

## **Neolithic Settlement on the River Bank of Kelantan River, Kampung Kubang Pak Amin, Tendong, Kelantan, Malaysia: A New Data**

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**Abstract:** The discoveries of several types of Neolithic stone tools and tripod legs potteries in Kampung Kubang Pak Amin, Pasir Mas have contributed a new data for prehistoric archaeological research in Kelantan. Before this, there is no evidence of Neolithic settlement which located near to the coastal area ever been found by archaeologist who studies prehistoric in Kelantan. The findings of several artifacts such as polished stone axe and adze, tembeling knife and tripod leg potteries indicated that the settlement was a Neolithic settlement located along Kelantan River banks and situated near the coastal area. The discovery of other artefacts in this site is also interesting in which among them are the finding of semi-circular shouldered stone axe that is also sometimes associated with coastal communities and the finding of tripod legs that were found in abundance in Jenderam Hilir and Gua Berhala in Kodiang. The out of context discovery in Kampung Kubang Pak Amin has enabled further research to be conducted in the nearby areas to gather data concerning the dating of the Neolithic Age in this area. The findings of pottery fragments on the river bank of Sat River could be an indication of coastal community settlements in Kelantan that produced pottery. Based on the relative dating, the Neolithic site of Kampung Kubang Pak Amin is believed to have been inhabited by the Neolithic people between 3700-3000 BP.

**Key words:** Kampung Kubang Pak Amin, tembeling knife, Neolithic, Kelantan River, Sat River, prehistoric

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### **INTRODUCTION**

The accidental discovery by the villagers who were initially carrying out fishing activities in Sungai Kelantan near Kampung Kubang Kerian has been the talk of the surrounding villagers on the discovery of old coins that are believed to be hundreds of years old. Early report of the finding was broadcasted on the TV9 television network on 23 February 2014 where the Director of the Kelantan Museum Board was interviewed about the old coins on the banks of Sungai Kelantan near Kampung Kubang Pak Amin (Hashim *et al.*, 2014). As a result of the information, the National Heritage Department in collaboration with the Kelantan State Museum Corporation have carried out rescue work of the National heritage artefacts by conducting exploration activities along the river bank of Sungai Kelantan near to the discoveries of those artefacts (Anonymous,

2014). The result is that not only were old coins found but various types of other artefacts in the form of ceramics were also found such as pottery and foreign ceramics that are anticipated to originate from China and also the Netherlands. Most of the Chinese ceramics that were found originated from the Ching Dynasty (1644-1912 AD) while the pottery is anticipated to be produced locally or imported from Thailand. This discovery clearly shows that his area was once a bustling port and might have also been the administrative area of the Kelantanese Sultanate.

The outcome of the exploration has also uncovered findings that are considered important, namely findings of adze, polished stone axe of the Neolithic Age. In addition, shouldered stone axe was also found which was previously only found in Guar Kepah, Seberang Prai, Pulau Pinang as well as tembeling knife (Abdullah, 2014) that were once found in Sungai Tembeling Pahang, Gua

Madu in Gua Musang (Tweedie, 1953), Kelantan, Baling, Kedah and in Dengkil, Selangor which is associated with the community in Jenderam Hilir (Heng, 1986). The discovery of two tembeling knives is the second such discovery in Kelantan. The discovery of various sized adze and stone axe has become the justification on the importance of this site in the Neolithic Age in Kelantan and also in Malaysia in general. Apart from that, data of the accidental finding has also unearthed two grindstones that originated from sandstone rocks and stone tools which functioned as anvil. A relatively important discovery is the discovery of tripod legs that originated from tripod pottery which previously was also found in Jenderam Hilir (Heng, 1986), Gua Bintong, Gua Gergasi and Bukit Cangkul in Perlis (Peacock, 1968) and Gua Berhala, Gua Pasir and Gua Taufan in Bukit Kepelu, Kodiang, Kedah, Gua Baik in Perak (Callenfels and Noone, 1940) and Kampung Dusun Raja in Kelantan.

The discovery of the Neolithic Age artefacts in an open site and near to the coastal area is the first of such discovery in Kelantan. This site is believed to be located close to the coastal area sometime ago based on the observation on the soil stratigraphy as a result of soil drilling activities. This area is also believed to be very active in trading activities with the people from the inland areas especially in Hulu Kelantan which has unearthed various relics of the people of the Hoabinhian period and the Neolithic Age since 12,000-13,000 years ago (Taha, 2007). Sungai Kelantan was also the trans-peninsula route to Terengganu, Pahang and Selangor. The out of context data that was found in this area indicated that the area around Sungai Kelantan near to Kampung Kubang Pak Amin has been inhabited and used since the Neolithic Age and its importance is seen to continue until the 18th century AD.

#### **Prehistoric period research and excavation in Kelantan:**

Archaeological research and excavation in Kelantan has begun since 1935 when HD. Noone carried out trial excavation in Gua Cha (Noone, 1939). Gua Cha at this point in time is known as Gua Menter and the first excavation was carried out by Noone and later by Sieveking (1954) and this cave is later known as Gua Cha. A total of two digging pits were opened and these had uncovered 2 burial sites and 8 potteries that are complete in shape. Among the artefacts found at this site are pottery fragments, three stone axes that had been smoothen, two grindstones, one necked stone axe, two quadrangular stone axes and one cutting axe. The result of the study also shows that Gua Menter was used as a burial site where eight pottery bowls were found in-situ together with human skeletons. These bowls were used as grave accompaniment implements of which this culture

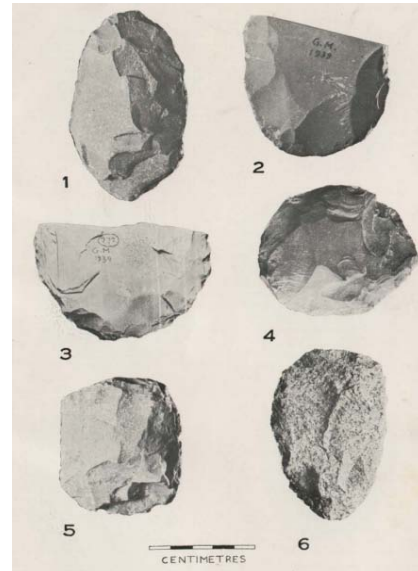


Fig. 1: Stone tools of Hobinlian period in Gua Madu (Tweedie, 1940)

was performed during the Neolithic Age. Apart from being used as a burial site, Gua Menter was also used as a place to produce stone tools based on the equipment to produce stone tools that was found at the site, namely horn that was used to flatten stone tools and stone cutters.

Tweedie (1949) had carried out his research in Gua Madu and Gua Musang where he found various interesting artefacts. Among these are stone tools of the Hoabinhian period that were also known as 'sumatralith' and Neolithic Age stone tools (Fig. 1-3). The Hoabinhian period stone tools that were found are in the form of ovul and discoid. The Neolithic Age stone tools on the other hand, consist of stone axes and adzes as well as bark-beater stone tools. In addition, there are many hammer stones which have haematite marks. In Gua Madu was also found two burial sites of the Neolithic people and the burial method practised is horizontal burial. Tweedie (1940) also reported findings of shells that originated from the sea that clearly show the existence of trade activities with coastal communities. In Gua Musang, the discovery is in contrast to the findings in Gua Madu where in Gua Musang complete or unbroken pottery pieces and thousands of pottery sherds were found while in Gua Madu many stone tools of the Hoabinhian period were found and less the pottery piece (Fig. 4 and 5).

Among the pottery pieces found were two large bowls that are red in colour and patterned with cord marks a bowl of three spirals in shiny dark brown colour and without decorations, a semi-circular bowl of dark brown

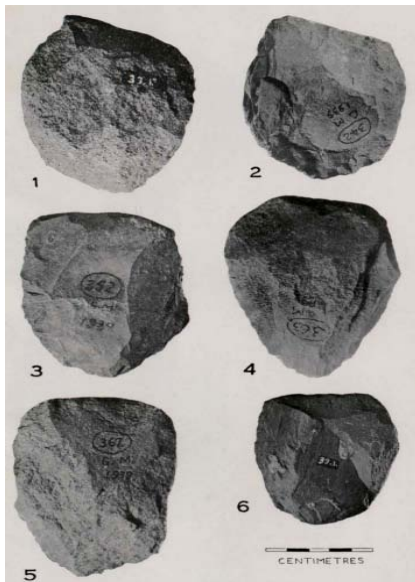


Fig. 2: Stone tools of Hobbinhian period in Gua Madu, Kelantan (Tweedie, 1940)

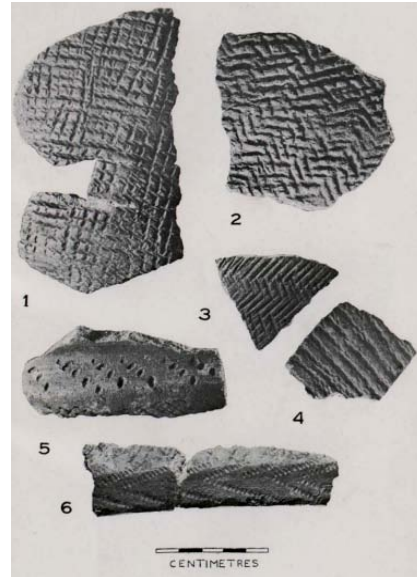


Fig. 4: Pottery Sherds in Gua Musang (Tweedie, 1940)

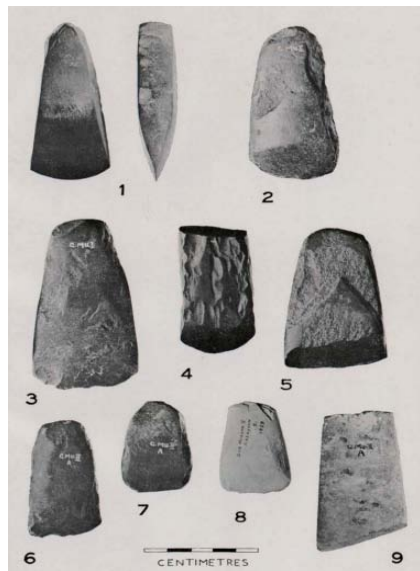


Fig. 3: Stone tools of the Neolithic Age found in Gua Muda and Gua Musang (Tweedie, 1940)

colour of which its surface has cord marked patterns and the rim shiny, a funneled and footed bowl that is dark brown in colour stone tools of the Neolithic age were also found and among these were stone adzes and unfinished Neolithic stone tools.

Subsequent research was carried out in 1951 by William Hunt and then by G. de G. Sieveking in

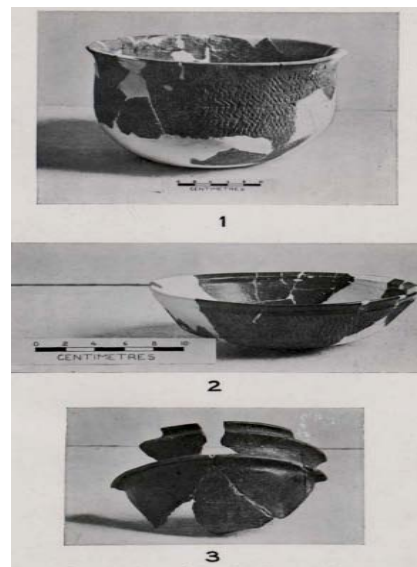


Fig. 5: Pottery found in Gua Musang (Tweedie, 1940)

Gua Cha. The excavation carried out by Sieveking uncovered various types of artefacts from the Hoabinhian period to the Late Neolithic Age. Among his findings were stone axes and adzes, stone bracelets and pottery that had motifs of cord marks, geometric patterns, loop patterns and comb patterns. On the fourth layer, excavation in the first pit uncovered a total of 20 axes or quadrangular adzes of which their workmanship is a bit rougher than the previous layer. This pit also uncovered

Table 1: Chronometric dating of Gua Cha, Ulu Kelantan

Items	Dating (BP)
Burnt rice	810±80
Coal found in the third layer which showed the end of the Hoabinhian period and the beginning of the Neolithic Age	3020±230
Coal that was found in the top part of the 4th layer	6300±170

the burial site of the people of the Neolithic Age. The second and the third pit also uncovered various types of stone tools and also several human skeletons of the Neolithic Age and the Hoabinhian period. Peacock had carried out his research and excavation in Gua Jaya and Gua Chawan in the years between 1962-1963. Nevertheless, Peacock did not carry out systematic excavations and reported of findings such as pottery sherds and Hoabinhian stone tools (Peacock and Dunn, 1964; Harrison and Peacock, 1964). In 1967, he conducted research in Gua Tampaq that is located near the indigenous people's settlements in Kuala Bering close to Sungai Jenera. He reported of Hoabinhian stone tool findings and pottery sherds with cord marks in the cave's surface. In close proximity to this Kuala Bering limestone complex is an area that is named Batu Kenong and this area was reported by Peacock on the findings of two pieces of pottery. Survey that was carried out by Taha (1993) uncovered a cave that is named Gua Tagut. In this cave was found cave drawings in which the drawings were in the form of human and animal figures. Cave drawings in Gua Tagut are also almost similar to the cave drawings in Gua Batu Cincin which is located in Kuala Betis (Taha, 2007).

In the year 1979, Adi Taha carried out his excavation in Gua Cha for data requirement of his master's thesis at Australia National University. His master's thesis was published in the Federated Museum Journal in 1985 with the title "The re-excavation of the rock shelter of Gua Cha, Ulu Kelantan, West Malaysia". The research that he carried out is more systematic and scientific where research on the chemical composition of the soil, geomorphology, analysis on the human skeletal bones study on the ecofact remains which are the animal bones and statistical approach in data analysis were carried out. Excavation in Gua Cha also obtained several chronometric dating at the site which includes among others (Table 1). Studies on the soil composition has also proven that cultural evolution took place, namely from the Hoabinhian period to the Neolithic Age and rejected Sieveking's opinion which stated that the soil layer between the Hoabinhian cultural layer and the Neolithic layer is a barren layer without culture. Research by Adi Taha has revealed that the barren layer is actually a flood layer. This indirectly rejected the opinion which stated that the Neolithic community is a community that migrated from Southeast Asia mainland.

Research and excavation in Gua Chawas and Gua Peraling in Ulu Kelantan was conducted in 1994-1995 by the Museum and Antiquity Department headed by Adi

Taha. The main purpose was to develop a chronology of the pre-historic people's cultural sequence in the two sites and make a comparison with the site in Gua Cha. Excavations at the two sites have uncovered a variety of stone tools of the Hoabinhian period and the Neolithic Age in addition to ecofact in the form of food waste and animal bones. Chronometric dating data in Gua Chawas indicated that it was occupied since 12,000 years ago while the Neolithic Age began since 3000 years ago (Taha, 2007). In Gua Peraling, the 3 m thick Hoabinhian cultural layer has uncovered various types of artefacts in the form of bifacial flake implements, findings of bifacial pebble stone implements in large quantities and ecofacts such as bones and shells. Gua Peraling also uncovered traces that it was used as a burial site. Soil layer in Gua Chawas is also rich in phytolith of which among those identified are two species of banana, four species of rattan and three species of bamboo. These data were obtained from the Hoabinhian cultural layer that is between 12,000-5000 years ago (Bellwood, 2007). Archaeological data in Gua Chawas is also interesting based on the findings of thousands of votive tablets containing the images of Bodhisattva and these are related to the Srivijaya period between the 7th to the 11th century AD.

Scientific research conducted on the pottery and votive tablets found in Gua Cha, Gua Peraling and Gua Chawas indicated that the raw material, namely clay which was used to produce the pottery and votive tablets did not originate from the areas around Ulu Kelantan (Ramli, 2008; Ramli *et al.*, 2011, 2014). This data indirectly proves that the Neolithic people in the inland areas did not produce pottery but instead became the user either to use the pottery as tools for cooking, storing food or as burial implements. The people producing the pottery were those who inhabited or settled in the coastal areas or land areas where they were more exposed to the outside world especially in the aspects of trade. The settlements of the communities that were close to this coastal area might be related to the artefact findings in Kampung Kubang Pak Amin and findings of pottery sherds in Sungai Sat. Survey that was conducted along 1 or 2 km of Sungai Sat has uncovered various pottery sherds especially cord-marked pottery.

Apart from the excavation carried out in the prehistoric site in Kelantan, there are also accidental findings that have been reported by the villagers. Among the sites is the one in Kampung Dusun Raja in Kuala Betis. Among the accidental findings are eleven polished stone adzes of which two of them are beaked-adzes, five stone tools that are believed to have been used as weights and the most important is the finding of tripod legs which are related to the tripod pottery bowl (Taha, 2007).



Fig. 6: Location of the neolithic site in Kampung Kubang Pak Amin

**Neolithic Age artefact discovery location:** The accidental findings of artefacts in the form of stone tools and pottery as well as ceramic sherds and coins of the 17 and 18th century AD were on the river bank of Sungai Kelantan close to Kampung Kubang Pak Amin (Fig. 6). The location of this site is at longitude 102°10'50.70" E and latitude 6°2'40.54"N. The site is situated on the river banks of the Sungai Kelantan and because of the relatively long dry season this year has resulted in a decrease in water levels and reveals a whole sandy area with artefacts dating back to Neolithic times until 18 or 19th century based on findings of China and Thailand porcelains and coins of tin. Generally Kubang Pak Amin village is located about 3 miles from the town of Pasir Mas. Travelling from Kota Baharu to the site takes about 30-40 min.

**Diversity of neolithic stone tools in Kampung Kubang Pak amin:** As a result of the out of context findings or accidental findings on the banks of Sungai Kelantan near Kampung Kubang Pak Amin, stone tools of diverse types and sizes were found. The stone adze found at this site is also quite small compared to the findings of stone adzes of other Neolithic sites in Malaysia. In general, stone adze, shouldered stone axe, tembeling knife and pestle have been found in this area. Many stone adzes and polished stone axes were found either at the Neolithic sites in the caves or in open sites. On the other hand, not many shouldered stone axes were found because they are associated with island or coastal Neolithic people. Most of these shouldered stone axes were found mostly in Guar Kepah, Seberang Prai. Tembeling knife is also one of the special stone tools based on its shape and has only been



Fig. 7: Rescue excavation on the river bank of Sungai Kelantan in Kampung Kubang Pak Amin

found in Sungai Tembeling, Pahang, Gua Madu in Gua Musang, Kelantan, Baling in Kedah and in Dengkil, Selangor. Most of the stone tools found on the river bank of Sungai Kelantan near Kampung Kubang Pak Amin are out of context data and were found accidentally during surface surveys. The excavations conducted around the river bank also failed to unearth any artefact that is related to the Neolithic culture of open areas (Fig. 7 and 8). Nevertheless, all the artefacts found originated from the surrounding areas because the stone tools' shape or morphology is still in their original condition. Hence, there is no issue that the artefacts could have drifted from other areas or from upstream which has uncovered many sites of the Neolithic Age.

The finding of the tembeling knife is not the first of such discovery in Kelantan. The first finding was in Gua





Fig. 8: Excavation pit on the river bank of Sungai Kelantan



Fig. 10: Polished stone adze



Fig. 9: Polished stone axe

Madu close to the town of Gua Musang (Tweedie, 1942, 1949, 1953; Taha, 1993). However, the finding of two pieces of stone tools in the form of tembeling knife in Kampung Kubang Pak Amin is the first for an open site of the Neolithic Age and this site is also near or close to the coastal area (Fig. 9 and 10). The site in Nyong, Sungai Tembeling has also uncovered more than one tool of tembeling knife and Nyong is also the site where this special tool was found for the first time in the Malay Peninsula which was in 1930 (Ivor, 1931). Findings in other sites as discussed previously are in Baling, Kedah and Jenderam Hilir or in Dengkil, Selangor (Bellwood, 2007). This tembeling knife finding has associations with the community's involvement in agricultural activities. This is because the function of this tool is more of a tool to cut, similar to the function of a knife.

It is believed that this tool was used for paddy harvesting work but research or experiment conducted by researchers from Centre for Global Archaeological Research, Universiti Sains Malaysia could not prove that the tool is suitable to be used for paddy harvesting work

(Ramli *et al.*, 2014). Three of the sites that uncovered the tembeling knife tool are open sites of Neolithic Age, namely in Nyong, Jenderam Hilir and Kampung Kubang Pak A min. Open sites show that there already existed permanent settlements and its principal activities were agriculture in addition to animal husbandry and other activities like fishing and hunting. Therefore, this tembeling knife is thought to be more suitable to be used for agricultural activities compared to the other Neolithic Age stone tools such as adze, chisel and polished stone axe. Analysis carried out by Taha (1989) on the physical aspect of the tembeling knife shows that this tool has different measurements. The tembeling knife found in Nyong and Gua Madu for example has a length of about 100 mm while the tembeling knife that was found in Baling has a measurement of only about 50 mm. The length of the tembeling knife found in Kampung Kubang Pak Amin is >100 mm and physically, the tembeling knife here is similar to the findings in Sungai Tembeling and Gua Madu. Is this a coincidence or did the community in this area have connection either in the form of trade relationship or kinship ties? This is because the site in Sungai Tembeling could be connected to the site in Ulu Kelantan and Gua Musang and then moving downstream until reaching Sungai Kelantan through the route known as the peninsula-route.

Another important discovery in Kampung Kubang Pak Amin is the finding of a piece of stone tool in the form of semi-circular shouldered axe that is associated with the pre-historic people who inhabited the coastal areas (Fig. 11). Undeniably, there are also discoveries of shouldered or necked axe in inland areas or cave sites such as in Gua Cha and Gua Madu but the shape of the axe is usually rectangular. Finding of necked stone axe that is associated with coastal communities has been discovered in the Guar Kepah Seberang Perai site, Pulau



Fig. 11: Stone adze



Fig. 12: Polished stone adze

Pinang (Callenfels, 1936) (Fig. 12). Indirectly, this data can relate the settlements of the Neolithic community in Kampung Kubang Pak Amin as located close to the coastal area. The discovery of necked stone axe and shouldered stone axe is also recorded in Kalumpang, Sulawesi but this site is located in the highlands.

#### **Discovery of tripod legs in Kampung Kubang Pak Amin:**

The accidental discovery of the tripod leg in Kampung Kubang Pak Amin indicates the importance of this site especially in the aspect of trade. So far, only one broken piece of the tripod leg has been found and most of the pottery found in this area is not the pottery produced during the Neolithic Age. Two sites which are really synonymous with the finding of this tripod leg are those in Ban Kao, Thailand and Jenderam Hilir, Selangor where hundreds of pieces of broken tripod legs have been found. Most of the previous scholars associate the production and discovery of pottery either in Gua Bukit Tengku Lembu and Gua Berhala with the archaeological site in Ban Kao that is also known as the

Ban Kao culture. Apart from the discovery in Jenderam, Gua Berhala in Kodiang has also uncovered tripod pottery bowls in relatively large quantities. In addition, discoveries of these tripod legs have also been reported in Gua Bintong, Gua Gergasi and Bukit Cangkul in Perlis and Gua Pasir and Gua Taufan in Bukit Kepelu, Kodiang, Kedah (Adi, 1983, 1987), Gua Baik in Perak (Callenfels and Noone, 1940) and Kampung Dusun Raja in Kelantan.

The Ban Kao site which had produced these tripod pottery bowls was given dating of  $3720 \pm 140$  BP (K-838) based on chronometric dating conducted by Sorensen and Hatting (1967). Radiocarbon dating on the charcoal found at depths of 7 m from the soil surface was given dating of  $3650 \pm 60$  BP (SUA-2401) which is dating that is almost similar to the ones obtained at the Ban Kao site (Heng, 1986). However, Leong Sau Heng was not satisfied with the data obtained and had sent 3 pottery samples in which one of them was a tripod leg, to Oxford University's Radiocarbon Accelerator Unit and the result showed that the dating for the tripod leg is  $3660 \pm 80$  (OXA-1932) where this data is close to the previous data. The dating of two cord-marked pottery sherds on the other hand is  $3010 \pm 70$  BP (OXA-1934) and  $3090 \pm 60$  BP (OXA-1933) (Heng, 1991). Chemical composition analysis of the tripod leg from Jenderam Hilir also indicated that the raw material which is local clay was used. This shows that the tripod pottery bowls in Jenderam Hilir were produced by the local people. The dating obtained indicated that the settlement in Jenderam Hilir was built at the same time as the settlement in Ban Kao. The settlement in Ban Kao only existed 70 years earlier than the settlement in Jenderam Hilir based on the available dating. Dating of the Neolithic sites has uncovered tripod pottery that is very important to be analysed as a reference for other sites which have uncovered similar artefacts. Tripod pottery production technology is said to have started in Ban Kao, Thailand and this site is said to be the centre of pottery production for the needs of the communities in inland areas. Nevertheless, the finding of tripod pottery in Jenderam Hilir has indicated that the open site in Jenderam Hilir had also produced tripod pottery but a little later compared to the site in Ban Kao, Thailand. Did the tripod leg fragments found in Kampung Kubang Pak Amin come from Ban Kao or Jenderam Hilir? This can only be proven by conducting chemical composition analysis of the tripod leg found in Kampung Kubang Pak Amin and then making comparisons with the data obtained from Jenderam Hilir and also Ban Kao. However, relatively, the site which unearthed this tripod pottery has already been in existence since 1600 BC (Fig. 11-19).



Fig. 13: Tranchet



Fig. 17: Tembeling knife



Fig. 14: Polished stone adze



Fig. 18: Necked Stone axe in guar kepah



Fig. 15: Semi-circular shouldered stone axe



Fig. 19: Tripod leg



Fig. 16: Tembeling knife

## CONCLUSION

The discovery of the site in Kampung Kubang Pak Amin has given some indications to the existence of settlements of Neolithic community in the area near to the coastal area. The discovery of the tembeling knife at this site also shows that there are relationship between the people of Kampung Kubang Pak Amin with the people in Nyong, Sungai Tembeling.

This is based on the size of the tembeling knife tool which is almost the same between the finding in Kampung Kubang Pak Amin and the site in Nyong as well as the



tembelingknife tool found in Gua Madu. The discovery of other artefacts in this site is also interesting in which among them are the finding of semi-circular shouldered stone axe that is also sometimes associated with coastal communities and the finding of tripod legs that were found in abundance in Jenderam Hilir and Gua Berhala in Kodiang. The out of context discovery in Kampung Kubang Pak Amin has enabled further research to be conducted in the nearby areas to gather data concerning the dating of the Neolithic Age in this area. The findings of pottery fragments on the river bank of Sungai Sat could be an indication of coastal community settlements in Kelantan that produced pottery. Based on the relative dating, the Neolithic site of Kampung Kubang Pak Amin is believed to have been inhabited by the Neolithic people between 3700-3000 BP.

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