

Research Article

Bronze Drum in Selangor (Malaysia): The Motif and Significance from Archaeological Perspective

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Abstract: This study focuses on the bronze drums found in Selangor, Malaysia. Besides being found in this country, bronze drums are also found in several other locations in Southeast Asia, among them Vietnam, China, Laos, Burma, Cambodia and Indonesia. The discovery of bronze drums in Selangor raised questions about when and how it spread the meaning or philosophy behind the decorative motifs, the function and the extent of its relationship with the local people. This study therefore, employed literature review, typology and lab analysis through the XRF technique on selected samples. Result of the study showed that the motifs displayed on the bronze drums found in Selangor are the stereotype of the bronze drum from the Heger I type, which is a type of bronze drum found in Dongson, Vietnam. This is based on the drawings of the motifs and decorative patterns displayed on the bronze drums' tympanum, among them the star motif, triangle motif, stair motif, tangential circle motif, alphabet motif, bird motif, frog motif and so on. The motifs displayed are manifestations associated with the activities of life of the people from the Late Prehistoric period in Southeast Asia. The widespread distribution of bronze drum findings is a result of the various functions of the bronze drum either as a ritual object, status symbol, trade object, burial object and so on. This object is believed to have spread in Selangor through maritime trade activities based on its discovery close to tin-rich areas.

Keywords: Bronze drum, Kampung Bukit Kuda/Klang, Kampung Sungai Lang, Kampung Sungai Sedu, motifs

INTRODUCTION

A total of 9 bronze drums have been found in Malaysia, namely eight in Peninsular Malaysia and one in East Malaysia (Sabah). The 8 bronze drums found in Peninsular Malaysia consist of 4 bronze drums which were discovered in the state of Selangor, 3 bronze drums found in the state of Terengganu and one other bronze drum found in Pahang. All the bronze drums that were found in Malaysia are chance find and in incomplete state or in the form of tympanum fragments only. Nevertheless, in terms of their physical characteristics (especially the bronze drum tympanum fragments) and the shape of their decorative motifs, it was discovered that all the bronze drums found in Peninsular Malaysia are the stereotype of the Heger I type bronze drums that were found in Dongson, Vietnam. Four bronze drums that were found in Selangor are the Kampung Bukit Kuda/Klang bronze drum, Kampung Sungai Lang I bronze drum, Kampung Sungai Lang II bronze drum and Kampung Sungai Sedu bronze drum.

Bronze drum of Kampung Bukit Kuda/Klang, Selangor: Kampung Bukit Kuda bronze drum is also sometimes known as the Kelang bronze drum. This bronze drum was found in Kampung Bukit Kuda, which is a small hill that is located near the location of the discovery between Kelang River and Rasau River, Selangor. The location of Kampung Bukit Kuda is in the area of Kelang, Selangor which is on the east of the present Kelang town. According to Leong (1998), the finding of this bronze drum in Bukit Kuda, Selangor, happened in the year 1944 during the construction work at the time of the Japanese military rule in this country during World War II. According to Linehan (1951), the diameter of the Kampung Bukit Kuda/Klang drum is 58.4 cm and its height reached a measurement of about 35.6 cm (Fig. 1).

Bronze drum of Kampung Sungai Lang I, Selangor: Kampung Sungai Lang's bronze drum was found in Kampung Sungai Lang, in the Kuala Langat district, Selangor, which is about 40 km from Klang. Two bronze drums were found in this location which are the Kampung Sungai Lang I bronze drum (large sized

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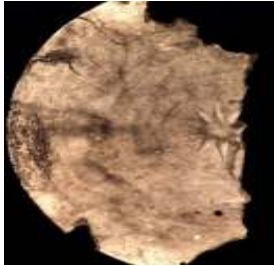


Fig. 1: Tympanum fragment of Kampung Bukit Kuda/Klang, Selangor bronze drum



Fig. 2: Tympanum of Kampung Sungai Lang I, Selangor bronze drum



Fig. 3: Replica of Kampung Sungai Lang II, Selangor bronze drum's tympanum

bronze drum) and the Kampung Sungai Lang II bronze drum (small sized bronze drum). Both the bronze drums were found in 1964. According to Kempers (1988), the two objects were found accidentally (chance find) in upside down condition or bottomed up on a piece of plank which is believed to be part of a dug-out canoe structure that was also found in the site. Both the bronze drums are believed to be relics of the people of the Metal Age based on the analysis using radio-carbon technique, that is about 2453 ± 95 BC (Leong, 1998). Absolute dating was conducted on a piece of wood from the discovery site which is considered perhaps the remains of a boat or canoe at that time. Also found together with the bronze drum at this site were several beads (Fig. 2).

Bronze drum of Kampung Sungai Lang II, Selangor: Kampung Sungai Lang II bronze drum was found together with the Kampung Sungai Lang I bronze drum in Kampung Sungai Lang, Kuala Langat district, Selangor. The Kampung Sungai Lang II bronze drum is a large sized bronze drum if compared with the



Fig. 4: Fragment of Kampung Sungai Sedu, Selangor bronze drum's tympanum

Kampung Sungai Lang I bronze drum. According to Kempers (1988), the tympanum measurement of Kampung Sungai Lang II bronze drum (large drum) is about 54.5 cm (Fig. 3).

Bronze drum of Kampung Sungai Sedu, Selangor: Kampung Sungai Sedu bronze drum was found in Kampung Sungai Sedu, Langat district, Selangor. This bronze drum was found in 1996 at the bank of Sungai Sedu by chance by brick makers after they dug at a depth of 50 cm from the surface of the soil to obtain clay. According to Leong (1998), based on the research, it was found that the measurement of the fragment, especially the tympanum part of the bronze drum, has a maximum length of 35 cm and width of about 23.5 cm. However, the estimation of its width in terms of its actual diameter if unbroken is about 58 cm. According to Leong Sau Heng further, there is a possibility the width of its size is about the same as the size of the bronze drum found in Bukit Kuda/Klang in 1944 which is with a diameter of 57.8 cm (Fig. 4).

Problem statement: There are several problem statements that exist following the discovery of the bronze drums in Selangor. Therefore, the main objective of this study was to identify the shape of the motifs and decorative patterns displayed on the bronze drums in Selangor. In addition, the study sought to identify the meaning or depiction behind the sketches or drawings of the motifs and decorative patterns of the bronze drums and their functions. Besides, the study also examined the extent to which similarities and differences exist between the shape of the motifs and the decorative patterns of the bronze drums in Selangor with the findings of bronze drums in other areas. Apart from that, it also sought to find out what are the main components contained in the making of the bronze drums in Selangor. In addition, the study also investigated into how the bronze spread in this region, including in Selangor and its relation with the socio-culture of the local people.

METHODOLOGY

Research on the bronze drums found in Selangor was conducted using the literature review method, lab

analysis using the XRF technique and the typology method. The XRF technique was selected to be applied in this study because it is a non-destructive instrumentation technique that is often used. According to Asyaari (1998), this technique is capable of determining the concentration of an element or elements (from Boron, $Z = 5$ to Uranium, $Z = 92$) that is contained in solid, powder or liquid matter as well as determining the concentration of the elements based on wavelength and the intensity of the X-ray. Several analysis have been done on heritage artefacts such as ancient beads (Ramli *et al.*, 2011a), bricks from ancient temple (Ramli *et al.*, 2012, 2013a, 2013b, 2013c, 2013d, 2014a), votive tablet (Ramli *et al.* 2014b) and prehistoric potteries (Ramli *et al.*, 2011b). Usually, compositional analysis on artefacts is performed to determine whether the artefacts are locally made or not. Meanwhile, the typology method is more of a process of examining the decorative motifs and symbols found on the study sample. The typology method also enables comparative study to be conducted between the motifs found on the study sample to look at the extent to which changes occur on the motifs and also the decorative patterns. The typology method is also considered very important in the effort of making interpretations of any human culture. This is because all the changes that occurred on the decorations and decorative motifs of the study samples are also influenced by the current developments taking place in the lives of the people who supports it. Indirectly, these developments also reflect the levels of progress achieved by the people during that period. However, most importantly, the typology method is believed to be able to help in determining the status of the artefacts as either old (early) or young (later). Therefore, by using the typology method, examination on the motifs and the decorative patterns of the bronze drums found in Selangor can be described as follows.

RESULTS

Analysis of decorative motifs: The physical structure of Kampung Bukit Kuda/Klang bronze drum is incomplete except for the fragment of the body part and tympanum of the bronze drum only. This is because this object was found accidentally or by chance and not through archaeological excavation which results in no accurate data relating to the details of its findings. Nevertheless, observation showed that there are several types of decorative motifs displayed on part of the tympanum found. Among the decorative motifs displayed on the tympanum of Kampung Bukit Kuda/Klang bronze drum are a star motif (10 points), triangle motif (code 'V2 and code 2%'), alphabet motif (code 'Z2') layered circle motif, stair motif and heron bird motif (4 birds) (Kempers, 1988) (Fig. 5).



Fig. 5: Illustration of the motifs and decorative patterns on the bronze drum of Kampung Bukit Kuda/Klang



Fig. 6: Motifs and decorative patterns of Kampung Sungai Lang II bronze drum

Meanwhile, the physical structure of Kampung Sungai Lang I bronze drum is also in incomplete condition as it was only found in the form of body and tympanum fragments. Since this object was found by chance, no complete data was obtained in connection to its findings. Nevertheless, according to Kempers (1988), the measurement of the tympanum of Kampung Sungai Lang I bronze drum (small drum) is 36 cm. By using the typology method, a number of decorative motifs were found to be displayed on the tympanum of this bronze drum. Among the decorative motifs displayed on the tympanum of Kampung Sungai Lang I bronze drum is a star motif (a 10 point star motif), triangle motif (combination of code 'A3' and code 'V3'), saw motif, tangential circle motif and heron bird motif (4 birds) (Kempers, 1988).

As this object was found together with Kampung Sungai Lang I bronze drum, the physical structure of Kampung Sungai Lang II bronze drum is also incomplete apart from the fragment of the bronze drum's tympanum only. Nonetheless, if viewed in terms of the decorative motifs displayed, there is a small difference between the bronze drum of Kampung Sungai Lang II and the bronze drum of Kampung Sungai Lang I. Among the decorative motifs displayed on Kampung Sungai Lang II bronze drum's tympanum is a star motif (12 points), triangle motif (code 'V3'), saw motif, tangential circle motif, stair motif, flying bird motif (a total of 20 birds with wings spread vertically above), heron bird motif (6 birds) and frog motif (4 frogs) (Kempers, 1988) (Fig. 6).

Table 1: Types of motifs of the Selangor bronze drums

Types of motifs	Kampung Bukit Kuda/Klang bronze drum	Kampung Sungai Lang I bronze drum	Kampung Sungai Lang II bronze drum	Kampung Sungai Sedu bronze drum
Star motif	√ (10 points)	√ (10 points)	√ (12 points)	-
Triangle motif	√ • Code 'V2' • Code '%2'	√ • Code 'A3' • Code 'V3'	√ • Code 'V3'	-
Stair motif	√	√	√	√
Bird motif	√	√	√	√
Saw motif	-	√	√	-
Tangential circle motif	-	√	√	-
Dotted circle motif	-	-	-	√
Layered circle motif	√	-	-	-
Frog motif	-	-	√	-

Similar to the bronze drum of Kampung Bukit Kuda/Klang, the bronze drum of Kampung Sungai Lang I and the bronze drum of Kampung Sungai Lang II, data on the bronze drum of Kampung Sungai Sedu are incomplete except for the fragments of the bronze drum's tympanum only. According to Leong (1998), based on research, it was found that the measurement of the fragments, particularly the tympanum of the Dongson bronze drum has a maximum length of 35 cm and width of about 23.5 cm. However, the estimation of its width in terms of the actual diameter if it is not broken is about 58 cm. Apart from the tympanum fragments of this object which is small in size, it was found that its surface is also a bit blurred resulting in the display of the decorative motifs quite difficult to be identified clearly. Nevertheless, based on observation, there are several types of motifs displayed on the surface of the bronze drum's tympanum, among them the bird motif, stair motif and dotted circle motif.

Comparatively, the details of the motif and decorative patterns for the bronze drums of Selangor are as presented in the following Table 1.

Based on the Table 1, all the bronze drums in Selangor were found to display the star motif except for the Kampung Sungai Sedu bronze drum of which its motif was difficult to determine because there is no data as it is only in the form of fragments only. The star motifs displayed on the bronze drums are different in terms of the number of their points, for example, the star motif on the bronze drum of Kampung Bukit Kuda/Klang has 10 points, the star motif on the bronze drum of Kampung Sungai Lang I also has 10 points while the bronze drum of Kampung Sungai Lang II has 12 points. It is the same with the triangle motif, the stair motif and the bird motif where it was found that all the bronze drums in Selangor displayed those motifs. However, if inspected, it would be discovered that the code of the triangle motifs for all the three bronze drums are different, for example for the bronze drum of Kampung Bukit Kuda/Klang two types of codes are displayed, namely code 'V2' and code '2%', for the bronze drum of Kampung Sungai Lang I two types of

codes are displayed, namely code 'A3' and code 'V3', while for the bronze drum of Kampung Sungai Lang II only code 'V3' is displayed. Meanwhile, the saw motif and the tangential circle motif were found on only two bronze drums, namely the bronze drum of Kampung Sungai Lang I and the bronze drum of Kampung Sungai Lang II. On the other hand, for the dotted circle motif, it was found displayed on the bronze drum of Kampung Sungai Sedu only. Similarly, the layered circle motif was found displayed on the bronze drum of Kampung Bukit Kuda/Klang only and not on the other bronze drums. The only bronze drum in Selangor which displayed the frog motif is the bronze drum of Kampung Sungai Lang II.

Additionally, one of the elements of decorative motifs frequently observed on the tympanum of bronze drums is the animal motif. Although there are several types of animal motifs that are often displayed such as deer, tiger, snail, duck and many others, generally the animal motifs that are quite popular and often displayed are the bird motif and frog motif. The bird motif consists of three types, namely the heron motif, the one layer flying bird motif and the two layer flying bird motif. Hence, there are researchers who proposed their opinion that the bird motif displayed on the tympanum of the bronze drums is the egret because it is synonymous with the activities of the agrarian society. Nevertheless, to date, there is still no absolute certainty about what kind of bird is actually displayed on the tympanum of the bronze drums. This situation indirectly has created a polemic among researchers. For example, Dao Duy stated that the bird motif displayed on bronze drums is a type of very popular bird in the legends of the Viet people that is known as the 'lac bird' (Han, 1998). In contrast, Dao Tu Kai stated that the bird motif is not the lac bird but rather a type of the magpie species or another species of bird; indeed, he is more inclined to state that the bird motif is a type of heron (Han, 1998). The animal motifs (referring to the bird motif and frog motif) were also displayed on the bronze drums found in Selangor as illustrated in the following Table 2.

Table 2: Comparison of the animal motifs of the Selangor bronze drum

Type of motifs	Kampung Bukit Kuda/Klang bronze drum	Kampung Sungai Lang I bronze drum	Kampung Sungai Lang II bronze drum	Kampung Sungai Sedu bronze drum
Bird motif	4 birds	4 birds	6 birds	Bird motif is displayed but it is difficult to determine the number
Flying bird motif (one layer)	-	-	-	-
Flying bird motif (two layers)	-	-	20 birds	-
Frog motif	-	-	4 frogs	-

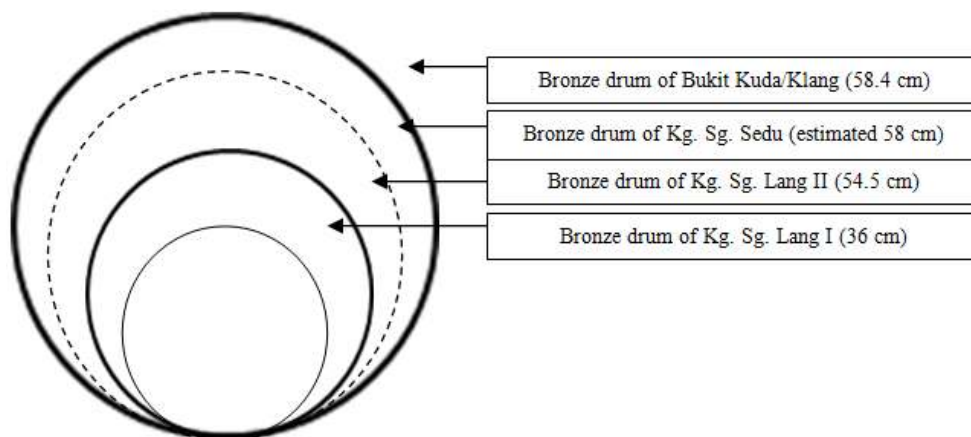


Fig. 7: Comparison of the tympanum size of the bronze drums in Selangor

Based on the Table 2, it was found that all the bronze drums in Selangor displayed or featured the bird motif. Referring to the sketches or drawings displayed, they are found to be a stereotype of the bird motif often displayed on the bronze drums of the Heger I type. According to Kempers (1988), most of the bronze drums of the Heger I type found so far featured or displayed the heron motif. The total or the number of heron motif displayed on the tympanum of the bronze drums in Selangor is 4 herons (bronze drum of Kampung Bukit Kuda/Klang and the bronze drum of Kampung Sungai Lang I) while for the bronze drum of Kampung Sungai Lang II is 6. Meanwhile, the two layer flying bird motif is only displayed on the bronze drum of Kampung Sungai Lang II where its number amounts to about 20 birds. On the other hand, for the frog motif, it was found to be displayed only on the bronze drum of Kampung Sungai Lang II, namely a total of 4 frogs (Fig. 7).

In general, the comparison of the size of the bronze drums' tympanum in Selangor is as shown in the Table 3.

Lab analysis: Lab analysis of the bronze drums in Selangor was only conducted on two bronze drums, namely the bronze drum of Kampung Bukit Kuda/Klang and the bronze drum of Kampung Sungai Sedu. Meanwhile, for the two bronze drums found in Kampung Sungai Lang, samples failed to be obtained for lab analysis. The samples for the bronze drum of

Table 3: Study sample result of the bronze drums in Selangor, Malaysia

Code	Sample	Colour
GDK	Dongson drum, Kelang, Selangor	Greenish dark yellow, metallic
GDSSKL	Dongson drum, Kg. Sungai Sedu, Kuala Langat, Selangor	Greenish dark grey, metallic

MINT, Khidmat/003 (2) 11 (613)

Kampung Bukit Kuda/Klang and the bronze drum of Kampung Sungai Sedu were sent to MINT for analysis.

Sample for XRF study: The samples were transformed into 32 mm diameter pressed-powder pellets. The pellets were rimmed and backed by pure boric acid powder. Twenty tonne of pressure was applied to stick the samples firmly on the analysable surface of the samples.

Analytical technique: The constituent metallic elements of the artefacts were determined by the X-Ray Fluorescence technique (XRF), using fully automated Philips PW1480/20 spectrometer.

The result of the lab analysis conducted using the XRF method to find out the metal content in the artefacts is presented in the Table 3.

The following graph shows the metal content in the bronze drum of Kampung Bukit Kuda/Klang and the bronze drum of Kampung Sungai Sedu using the XRF method (Fig. 8).

Based on the graph in the table above, it was found that the highest metal content for the bronze drum

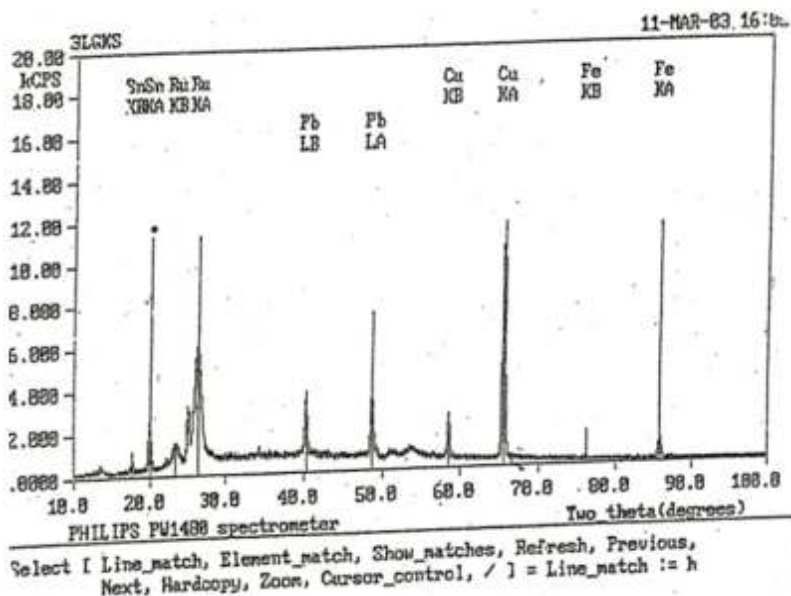


Fig. 8: Graph of metal content for the bronze drum of Kampung Bukit Kuda/Klang, Selangor

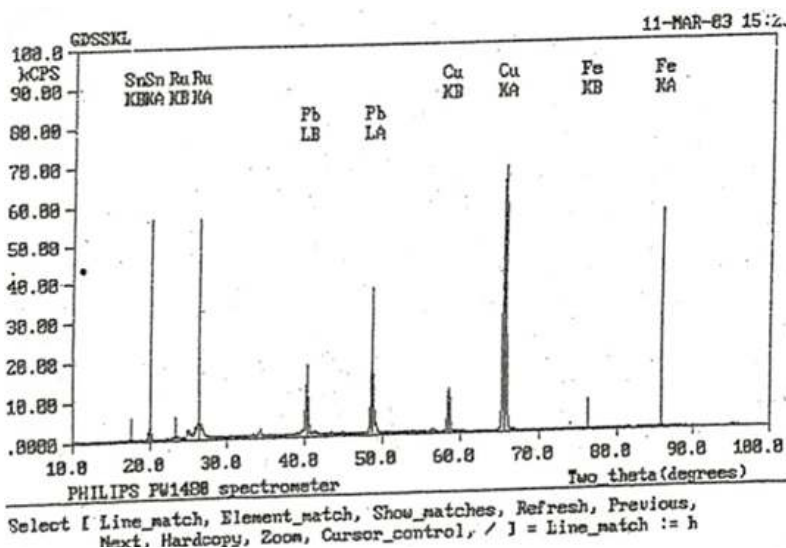


Fig. 9: Graph of metal content for the bronze drum of Kampung Sungai Sedu, Selangor

artefact of Kampung Bukit Kuda/Klang, Selangor is copper with kcps amount exceeding 100.00 compared to tin and iron which nearly reached 60.00 kcps. In contrast, the lead content in the bronze drum is of a small amount only, which is about 40.00 kcps (Fig. 9).

Based on the graph in the table above, the metal content in the bronze drum artefact of Kampung Sungai Sedu, Langat, Selangor is shown to be almost similar, namely almost reaching the amount of 30.00 kcps for the three types of metal: tin, copper and iron. However, tin is the metal of the smallest amount in this artefact with a total of less than 20.00 kcps. Based on the XRF method conducted on these two types of artefacts, it was found that the lead content (Pb) is the highest of all metal content, followed by tin metal content (Sn) and

the metal with the smallest amount for the artefacts is iron (Fe).

DISCUSSION

Settlements of the metal age people: The discovery of bronze drums in Selangor can be associated with the issues of early community's settlement in Selangor. This refers to the findings of artefacts, mostly of bronze and iron such as bronze drums, bronze bells, bronze bowls and socketed iron. The bronze artefacts found were more of trade goods because these bronze artefact findings are believed to be imported from outside while the socketed iron artefact is believed to be locally made. In addition, most of the settlements of the Metal Age

people in Selangor were near the river based on the cultural data of the slab grave (stone) found in the south of Selangor such as in Changkat Menteri (Evans, 1931; Leong, 1993), in Sungai Klang with the findings of iron and bronze metal sites (Loewenstein, 1956; Sieveking, 1956), in Sungai Langat, Sungai Sedu and Sungai Semenyih with the findings of bronze metal artefacts at the Sungai Sedu, Kampung Sungai Lang and Jenderam Hilir sites (Loewenstein, 1956; Peacock, 1964, 1965; Leong, 1989). The active use of these rivers was because of the invention of the canoe in Peninsular Malaysia the latest around 5000 years ago and this resulted in river routes being used actively since the time of the people of the Neolithic Age (Nik Hassan Shuhaimi, 2002). Three main areas of the Metal Age site findings in Selangor are in Klang, Sungai Langat (Kampung Sungai Sedu and Kampung Sungai Lang) and in Jenderam Hilir.

Trade activities: Bronze drum findings in Selangor are also in strategic locations which are in areas near rivers since the Neolithic Age until the Protohistoric Period. Sungai Bernam, Sungai Klang and Sungai Langat have been identified as the feeder points for supply ports and entrepôts in the Malay Peninsula. Feeder point is the centre of the small local suppliers in which its role is to supply selected goods that are not available in other areas. The local people, namely the maritime community, are believed to have played important roles as the middlemen because of the long trade relationship which had existed since the Neolithic Age. Feeder points developed rapidly when the need for a product or goods increased and grew as a result of the rapidity and growth of entrepôts. Most of the feeder points could be found along the coastal areas and also in the areas of river basins.

Supply of raw materials: The river valleys in Selangor were rich in sources of tin which was needed by the outside community to produce bronze products. Some sites in the country such as Sungai Lang, Sungai Sedu, Jenderam Hilir (Selangor) were locations that supplied tin ore (Jusoh *et al.*, 2012). Thus, based on this development, it is not surprising if this relationship continued until the Historic Period because of the wealth of this land especially in the east coast of the Peninsular which was rich in sources of gold and the west coast of the Peninsular which was rich in sources of tin ore. The river basins in Selangor in the stages of early human settlement were not only used as places to find sources of food and as suitable areas for farming but were also actively used as routes to connect people. These routes had been used to establish relationship with the people inland and also the outside community particularly with the people in the Southeast Asian region. Findings of archaeological data which covered the Neolithic Age to the Metal Age and also discovery

of slab graves (stone) show that the early people or community in Selangor at that time made the areas near rivers or river basins as their main settlement areas.

Dating: Contributions from the discovery of the bronze drums in Selangor are huge especially in terms of dating. This is because relatively, the Bronze Age site is estimated to have dated back to 500 BC. Some data of dates based on absolute dating have been successfully obtained at sites such as in Kampung Sungai Lang and in Jenderam Hilir. The dates of the absolute dating from the site in Kampung Sungai Lang show that the Metal Age in Selangor is likely to be earlier. The absolute dating obtained from the Jenderam Hilir site showed the dates of 4290 ± 200 and 2490 ± 90 BP (Leong, 1989). This absolute dating was carried out on a piece of wood from the discovery site which is considered probably a remnant of a canoe from that period. According to Peacock (1969), the radio-carbon analysis on the wood sample (believed to be fragments of a dug-out canoe) that was found together with the bronze drum clearly shows that the artefact dating is of the age of 2453 ± 95 years, which is about 485 BC.

CONCLUSION

The discovery of bronze drums in Selangor is very important, in particular from the perspective of archaeology. This is because the discovery shows that Selangor has gone through a long history with the emergence of human settlement especially in the areas near to rivers since the Metal Age. The presence of bronze drums in Selangor also shows that trade activities between the local people and the outside world, either through sea routes or river routes had existed and flourished. Furthermore, the river basins in Selangor which were rich in raw materials especially tin were crucial in producing these bronze drums. This situation not only shaped the settlement pattern in the area, but indeed it also resulted in the emergence of feeder point ports for trade activities in the coastal areas of the Straits of Malacca. The various functions of the bronze drum have caused it to obtain a special status in the life of the local people either as a status symbol, burial objects and so on.

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