts in the graves, which include a decorated bronze artefact and Tang Chinese ceramics.

INTRODUCTION

Just over 100 years ago, in 1895, the first stone cist grave was discovered on a hill at Changkat Menterī in south Perak a few kilometres from the right bank of the Bernam River. This was an accidental discovery made by J.A. Legge, an assistant surveyor on a mission to find a suitable point on the hill to set up a trigonometry station. The site was excavated by H.C. Robinson and R.O. Winstedt in 1919 (Evans 1928:119). Many years later a few more stone cist graves were discovered in river valleys nearby, namely at Sungkei and at Slim River. These were excavated by I.H.N. Evans in 1927 and 1930, and by H.D. Collings in 1936. In 1956 a badly disturbed cist grave was found at Slim River and was investigated by G. de G. Sieveking (1959). Since then, no further discoveries were made until our archaeological reconnaissance work began in the Bernam Valley in 1992. Our first discovery, Kubur 1 (K1) or Grave 1, was made on a low hill in an oil palm estate at Changkat Menterī (Leong 1992). To date, we have excavated a total of eight stone cist graves. Six of these were found in the Changkat Menterī

Estate and two in the adjoining oil palm estate known as the Ulu Bernam Estate. The excavation of graves K7 and K8 at Changkat Menterī was completed only in November 1997. So far, since 1919, a total of twenty stone cist graves have been excavated in this country.

All these discoveries attest to the existence of settlements in these riverine areas in the ancient past. Their locations seem to have been concentrated in the valley of the Bernam River and its vicinity. In 1994, our archaeological survey farther afield from the Bernam Valley also found evidence of the occurrences of stone cist graves in another area within easy reach from the Bernam River (requiring a short overland trek and then a trip down the Belata River). The area is again a riverine locality situated on the banks of the Sungai Belata near Kerling in north Selangor.

These cist graves are constructed from large slabs of undressed granite. As such, these finds are usually referred to as "slab graves" in the archaeological literature. Some of the large slabs that are still intact required as many as four or more men just to lift them up (let alone carry them for any distances). The acquisition of the granite materials (from sources upstream near the foothill regions of the Main Range), their transportation downstream and then by land to their various burial localities, and finally, the actual construction of these cist graves at their chosen localities (probably near the settlements of the deceased), must have required considerable manpower. Such resources were available only to the élite of these early communities. This interpretation is further evidenced by finds of many types of exotic goods recovered from these stone cist graves (see discussion below).

It is interesting to note that a fairly large number of such graves have been found and excavated. This figure would have been higher if many of the accidentally discovered graves had not been destroyed by those who found them but did not recognize their historical value.

Some seven graves were reported to have been found at Slim but were removed or destroyed before the authorities came to know about the finds (Collings 1937:75). Several years before we started our archaeological survey at Changkat Menterī at least nine stone cist graves had been found. According to our informant (who had worked in the estate for more than 20 years) these came from various parts of the estate. This rather scattered pattern of the locations of cist graves was also apparent in the distribution of the majority of the recently discovered graves (K1 to K8). There are at least three main localities: on rising ground not far from the right bank of the Bernam River (Field 8 of the Changkat Menterī Estate where we excavated K1 in 1992 and K8 in 1997); on the low grounds also on the right bank of the Bernam but farther downstream in the Ulu Bernam Estate, where we excavated K3 and K4 in 1993; and on a low hill at Changkat Menterī Estate (Field 9 where we excavated K2 in 1993, K5 and K6 in 1994, and K7 in 1997) about 2 km from the K1 site.

The stone cist graves found within each of these three localities are less than 200 metres from one another. Those found on the low hill are even more closely spaced. Graves K6 and K7, for instance, were found side by side on this hill while K2, the farthest to the north of K7, is just 15 metres away from the latter. More interesting still is the fact that all four graves excavated from this low hill (now named *Bukit Sejarah*) are clearly well ordered. They are found just below the top of the hill (on the side of the hill facing east) aligned roughly in a row from north to south with the head of the graves pointing to the top of the hill and the foot to the east (pointing downhill). The discoveries on this hill have been interpreted to represent an ancient necropolis or cemetery site (Leong 1998). The occurrence of a fairly large number of graves, and their rather scattered distributions within the Changkat Menterī and Ulu Bernam estates and in the Bernam Valley in general (which also includes the sites at Slim and Sungkai) and adjacent areas (Kerling), suggests that these stone cist or slab grave communities were settled in more than one locality and their occupation spanned a matter of centuries. This latter observation is corroborated by our recently obtained chronometric and artefactual dates.

It is also important to note that these cist graves would be only the graves of the élite. The population at large, i.e. the common folk whose remains still elude us, would have been fairly numerous. The actual settlements of these "slab grave people" have yet to be traced. More intensive surveys are being planned to try to locate them.

CHRONOMETRIC DATING

Until recently, scholars have relied upon two types of find recovered from these cist graves for dating. Consistent finds of socketed iron tools (or their fragments) at many of the sites, hence the "slab grave culture" of the Bernam Valley, have allowed scholars to ascribe these graves to the Iron Age of West Malaysia's prehistory. These items were undoubtedly burial goods placed within and outside the cists. Also found were a large number of glass beads as well as a few carnelian and rock crystal beads. Typological study of these beads by H.C. Beck had dated them to around AD 400, early in the Christian Era (Collings 1937:93). Dates obtained from beads alone, however, are sometimes unreliable. This is especially so with beads from burial sites. There might have been a long span of time between the manufacture of the beads, their distribution (their trade might not have been direct), and the consumption or actual usage of the beads (perhaps changing hands several times, or even possibly becoming heirloom items) before their final deposition in the burials. Indeed, from our recent excavations the majority of the beads were found to be in a fairly worn state. Chronometric dates based on radiocarbon and thermoluminescence datings obtained from some of the recently excavated slab graves can perhaps give us a clearer picture of the chronology of this slab grave culture in the Bernam Valley.

Radiocarbon dating by accelerator mass spectrometry (AMS) was conducted on organic samples excavated from inside the cists. Most of the cists were found still intact, albeit slightly crushed with the upper portions of their side slabs sometimes slightly collapsed inwards and downwards. This was due to the weight of the heavy top slabs and pressure from the earth above. The majority of the cists were found with their cover stones or top slabs still in position. Although roots of trees, mainly fibrous roots of the oil palms, were often encountered, the structure and shape of these cist graves were left largely undisturbed. This is because fibrous roots tend to grow around an obstruction rather than into them (the stone cists). Samples sent for radiocarbon dating were from four graves (K1, K2, K3 and K6) found in three different localities of the Changkat Menterī-Ulu Bernam estates. These graves are located within two kilometres of each other, except for K2 and K6 which are on *Bukit Sejarah*.

Where available, more than one sample from different parts of the same cist were sent for dating by the AMS method. The dating was performed by Beta Analytic sent through the NWG Macintosh Centre of Quaternary Dating, University of Sydney. Calibrations to calen-

Table 1. Radiocarbon dates from slab graves within the Changkat Menteri-Ulu Bernam estates.

Grave	Sample Number	Date obtained	Material
K1 (A)	Beta 82668	AD 1655-1950	wood
K1 (B)	Beta 82669	AD 415-650	charred material
K1 (C)	Beta 82670	Modern	organic sediment
K2 (A)	Beta 82671	AD 350-605	charred material
K2 (B)	Beta 82672	AD 1695-1775 and AD 1800-1950	charred material
K3	Beta 82673	395-115 BC	charred material
K6 (A)	Beta 82675	375 BC-AD 25	charred material
K6 (B)	Beta 82676	1215-915 BC	charred material

dar years are calculated using the conventional C14 age. The results of the dating (all calibrated, and expressed in terms of their 2 sigma range) are set out below.

A total of eight samples was dated (Table 1, at end of paper). At first glance the dating results exhibit a wide scatter. Half of these, however, are dates which fall within the period broadly consistent with most archaeologists' expectations for the occurrences of socketed iron tools, glass and stone beads in Southeast Asia. The others (dates obtained from samples Beta 82676, 82668, 82670 and 82672), however, are either too early or too modern and thus lie outside of the time range of known Iron Age sites in Southeast Asia. These dates should be discounted for the purpose of dating the slab graves.

Sample Beta 82676 is a charcoal fragment found embedded in an earthenware potsherd excavated from site K6. The date obtained for this sample is far too early, on the basis of the presence of iron artifacts in the burial, to be considered for dating the grave. This charcoal fragment is interpreted as residual material which was probably long embedded in the clay before the clay was dug out for making pots.

Sample Beta 82670 which has a modern dating is from organic soil inside the cist. This is now found to be organic soil formed fairly recently, presumably from the decay of tree roots which had intruded into the cist. The same would be true for sample Beta 82668 which is an old wood fragment found inside the K1 cist, and sample Beta 82672 which is a tiny fragment of blackened (charred?) wood recovered from the soil matrix inside the K2 cist. These were probably decayed fragments from a tree root which had at some time in the past intruded into the grave.

According to the plantation workers the whole area had been covered with thick forest before parts of the land were cleared for planting tea and much later still for cultivation of oil palms. Prior to this, there might have been pockets of Malay settlement in this riverine area in late historical times during the seventeenth or eighteenth centuries. The clearing of the land by these settlers had probably resulted in the death of the root systems of those trees that were cut down. Some of these trees might have had roots that had grown deep into the soil and had intruded into some of the slab graves. Fortunately, since the ground surface at that time was very much higher than now, there was not then much disturbance from the roots of these forest trees. It was only in the present century that a lot of the earth in many of the areas was removed when terraces were cut for cultivation of plantation crops. As a result of shaving off part of the overburden (soil above the cist grave sites) with terrace cuttings, some of the graves have become more exposed to the root systems of oil palms that were planted above them. On the positive side, however, it is now much easier to find these graves (now usually not more than 60 cm below the present ground surface) than when they lay deeply buried.

Four of the radiocarbon dates (from samples Beta 82669, 82671, 82673 and 82675) are worth considering for the chronology of the Bernam cist graves. The dates obtained from these samples range between the early fourth century BC and the middle seventh century AD. These dates are calibrated and expressed in terms of their 2 sigma range and there is, therefore, a 95 percent chance that the actual age of the associated materials does fall within this range. The mean of the medians of these four calibrated dates would be the early quarter of the second

century AD. The presence of iron artefacts or fragments in all these burials can rule out the fourth century BC as the beginning of this date range. Judging from the types of socketed iron tools and weapons found in these graves and the frequency of their occurrence,¹ we surmise that the culture we are addressing in this paper is that of the late rather than the early Iron Age. Thus we can now narrow down the date range to exclude the very early dates between the fourth century and the early second century BC, because during this period the use of iron in West Malaysia was not yet widespread. A more likely date that can be accepted here would be the first century AD, or the last century BC at the earliest. It should again be stressed here that these graves are from three different localities and that most of the cists (except for K6 and K7) were probably not constructed at the same time, but were spread over centuries as regards their date of construction.

To cross-check the radiocarbon dates obtained for these slab graves, thermoluminescence (TL) analysis was conducted on a sample of earthenware pottery excavated from Grave K6. It was hoped that such direct dating on an actual artifact would also give us a more secure date for the culture concerned. The date obtained is 1600 ± 600 years BP (Rosli Mahat *et al.* 1997). Expressed in calendar years this would be AD 350 ± 600 . The large standard error of 600 years is not very helpful for dating late prehistoric to early protohistoric sites,² for if we were to bracket the 95% confidence interval of the actual age we would have to express it as 850 BC to AD 1550. By itself this TL date with such a large standard error may not be too helpful. But when viewed together with the other acceptable chronometric date obtained from K6, we find that they do overlap on the period between the fourth century BC and the early first century AD.

My discussion of the radiocarbon dates, however, has suggested that it is most unlikely that these iron-using communities in the Bernam Valley can be dated to earlier than the last century BC. At the other end of the scale, adding 600 years to AD 350 would give us a date of AD 950 which would be rather late for the slab grave culture. This date would be much too late compared to the range of acceptable radiocarbon dates discussed above. They do not go later than the seventh century AD. The AMS date (Beta 82675) from this same Grave K6, in fact, does not go later than AD 25.

Radiocarbon dating (confirmed by a single thermoluminescence date) of four of the recently excavated stone cist graves has provided us with a range of dates from the early fourth century BC to the seventh century AD. My discussion of the finds has ruled out the early

end of this scale. I have also suggested that the most likely date for the initial period of this slab grave culture is the first century AD, or just slightly earlier, while the late phase of the culture would lie in the seventh century AD. To confirm this we may now have to take a closer look at some of the excavated materials which can throw further light on the period of the burials and also, where possible, to cross-check the accepted radiocarbon dates of some of the cist graves.

TYPOLOGICAL DATING

One of the most significant finds from our recent excavations that can help give further insights on the dating of the graves are fragments of imported, early Chinese ceramics from inside Grave K3 in the Ulu Bernam Estate. These are fragments from lead-glazed wares. They were found embedded in the soil matrix at the head of the grave when the top cover stones of the cist were removed. Two large rim pieces, attached to the upper portions of the vessel(s), were encountered partly protruding from the clayey soil. The vessel(s) was found lying on its side. The rim piece with a smaller diameter was found enclosed within the larger rim at a slightly higher level above the latter. As these were embedded in wet clayey soil it was impossible to retrieve them without breaking them. These fragments are either from two large dishes or trays with simple straight rims, or from one double-tiered ceramic object which could have been a serving tray, or even a censer or a lampstand.

Small fragments were broken off from the two larger rim pieces for further examination. It was found that the green lead glaze was applied rather thinly over a white slip. The body of the ware is a high-fired earthenware of a light pinkish or buff colour. Careful examination of the fragments shows that the glaze though applied thinly was not runny but viscous, and fitted well to the body. The colour of the glaze, however, was uneven with patches of brownish green. Fresh breaks (sections) were executed on the sherds to examine the glaze more closely. Fritted or glassy layers, coloured bright green like the patina on bronzes, were observed within the glaze. The vessel(s) can now be identified as a Tang lead-glazed ware and can be ascribed a date in the early eighth century AD.

This typological date obtained for Grave K3, however, does not match the AMS date of 395-115 BC obtained for this grave. The sample sent for AMS dating (Beta 82673) had been excavated under carefully controlled conditions and retrieved from the soil matrix inside the stone cist. Since we have only a single AMS date for this grave there is no means for us to assess the reliability of the AMS date. It should also be noted that al-

though the sample from which the date was obtained came from inside the cist, it is again an ecofact and the possibility of this being residual material cannot be ruled out. None of the other burial goods recovered from this grave can be used for more specific dating purposes. These items include a large spherical carnelian bead (25 mm in diameter), a hexagonal biconical bead of rock crystal, seven brownish-red glass beads, and fragments of iron tools or weapons.

The problem of the wide discrepancy between the ceramic date and the AMS date obtained for Grave K3 was only resolved later when another Tang vessel was found in Ulu Basir³ less than three kilometres upstream from our K1 site in Changkat Menter. The find in question was a large black-glazed stoneware jar found by a worker years ago but kept in his garden until he notified the management in 1995.⁴ The find spot was in the bed of an old stream which once drained into the Bernam. Our subsequent survey in this area, however, yielded no further finds.

The bagful of jar fragments which was handed to me for analysis comprised some very large fragments of rim and shoulder parts. Based on these fragments it can be seen that the vessel was a short-necked, high-shouldered jar with lug handles. It was apparently a large jar with rolled lip and was about 60 cm in height. Its stoneware body is grey in colour. Traces of black glaze are still found on some of the fragments. More interesting still are patches of whitish and bluish suffusion seen on some parts of the remaining glaze. This type of suffusions on a black glaze is known only from the northern Chinese kilns, especially in the Henan and Shaanxi provinces. Blackwares with suffused glaze are typical products of the middle Tang period⁵ and can be dated to the eighth and ninth centuries AD (Medley 1981, 1986; Watson 1984). With this find of a Tang blackware with suffused glaze at Ulu Basir, we can accept the eighth century AD date for Grave K3. It is thus suggested that Graves K3 and K4 in the Ulu Bernam Estate date much later than the Changkat Menter graves (K1, K2, and K5 to K8). This chronological difference would also be reflected in the way the cists at K3 and K4 were constructed. Here, thinner granite slabs were used and the cists were not provided with floor slabs.

Finds of Tang ceramics at Grave K3 and at Ulu Basir have shown that the cist grave people were still settled in the Bernam Valley in the eighth century AD. This is probably the final phase of the culture. Although the acceptable AMS dates obtained for the Changkat Menter graves (K1, K2 and K6) do not go beyond the middle seventh century, it must be remembered that the AMS

dates are pertinent merely to the cists with which they are directly associated. While these are good anchor dates for the cist or slab grave culture in Peninsular Malaysia, they do not necessarily date the last of the cists. Therefore an eighth century date is acceptable for the final phase of the culture.

The eighth century date for the last phase of the slab grave culture is further supported by the fact that finds of Chinese ceramics have also been reported from stone cist graves in Indonesia. Here, Chinese ceramics also of the Tang period have been recovered from stone cist graves at Pekauman in East Java (Sumarah Adhyatman and Arifin 1996:39-40). An important fact can be inferred from these data, namely, that the tradition of constructing stone cist graves for the élite and the wealthy was still in practice among some Southeast Asian communities as late as the last quarter of the first millennium AD. By this time Chinese trade ceramics were apparently in fairly wide circulation in Southeast Asia, which in turn attests to the extensive trading networks found in this region during this period. These ceramics, together with other items of wealth such as Indian and/or Southeast Asian beads, were often used as grave goods in the burials of the upper classes.

In the case of the Bernam cist grave communities, some of their glass and stone beads were probably obtained through exchange with Kuala Selinsing, a coastal trading and bead-making settlement on the shores of the Strait of Melaka. The latter was situated less than 120 km (as the crow flies) north of the mouth of the Bernam River. Many of the beads found at Kuala Selinsing are said to be similar to those in the cist grave sites (Beck 1937). Finds of an abundance of raw materials for marking certain types of glass beads as well as stone beads at Kuala Selinsing have prompted Evans (1932:82) to surmise that there was local production of beads at this site. Recent excavations of more sites in the Kuala Selinsing area on Kelumpang Island have obtained a few radiocarbon dates for the settlement. Kelumpang Island is now dated to between 200 BC and AD 1000 (Nik Hassan 1991:151). Clearly, therefore, the Kuala Selinsing settlement was contemporary with the settlements of the cist grave people in the Bernam Valley and adjacent areas. Nonetheless, apart from trade or exchange ties, these groups were apparently unrelated. For example, burials found at the Kuala Selinsing sites were different from the Bernam Valley cist graves.

Cist graves in the Changkat Menter Estate are from a period much earlier than those found at Ulu Bernam. Besides the chronometric dates discussed above, there is another find which is highly significant for the interpre-

tation of the dates from the graves. It is the second instance where bronze has been found at a cist grave site in Changkat Menter. ⁶ During our most recent excavations at Changkat Menter in 1997, fragments of a bronze object were excavated at Grave K8, which is located not far from Grave K1. Our largest fragment is 2.8 cm long and this in itself suggests that they are not fragments from a finger ring. Neither can these be fragments from a thimble or even a ceremonial finger sheath because the shape of the socket is not tapered or slender at one end. Hence the bronze fragments encountered in our excavations at K8 were probably from a small handle or socket of an object. The diameter of this presumed handle is about 1.8 cm, but we do not know its actual length.

What is remarkable about this bronze find is that it is fully decorated with relief patterns (raised about 1.2 mm above the surface) covering almost all of the convex surfaces of the fragments. The designs are arranged lengthwise in panels, with parallel bands arranged around the diameter of the socket below. The relief designs found in the longitudinal panels include a row of pairs of outwardly curling spiral sprays. Each row of spiral sprays is separated from the next by a row of herringbone designs also executed in relief. The parallel bands of design below the panels are placed within a border provided by a simple raised thin band around the handle. Plait designs or perhaps a herringbone pattern (rather indistinct here because of the small size) are found in the lower band, while the upper band is decorated with somewhat smudged blobs of tiny squares (?) which are again rather indistinct because of the small size of the designs. These are all likewise rendered in positive relief. Such fine decorations in raised relief could only have been obtained by the lost wax technique.

The decoration found on this bronze piece and the technology used in fashioning it strongly suggest that the object was a product of some advanced bronze manufacturing centres in Mainland Southeast Asia, possibly in North Vietnam. The designs are somewhat similar to some of those found on the Dong Son bronzes. This recently excavated K8 grave has yet to be dated by chronometric methods. On the basis of the bronze find and the occurrence of iron, this cist grave may be tentatively dated to the first or second century AD.

Other finds recovered from the grave include an iron chisel, 16 translucent dark blue beads, a single fragment of light green glass, and a lot of earthenware pottery. The bronze was recovered outside the cist beside a pile of earthenware bowls placed one inside the other (again these could not be retrieved without breaking them). The iron chisel was also found nearby. The beads and glass

fragment, however, were from inside the cist. More beads would have been found if not for the fact that the head portion of the cist had been disturbed by the time we were able to excavate the site. ⁷ The beautifully decorated bronze piece found in Grave K8 was not only an exotic item, it was clearly also a prestige object. The occupant of Grave K8 must have been a high-status person.

CONCLUSIONS

The discussion above has shown that the dating of the Bernam Valley cist graves is a complex task. Several radiocarbon dates by the AMS method were obtained from a total of four graves coming from three different localities in the Changkat Menter-Ulu Bernam estates. More than one method of chronometric dating was used. Here, TL dating of one of the graves was attempted to cross-check the AMS dates. The AMS dates were subjected to rigorous scrutiny. It was found that we can narrow down the range and at the same time discard those dates from samples which were apparently from residual and intrusive materials. The TL date obtained was found to be consistent (notwithstanding its large standard error) with some of the acceptable AMS dates. Typological dating of some of the exotic burial goods found in some of the cist graves, and a stay find from Ulu Basir nearby, have further clarified the chronology of this cist grave culture in the Bernam Valley.

The Ulu Bernam graves (K3 and K4) can now be dated to the eighth century AD. This is probably the final phase of the culture. Based on the discussion of our chronometric dates the initial occupation of the Bernam Valley by these cist grave people probably occurred sometime in the last century of the first millennium BC or in the first century of the Christian Era. Recent finds of fragments of a beautifully decorated bronze at Grave K8 further confirm the dating for the early phase of occupation at Changkat Menter.

Finally, there is apparently a lot more of analyses to be done, especially on the beads recovered from these cist graves to see if there are any distinct differences, typological as well as chemical, between beads from the earlier graves and those from the later graves. My preliminary study of the beads has found some major differences and these will be the subject of a later paper.

POSTSCRIPT

After the Melaka conference, Dr Ian Glover of London's Institute of Archaeology relayed to me the results of the chemical analysis of the object which had been identified as a Tang lead-glazed ware from Grave K3. The chemi-

cal analysis had been performed at the British Museum by Dr Ian Freestone who recorded a composition of circa 80% tin oxide (SnO_2) and 10% copper oxide (CuO). He concluded that the fragment was "high tin bronze, extremely corroded, lost all copper", i.e. a degraded bronze fragment and, thus, not a lead-glazed ceramic. If this is the correct identification, then Grave 3 would have been considerably older than many of the other cist graves at Changkat Menter and there would be no problem in accepting the radiocarbon date of 395-115 BC (Beta 82673).

However, I harbour some reservations in accepting the results of this chemical analysis. The sample was labelled as "?glaze sample" so probably only the glazed portion was analyzed rather than the total sherd (including the biscuit ware). I do not think it was a highly degraded bronze fragment because when we first excavated the artefact it was in quite good condition, and perfectly round (large sections of the rim area were exposed by the excavation). We had not been able to retrieve the object properly because it was embedded in the wet clayey soil, but we took photographs. Examination of the rims showed a simple roundish (unthickened) rim as one can usually see on glazed ceramic vessels. The shape of the lip was smooth, almost fluid, with no squarish edges (as usually found on rims of bronze vessels) and the glaze was slightly thicker immediately below the rims rather than farther down. The surface of the green glaze which was brownish green in some sections was glossy and very smooth. Also, below the glaze is a biscuit. This was a clean pinkish-buff colour. This is apparently not a bronze piece. Here I would like to refer to our bronze find at Grave 8 some two km away from K3. The object was finely decorated with relief patterns, and not degraded in its material, and the inner surface (undecorated) was smooth but never glossy. The metal here is of a dull colour, not glossy green.

The analyzed "glazed bits" do not seem to have lead in them, so this may rule out my interpretation that the artefact was a lead-glazed ware. But I do not think that it was a bronze object. This is apparently a glazed ceramic vessel (double-tiered tray, dishes, or lampstand) and could still be a Tang piece or even late Han (?). Although we have only small fragments of the object, I would want to conduct further chemical analysis on them.

NOTES

1. This situation is quite unlike many of the early Dong Son culture sites in the Bac Bo region in North Vietnam, where no iron is encountered. At the site of Dong Son itself iron was found but was apparently

still rare (this phase is dated to c.380-195 BC). Sites where iron finds were more common are from later times, for example at Xuan La. The latter has been ascribed a date in the first century AD on the basis of finds of Wang Mang coins at the site (see Higham 1996). One exception in this regard is Ban Don Ta Phet in central Thailand. This is an early Iron Age site which has been radiocarbon dated to the early fourth century BC (Glover 1990:36). Finds of several etched carnelian and agate beads at this site have confirmed its early date. The Bernam cist graves, on the other hand, are apparently much younger in date since etched beads are absent on our large collection of beads (over 4000) recovered from the burials.

2. According to Dr Rosli, the large standard error was incurred because the dorsimeters planted at the sites should preferably have been left in the site for a longer period. As this TL dating was part of a project for a few final year physics students of his department, the dorsimeters had to be removed in time for their analysis and the writing up. Until the TL project was fully completed the results of the AMS dates from K6 were not disclosed to Dr Rosli and his students.
3. This is also an oil palm estate, adjoining the Changkat Menter Estate. According to workers from this estate, a stone structure similar to those just excavated by us was found during the construction of the officers' quarters a few years ago (before we began our archaeological work in the Bernam Valley).
4. Throughout our Bernam Valley archaeological project, the management has been most helpful in all its three estates. Besides this jar find, cist graves (K3, K4 and K8) which were accidentally found by workers were reported to us for our immediate action. Our excavations of graves K1 and K2 drew many spectators from those working in the estates. Consequently, many of the workers (especially tractor drivers) could now recognize many such structures when they encountered them in the course of their work in the estates.
5. This is according to the periodization for the development of Tang ceramics by Chinese and Japanese scholars. The Middle Tang is dated to AD 756-827 (see Watson 1984:57).
6. Fragments of a bronze bowl were found in the 1919 excavations conducted by H.C. Robinson and R.O. Winstedt at the cist grave found by J.A. Legge in 1895 (Evans 1928:112).
7. Grave K8 was accidentally discovered by workers who were cutting a ditch and removing soil from the area. Only the head of the cist was exposed by the vertical

cutting of the soil in this area. The body and foot portion of the cist was still intact inside the earth. Much later, just before our excavations began, the grave was "robbed" by unknown persons who thought that there were treasures inside the grave. The soil at the exposed head of the cist was tunneled through in search of treasures. Fortunately, the cist was constructed sloping towards the foot and this was too deep for the grave robbers to reach.

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