

# Prehistoric Archeology in Baling, Kedah: A Review of Chronology, Cultural Evolution and Environment

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## ABSTRACT

Kedah is a state rich in historical records and this includes the existence of prehistoric communities in some areas such as in Baling which have done archaeological research and excavations. This research is conducted by researchers from within and outside the country using various approaches as examples of scientific analysis. Archaeological research in Kedah began by not on purpose to find various findings and information that led to the discovery of places related to prehistoric society. Especially in the Baling area, Kedah early research activities were started by H.D Collings in 1936 when he conducted a survey of the limestone caves found in Baling. The results of H.D Collings' initial research led to further studies conducted by local researchers in the Baling area. Such as, this paper will discuss every study that has been done in Baling starting with the initial study until the latest study. Through a review of the results of previous research, it can be seen that the results of different studies and even through this can also be identified a new scope for researchers who want to do further research in this area of Baling. Prehistoric studies in Baling, Kedah are still continued to this day based on data that have been recorded by previous researchers, as it is known that most of these studies continue to focus on the Baling area because this area is an area with high potential to be inhabited by prehistoric societies. This is also based on the geographical aspect, which is where the Baling area, surrounded by mountains and limestone caves as well as close to a large river, thus fulfilling the main characteristics of the prehistoric community dwelling area at that time.

**Keywords:** Prehistory, Archaeological Research, Baling, Habitat, Limestone Caves.

## 1. INTRODUCTION

Archaeological activities in Kedah have started since 150 years ago, involving researchers from within and outside the country. The results of each study activity have been able to identify several areas or sites that have potential in the existence of prehistoric communities in Kedah. Through this study, various types of artifacts such as stone tools, pottery, human skeletons and others were also found, this clearly proves that there is a prehistoric society in Kedah. H.D. Collings was one of the earliest researchers to enter Kedah by conducting observations and studies of prehistoric societies based on specific areas. The results obtained have made this study continuous, followed by other researchers such as Adi Taha (1983/1987), G.W Earl (1861) and others. Through H.D. Collings's earliest

studies were directed at the Baling area including the Dust Cave, and the Bat Cave where he had found several artifacts such as stone axes, axes, and stone pickaxes formulated for use by Hoabinhian society. Later, several other areas were studied such as in the Kodiang area (Adi Taha 1983-1987) covering Gua Berhala, Gua Pasir and Gua Taufan, each located in Bukit Kepelu Kodiang Kedah.

As a result of previous studies conducted by previous researchers, it can be concluded that Kedah is a residential area for early prehistoric communities including Hoabinhian and Neolithic communities and this does not include the category of protohistoric that exists after prehistory. This study is in line with a study conducted by Professor WG Solhiem (1961) who has stated that the level of archaeological development in Malaysia can be divided into 4 stages or phases, phase 1

of 1840-1910, phase 2 of 1910- 1957, phase 3 of 1958-1970, phase 4 of 1970- present. This is clear when there has been a migration of prehistoric communities, especially involving the Hoabinhian community who first settled in coastal areas and then moved to tropical forests due to climate change and tropical forests were made new areas due to dimmer weather factors [1]. Moreover, this community prefers the cave area as a shelter especially from the threat of floods, where the position of the cave is in a high position and has a good level of lighting [2]. Because of this, the author has previously stated that these areas in Kedah were made the main choice of prehistoric society to live.

## 2. GEOLOGY & GEOMOPHORLOGY OF KEDAH: BALING AS A RESIDENTIAL AREA OF A PREHISTORIC COMMUNITY

Kedah is a State located in the North of Peninsular Malaysia, with its landform rich in natural products. The terrain is quite flat and the large land area makes it a State famous for its agricultural products such as paddy. In addition, its location in the Northern zone of Peninsular Malaysia makes it an area close to Perlis and Thailand as well as it also borders Perak in the South and Penang to the southwest. In the State of Kedah, there are 14 Districts and one of them is Baling District, which borders Kulim District on the South, Kuala Muda District on the West. The Baling area also borders Thailand in the Northeast and is also close to the State of Perak which is located in the Southeast. It is common knowledge that Baling is an area categorized as a major village area in Kedah and due to this also its geographical factors are rich in nature such as forests, mountains, and have large rivers such as Sungai Muda which is the main river for Baling District in addition to being a divider between Kedah-Penang and followed by Sungai Ketil which is the largest basin in Baling.

From a geographical point of view, it is not surprising that Baling was an area that was the main choice for prehistoric society in the past. If we look back at the characteristics of prehistoric society is that they use open areas and make the cave site as an area to live and carry out their daily activities in addition to being protected from the threat of floods and attacks of wild animals where the cave is in a high position and has good lighting levels [2]. In addition, their lives are very close to the river area which they use as a source of food and drink in addition, the gravel area to get raw materials and make stone tools. When looking at these features, Baling is definitely an area that is complete with the need to be used as a residential area by the prehistoric community in the past.



**Figure 1** Topology map Baling town / (Source: Muhammad Afiq 2015).

Kedah also has some unique privileges that have indirectly produced the uniqueness of the historical development that it went through and these privileges also include the Baling District. So it can be said that Baling is an area that stores various past historical data as well as making Kedah a State rich in history. From a prehistoric point of view, Peninsular Malaysia is described as a bridge or track used by humans in the process of migration from North to South and then to the islands of Southeast Asia and the Pacific. In addition, about 14000 years ago, covering the late Pleistocene, there was a change in the earth's climate, resulting in humans living in coastal areas moving to the darker interior as tropical forests began to multiply [2]. From this statement it can be seen that prehistoric societies have previously moved to forests or mountains to continue their lives more comfortably, perhaps because of this there are data or records on the characteristics of the prehistoric society itself. However, there are also a few who choose open coastal areas as residential areas such as Kepah Cave [3] and Telok Auson [4].

Prehistoric archeological research in Kedah involves open areas and in limestone caves. These limestone caves are also a place of residence or stopover for prehistoric people. HD Collings was the first person to reveal the existence of Prehistoric sites in the State of Kedah by conducting a study on Mount Baling. Two caves have been excavated, namely the Dust Cave and the Bat Cave [5]. The material culture found in this cave consists of Hoabinhian stone axes, Neolithic stone axes and pickaxes, grindstones, fist stones and earthenware. Through this research, it is common knowledge that in Kedah, prehistoric life began with the Hoabinhian community about 5000 years ago [6]. In addition to the residential areas inhabited by these Hoabinhian

communities, their characteristic features can also be identified through the type of artifacts that characterize Sumatralith and pebbles [7].

From the geomorphological point of view of Gunung Baling, Gunung Pulai and Gunung Dalam Wang, they are grouped as Baling or Baling Group. Where the rocks are composed of Quartzite, Greek Siltstone, Bendang Riag Formation and Lawin Tuff [8]. While the rocks consist of shale, arenite, calcareous shale and limestone [9]. This group can also be divided into 2 parts, namely in the East Kedah area which covers the area of Pekan Baling and in the North Perak area which covers part of the Grik and Kroh areas [10]. This group of rocks is also classified into argillaceous, arenaceous shale, spotted shale, phyllite, metamorphosed siliceous shale, siltstone, chert, quartz-biotite hornfels, calcareous quartzite, ironstone, wollastonite, limestone, hornfels, plagioclase, clinopyroxene, epidote, hornblende, biotite, microcline, zoisite and sphene.

Around the Baling area, Mount Pulai is the highest peak with 1968 feet [10]. Most of the rocks around Baling consist of limestone of calc-silicate facies which are hard, coarse, layered, greenish, grayish, whitish, and yellowish, the rocks consist of silt-grade hornfels, quartz, calcite, garnet, wollastonite, plagioclase, clinozoisite, epidote, hornblende, biotite, tremolite, microcline, zoisite, and sphene [10].

The name Baling Group is taken from Pekan Baling in Kedah, where the sequence of rocks from this group is scattered around this area. In the early stages, this sequence was known as the Baling Formation, but was upgraded to the Baling Group. The Baling group is scattered to the east of the Mahang Formation and the Semanggol Formation. Rocks from this group can be found around Baling, Kedah, and also around Grik, Perak. The Baling Group and the Mahang Formation are equivalent in terms of lithology and age, but both are separated by granite bodies.

The Baling Formation consists of arenitic, calcareous and argillite sedimentary rocks that have been metamorphic. Most of these rocks are carbonaceous. For the Baling area, where this formation was first introduced by Burton (1970), the Baling Formation is divided into 4 facies namely arenite facies, limestone facies, argillite facies, calc-silicate facies.

In the Baling Formation, there are several layers or lenses of limestone, and are known as limestone facies. The thickness of this facies is from a few mm to over 1600m. Limestone is mostly white and thickly layered or massive. There are also those that are dark in color due to the content of carbonaceous material, and close to the argillite facies. This limestone has been metamorphosed and recrystallized. This recrystallization has destroyed most of the sedimentary structures and remnants of existing organic material.

### **3. MUDA RIVER BASIN & MERBOK RIVER BASIN**

The Muda River Basin located in the State of Kedah is a river catchment area with 4,219 km<sup>2</sup>, which is the longest river in Kedah which is 178 km long. The speed of the Muda River Basin flow starts from the waterfall that starts from the mountainous area of the northern part of Kedah. The flowing river continues to flow into the Selat of Melaka through several districts such as Sik, Baling and Kulim. The Muda River Basin is directly connected to major rivers such as Ketil River, Lahar Endin River, Tembus River, Sadim River, Chepir River, Teliang River and Sok River. This river basin is also a boundary between Kedah and Penang. The Muda River Basin became the heart of the settlement pattern of the community from prehistoric times to the Protohistoric Period. In fact, there are settlements that remain to this day.

The study of Muda River in terms of history began to emerge when several important artifacts and building structures were found between the southern bank of the Merbok River Basin and the northern bank of the Muda River Basin. These two basins have a tributary, Terus River, which connects the two Merbok River Basin and the Muda River Basin. Archaeological research over the years in the area has uncovered several important artifacts as well as structural remains.

Colonel James Low for the first time in 1848 to 1849 was also a British administrator in the Straits Settlements who had conducted reconnaissance in the area around Lembah Bujang including the Muda River and Merbok River Basins. Among the artifacts found by Low include the Cherok Tokun Buddhist Inscription, the Buddhagupta inscription and also the Bukit Meriam inscription. The Cherok Tokun inscription was found in Bukit Mertajam while the Bukit Meriam inscription was found in the middle of ancient bricks near Bukit Meriam towards the west of Terus River [12].

### **4. PREHISTORIC STUDIES IN BALING, KEDAH**

H.D Collings in 1935 had conducted an excavation in the Dust Cave located on Mount Baling [5]. He has also visited several other caves such as China Cave, Parit Cave, Bat Cave, Idol Cave, Jarak Cave and Pulai Cave. However, he only excavated in the Dust Cave and Bat Cave because the cave area is still not disturbed by human activities. This mountain is a limestone formation that borders between Hulu Perak and Thailand. Dust Cave is located 70-80-feet high above sea level and measures 22x50 square feet. Excavations in the Dust Cave he managed to find crushed stone tools, Hoabinhian stone axes, grindstones, paving stones, hematite, brodiaea costula pottery fragments

decorated with cord marked / rope marks and Neolithic stone axes.

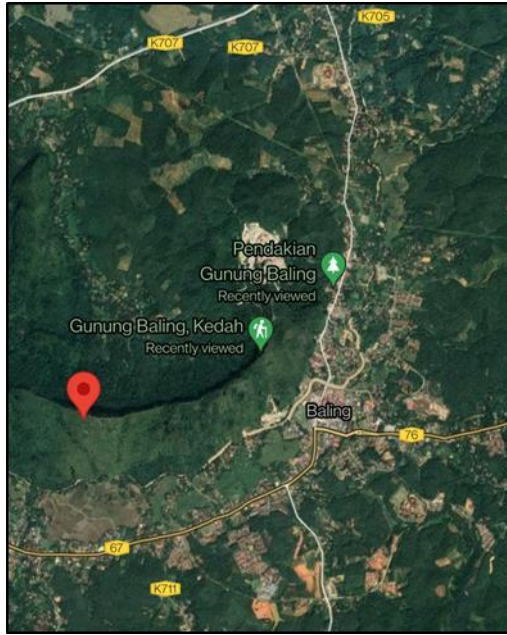
The results of the study found that the raw material used by the community here is obtained from Ketil River because its location is relatively close to the caves around the area and there is also hematite residue on the surface of the river rock used as crushed stone [5].

Collings thinks that the site of the Dust cave was once a Neolithic settlement site. During excavations in the Bat Cave not much information was obtained except for artifacts discovered accidentally by Chinese miners whose findings consisted of paleolithic stone tools, stone axes, bark cloth beater, broatia costula, animal bones and pottery fragments decorated with cord marked.

**Table 1.** Information on prehistoric studies and research in Baling, Kedah

Bil.	Researcher	Date / Years	Area	Findings / research results
1-	HD Collings	April 1935 1936 1936	Debu Cave- Baling Mount  Bat Cave- Baling Mount  Pulai Cave	<i>Crumbs, stone axes, whetstones, andes stone, haematite, food scraps, pottery fragments (rope marks)</i>  <i>paleolite stone tools, stone axes, bark beaters, food scraps, animal bones, pottery fragments (rope marks)</i>  <i>Crumbs, paleolithic stones, earthenware fragments (rope marks)</i>
2-	Zuraina Majid / Adi Taha	1991 1999	-	Pentarikan masyarakat Hoabinh di Kedah
3-	Adi Taha	1999	-	Dates of the Hoabinh community in Kedah
4-	Nik Hassan Shuhaimi	2006	-	Dates of Neolithic existence in Kedah
5-	Jabatan Warisan Negara (Department of National Heritage)	March 2012	Exploration at Pulai Mount, Baling:- i)Kelambu Cave ii)Tembus Cave 1&2 iii)Akar Cave iv)Kecil Cave	<i>*) Pebble tools of snail shells and food scraps</i> <i>*) Stone tools (river pebbles) and snail shells of the brotia costula type fragments of earthenware, and food scraps.</i> <i>*) Fragments of earthenware, stone tools, and food scraps</i> <i>*) Findings of earthenware, stone tools, stone pottery fragments, and food scraps</i> <i>*) Fragments of pottery, stone tools, and food scraps</i>
6-	Dr Zuliskandar Ramli (ATMA, UKM)	2015	Survey at :- i)Kelambu Cave ii)Tembus Cave iii)Layang Cave  Excavation at Tok Sik Cave and Baling Cave	<i>*) fragments of pottery, and pebbles</i> <i>*) sumatralith stone tools, and cutting tools made of pebble</i> <i>*) 167 earthenware fragments, 21 pebble tools and food scraps such as Brotia Costula snail shells in large quantities</i> <i>*) pottery fragments &amp; bone fragments</i>





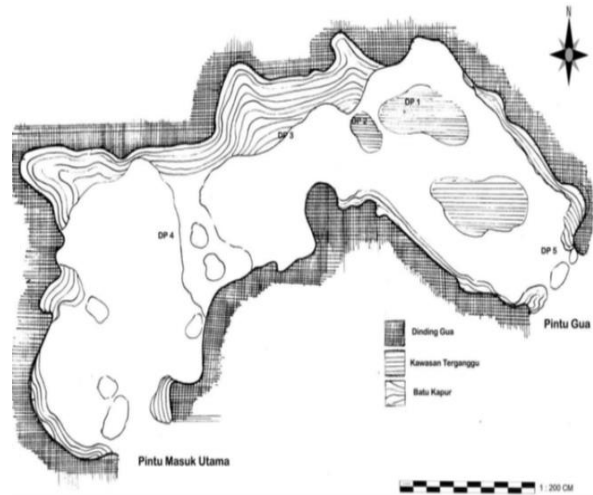
**Figure 2** The location of Mount Baling and Mount Pulai, Baling (Source: Personal collection).

#### 4.1. Excavations at Tok Sik Cave and Baling Cave

Further research and excavation in Baling was conducted by Muhammad Afiq a student of ATMA UKM led by Associate Prof Dr Zuliskandar Ramli. This excavation was carried out as a result of a survey that has been conducted based on potential areas, among these areas are Tok Sik Cave and Baling Cave.

In Gua Tok Sik, an excavation study was conducted for 3 weeks involving a team of researchers and Master's students from ATMA UKM. From the results of writing this article about this cave, among the information obtained is the position and structure of this Tok Sik Cave, and the results of the findings that have been found based on the duration of the excavation.

This topographic reading of the Tok Sik Cave site recorded readings in the dam of longitude 05.66424 North and latitude 100.89847 East. This cave is a cave located at the foot of Mount Baling and only 4 meters from the Kuala Ketil River. The journey to enter this cave, need to climb as high as 2 meters because the position of the cave door is quite high from the ground surface. The conditions in the wide and large caves are suitable as a temporary settlement location or a stopover for prehistoric communities [13]. This cave has two doors, the first is the entrance and the second door is at the end of the cave which is quite high from the ground surface. From what is recorded by Afiq (2016) this second door is not suitable to be used as an entrance but as a vent and a source of lighting that enters the cave.



**Figure 3** Floor plan of Tok Sik Cave (Source: Muhammad Afiq 2017).



**Figure 4** The situation in Tok Sik Cave (Source: Muhammad Afiq 2015).

Excavations have been carried out in this cave area as a result of research which said that some areas in this part of the cave are still undisturbed and still in good condition. As a result of the excavations that have been carried out, 167 fragments of earthenware, 21 pebble tools and food waste such as brotia costula snail shells have been found in large numbers. These artifacts are mostly found in the middle of the cave in an area that is not disturbed by bat droppings search activities.

Pottery fragments were also found and the pottery fragments were mostly ground brown, reddish brown and dark brown. This fragment of pottery is part of the body of the bowl and pitcher [13]. In addition, there are burning effects on the cave ceiling. This shows that the people living in this cave cooked food based on the discovery of pottery fragments that had a burning effect on the body part.



**Figure 5** Findings of stone tools and snail shells of the brotia costula type in Tok Sik Cave (Source: Muhammad Afiq 2017).

In Baling Cave, excavations were carried out after the end of the excavation study in Tok Sik Cave. The excavation in Baling Cave was conducted for 8 days. The excavation this time was conducted by 10 people consisting of supervisors, research assistants, graduate students and labor.

Based on Afiq's report (2016 & 2017) Baling Cave is the easiest cave to access because the location of this cave is close to residential areas and even has a road to this cave. The distance of this cave from Sungai Ketil is also not so far because it is only 100 meters from the river bank. However, it has been reported by this research team that almost the entire cave has been destroyed due to the activity of taking bat droppings and used as a garbage incinerator by the local community. The topographic readings for the Baling Cave site recorded readings in the dam of longitude 05.67784 North and latitude 100.91356 East. Based on the observations that have been made of the effects of the original deposits of the cave, the floor of the cave has collapsed as high as 2 meters due to the activity of taking bat droppings. Through this excavation, a total of 3 plots were opened and labeled as plot A, plot B, and plot C. Plot A was opened with an area of 2x2 meters, the surface position of this plot is -20 from the datum line. There were 2 stone tools found in spit 4, 2 more stone tools and snail shells found in spit 6, 2 more stone tools found in spit 9, 1 stone tool found in spit 10 and 11, 2 stone tools found in spit 12, and this compartment was stopped for excavation work at a spit depth of 20.

For the next, trench B is opened between to the south wall of trench A with an area of 1 x 1 meter with a datum line -20 and there are only stone tools found in spit 2. As for ecofact, there are many brotia costula finds on the surface of trench B until spit depth 3.

Finally, trench C is opened with an area of 1 x 1 meter. There were 3 stone tools in spit 2, 2 stone tools in spit 3 with bone fragments, 1 stone tool and bone fragments in spit 4, and 1 stone tool in spit 5. Based on the findings, it is stated that the condition of the cave has good lighting, so it is suitable to be used as a seasonal residential site or used temporarily by the

Prehistoric community living in the range of Mount Baling-Pulai [13] & [14].



**Figure 6** Findings of stone tools and snail shells of the brotia costula type in Baling Cave (Source: Muhammad Afiq 2017).

## 5. CONCLUSION

In conclusion, the preliminary studies involving prehistory in Kedah began about 150 years ago by HD Collings who first started the observation and then followed by excavation activities based on potential areas. In addition, the results of the data obtained are generally prehistoric in Kedah starting with the Hoabinhian / Mesolithic period followed by the Neolithic Age. If viewed through previous studies as a whole, this study is more focused on the Baling area which includes Mount Baling, Mount Pulai and Mount Wang Kelian. However, most of the existing areas in Baling have mostly suffered damage or destruction of cultural layers as a result of human activities, other than half of them have been turned into agricultural areas. This causes some losses involving historical data that may not be known yet, it is possible that these data if obtained to some extent can change the existing data, especially prehistoric dates in Kedah. In addition, there are not many studies, especially further studies in other areas as noted by some previous researchers such as in Kodiang Adi Taha (1983-1987) which involved several caves in Bukit Kepelu. If a study can be conducted involving this area, based on the available records, new data or findings can be recorded as well as additional data on prehistory in Kedah.

## AUTHORS' CONTRIBUTIONS

All authors conceived and designed the study. Zuliskandar Ramli and Mohd Fauzan Zuraidi conducted the experiment, analyzed the data and wrote the paper. All authors contributed to manuscript revisions. All authors approved the final versions of the manuscript and agree to be held accountable for the content therein.

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