

ARCHAEOLOGICAL HERITAGE OF PREHISTORIC CAVES IN BA THUOC DISTRICT, THANH HOA PROVINCE: PRESERVATION AND PROMOTION

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Article history

Received: October 17th, 2021

Received in revised form (1st): December 1st, 2021 | Received in revised form (2nd): December 28th, 2021

Accepted: December 30th, 2021

Available online: August 10th, 2022

Abstract

Ba Thuoc is a mountainous district in western Thanh Hoa Province, where more than 20 archaeological sites have been discovered. One of the outstanding features here is the presence of Middle Pleistocene fauna in Lang Trang cave, including fossils of Gigantopithecus blacki, a giant ape. The appearance of early modern human fossils in the Late Pleistocene proves that Vietnam was the site of the earliest modern human evolution in Southeast Asia. In Ba Thuoc district, human communities were in continuous residence from 30,000 to 7,000 years BP and developed the Dieu stone craft industry. This industry merged with the Hoabinhian industry in the development process, creating a cultural nuance for the land of Ba Thuoc. By 7,000 years BP, the boundary between the two industries was virtually nonexistent. The prehistoric inhabitants here contributed to the formation of Middle Neolithic cultures in North Central Vietnam. In addition, the caves in Ba Thuoc were also places for the mountain-dwelling inhabitants of the Dong Son culture to visit and bury their dead in the centuries before and after the beginning of the common era. In this study, we systematized the documents on monuments and artifacts, and evaluated the outstanding cultural heritage of the prehistoric caves in Ba Thuoc district, which need to be preserved and promoted in the present day.

Keywords: Archeology; Ba Thuoc district; Dieu industry; Hoa Binh culture; *Homo sapiens*; Prehistory.

DOI: [http://dx.doi.org/10.37569/DalatUniversity.12.4.995\(2022\)](http://dx.doi.org/10.37569/DalatUniversity.12.4.995(2022))

Article type: (peer-reviewed) Full-length research article

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1. INTRODUCTION

Ba Thuoc is one of the mountainous districts in western Thanh Hoa Province that faces many economic difficulties. The area of Ba Thuoc district is 777.2 km², the population is 105,000, and the population density is 124/km² as of 2018 (“Bá Thuốc”, 2021). Ba Thuoc district is the main living area of three ethnic groups: the Muong, Thai, and Vietnamese. The Muong people make up the majority and are the earliest residents of this land.

Documents show that the Ba Thuoc district is an ancient land occupied at an early date by prehistoric people. The prehistoric inhabitants here gradually adapted to the fluctuations of the natural environment, forming outstanding traditional, cultural, and historical values from prehistoric to historical times. Field research has noted that the caves in this area contain over 20 unique prehistoric archaeological monuments. These are a significant source of materials to study the prehistoric culture of the inhabitants of the limestone mountains (karst) in the western part of Thanh Hoa Province. Archaeological records of prehistoric caves are auxiliary data sources for compiling the prehistory and geography of the region and displaying traditional houses in the Ba Thuoc district, which is a precious resource to develop cultural tourism and local scenic spots.

This paper reviews the prehistoric archaeological monuments in the Ba Thuoc district in chronological order, determines the outstanding cultural value of the monuments and artifacts, and proposes some initiatives to preserve and promote the cultural heritage of the Ba Thuoc district in the present day.

2. THE ARCHAEOLOGICAL MONUMENTS IN PREHISTORIC CAVES

2.1. Ba Thuoc – human fossil evidence

In 1984, on an archaeological investigation in the western part of Thanh Hoa Province, archaeologists discovered a group of paleontological caves in Ba Thuoc district: Lang Trang 1, Lang Trang 2, Lang Trang 3, and Lang Trang 4 in Lam Sa commune, Cuon cave in Tan Lap commune, and Coc cave (Buu Dien) in Thiet Ong commune (Lê, 1987).

The paleontological caves in Lang Trang are located next to National Highway 15A and near the town of Canh Nang in Ba Thuoc district. The Institute of Archeology conducted the first excavation in cooperation with the University of Iowa (USA) in 1989 (de Vos & Vu, 1993) and a second excavation in collaboration with the National Museum of Natural History Leiden (Netherlands) in 1993 (Vu et al., 1996). Lang Trang monument was classified as a provincial cultural heritage site in 2013. The results of the two excavations were published in 2004 (Nguyễn & Vũ, 2004), adding new material to the map of paleontology and human fossils in Vietnam (Figure 1).

The results of excavations in the caves at Lang Trang have found fossils of upright humans (*Homo cf. erectus*), modern humans (*Homo sapiens*), giant apes (*Gigantopithecus*), and fossils of Middle Pleistocene fauna, such as monkeys (*Macaca*

sp.), gibbons (*Hylobates sp.*), orangutans (*Pongo pygmaeus sp.*), langurs (*Prebytis sp.*), porcupines (*Hystix subristaba*), Asiatic brush-tailed porcupines (*Atherurus macrorus*), spalacidae (*Rhizomys sp.*), rats (*Rattus sabanus*), bats (*Chiroptera gen. et sp. indect.*), land snails (*Cycloporus*), jackals (*Cuon sp.*), wolves (*Canis sp.*), Asian black bears (*Ursus thibetanus*), sun bears (*Ursus malayanus*), large Indian civets (*Viverra cf. zibetha*), masked palm civets (*Paguma larvata*), Asian palm civets (*Paradoxorus hermaphdicus*), greater hog badgers (*Arctonyx collaris*), leopards (*Panthera pardus Linnaeus*), tigers (*Panthera tigris Linnaeus*), wild leopards (*Felis temmincki*), elephants (*Palaeiloxodon cf. namadicus*), saber-toothed elephants (*Stegodon orientalis*), Malayan tapirs (*Tapirus indicus sp.*), giant tapirs (*Megatapirus augustus*), rhinoceros (*Rhinoceros sinensis*), wild boars (*Sus scrofa*), sambar deer (*Rusa unicolor Kerr*), muntjacs (*Muntiacus sp.*), deer (*Cervus sp.*), mountain goats (*Capricornis sumatraensis*), chevrotains (*Tragulus javanicus*), wild water buffalos (*Bobalus bubalus Linnaeus*), gaurs (*Bibos cf. gaurus*), and bulls (*Bos sp.*) (Nguyễn & Vũ, 2004).

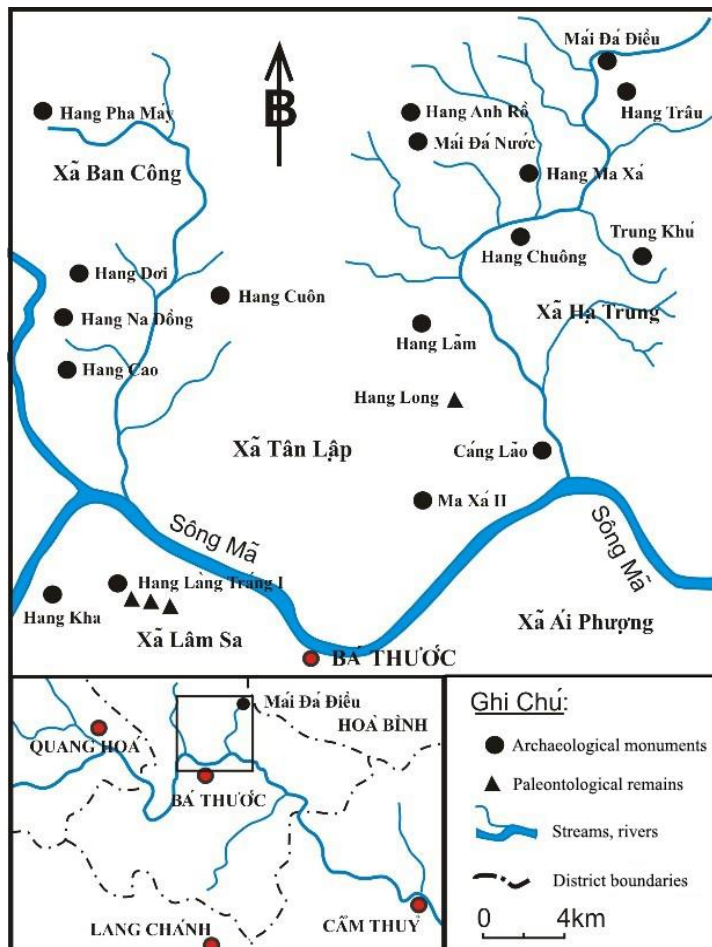


Figure 1. Archaeological and paleontological monuments in Ba Thuoc district

Source: T. T. Phan (personal communication, 2019).

The animal complex in Lang Trang caves consists of orangutans (*Pongo*), giant pandas (*Ailurroponda*), and saber-toothed elephants (*Stegodon*). This complex is similar

to the fauna of the Pleistocene period in South China and representative of the fauna of Southeast Asia. Among the fauna, most notable are the fossils of giant apes (*Gigantopithecus blacki*) and modern humans (*Homo sapiens*).

The giant ape in Lang Trang cave was found in sediment dated by the electron spin resonance method at the University of Cambridge with an age of 470,000 years BP (BP – Before Present) with a 10% standard error (Ciochon et al., 1990). The giant ape (*Gigantopithecus blacki*) often coexisted with upright humans (*Homo erectus*). The *Gigantopithecus blacki* fossils date from a few million years to a few tens of thousands of years ago. They are distributed in the limestone cave systems in the districts of Liuzhou, Daxin, and Wuming (Guangxi Province, China), in Northern India, and in the Lang Trang cave of Vietnam.

Gigantopithecus is the largest hominid, standing up to 3 meters tall and weighing about 540 kg. *Gigantopithecus* walked on four legs and ate plants, mainly bamboo and seasonal fruit. This animal displayed sexual dimorphism: adult females were only half the weight of males. From the correlation between the giant ape's teeth and its body size, it is suggested that the adult male is likely to have a height of 1.8 meters and a weight of 180 to 300 kg (Figure 2). Recent studies show that *Gigantopithecus* is closely related to orangutans (*Pongo sp.*) (“Gigantopithecus”, 2021).



Figure 2. *Gigantopithecus blacki*

Source: “Gigantopithecus” (2021).

Some fossilized teeth of modern humans (*Homo sapiens*) from Lang Trang were found in sediments containing fauna similar to those found in Padang caves (Sumatra, Indonesia) and Punung cave (Java, Indonesia), which are dated to 70,000–80,000 years BP by aspartic acid racemization (Vu et al., 1996). At this time, the sea level in Southeast Asia was 120 meters lower than today, and the islands off the coast of Southeast Asia

were still connected to the mainland. Therefore, the animals could migrate throughout the region, allowing the same species to exist in the mainland and the present-day islands of Southeast Asia.

Nine fossilized modern human teeth from different individuals were obtained during excavations in Lang Trang caves (Nguyễn, 2017) (Figure 3). The age of the fossilized teeth is determined at about 50,000 years BP (Lê & Nguyễn, 1989) or 40,000 years BP (Nguyen, 1992). We believe that human and animal fossils found in Lang Trang caves (Thanh Hoa) are quite similar to fossils of human teeth in Tham Om cave (Nghe An) and Ma Uoi cave (Hoa Binh). These sites form a triangle that contains the area inhabited by the earliest modern humans in northern Vietnam.

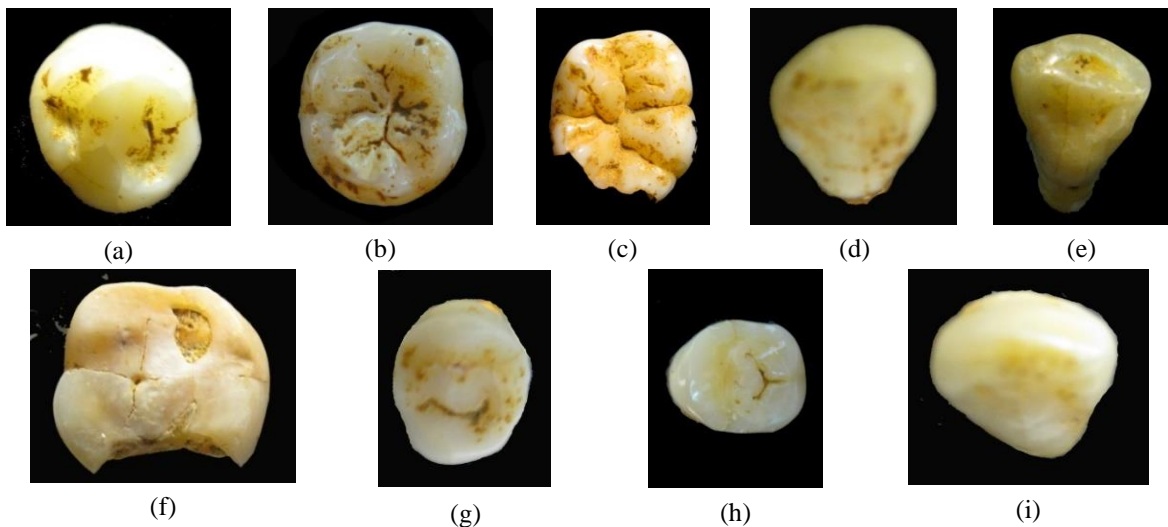


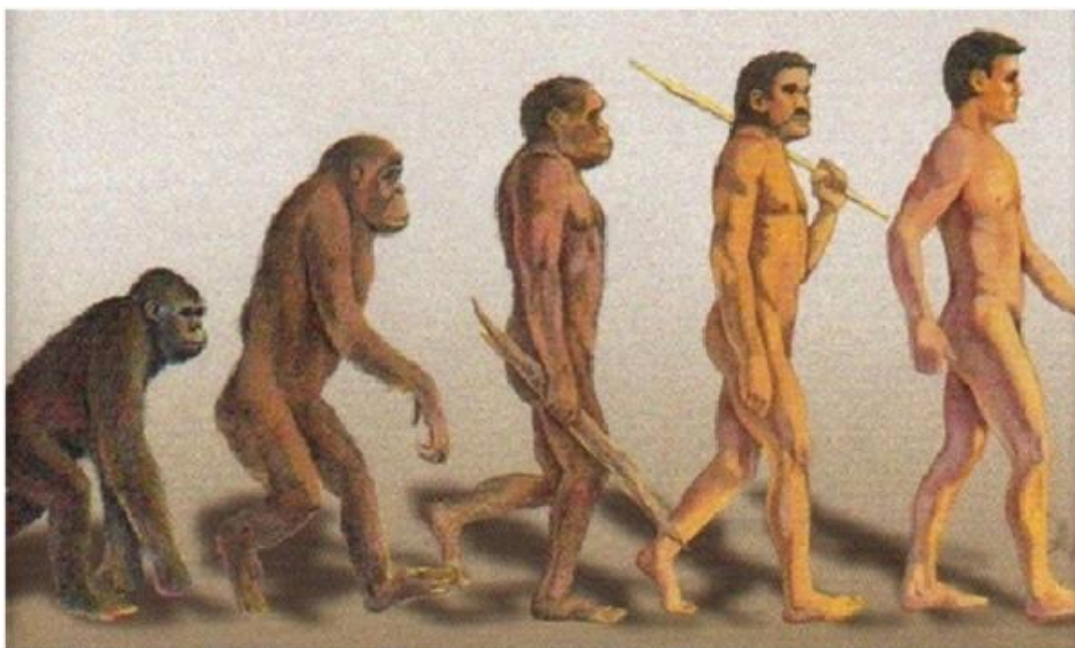
Figure 3. Fossilized occlusal surfaces on *Homo sapiens* teeth from Lang Trang caves

Source: L. C. Nguyễn (personal communication, 2019).

There are not many modern human fossils in South and Southeast Asia with the available documents. The modern human skulls from Niah 1 cave, Sarawak (Malaysia), date to 40,000 years BP (Shen et al., 2007) and the skulls from Fa Hein cave (Sri Lanka) date to 36,000 years BP (Kennedy, 1999). In 2015, the skull and lower jaw of modern humans were discovered in the excavation of Tam Pa Ling cave, Hua Pan Province (Laos). The remains were found in stratigraphy ranging between 63,000 and 44,000 years BP (Demeter et al., 2015). In 2018, American anthropologist Jeffrey H. Schwartz and colleagues at the Vietnam Institute of Archeology re-examined the collection of human teeth in the ancient Tham Om cave. They determined that these teeth are similar to those of early *Homo sapiens* found in Huanglong and Fuyan caves in South China (Schwartz et al., 2019). The *Homo sapiens* teeth fossils from Huanglong cave date between 100,000 and 70,000 years BP, and those from Fuyan cave date between 120,000 and 80,000 years BP (Martín-Torres et al., 2017). In addition, in Southeast Asia, other *Homo sapiens* remains were also discovered in Tabon cave (Philippines) dating to 38,000 years BP (Fox, 1970). Those in Niah cave (Indonesia) date to 41,000 years BP (Harrisson, 1967). And those in Callao cave, Luzon Island (Philippines) date to 67,000 BP (Mijares et al., 2010).

The *Homo sapiens* fossils found in the mountainous area of northern Vietnam: Hum cave (Yen Bai), Ma Ui cave (Hoa Binh), Lang Trang cave (Thanh Hoa), Tham Om cave, and Tam Pa Ling cave (Laos) are evidence indicating that this area witnessed the earliest evolution of modern humans in Southeast Asia (Figure 4).

Paleolithic caves with fossils of humans and animals in the Ba Thuoc district still have huge sedimentary blocks clinging to the cave walls. These caves are rich in animal species and hold a high density of fossils. Documents collected are valuable for research on human evolution, especially about the most critical period – the evolution of modern humans. These caves are located next to major roads and are not far from the center of the town of Canh Nang (Ba Thuoc district), which is very convenient for traveling. Protecting and showcasing the ancient paleontological heritage for cultural tourism in these caves is necessary and perfectly feasible.



| | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|----------------------------------|
| <i>Australopithecus</i> | <i>Homo habilis</i> | <i>Homo erectus</i> | <i>Homo sapiens</i> | <i>Homo sapiens sapiens</i> |
| 4.4-1.5 million years BP | 2.5-1.6 million years BP | 1.8-200 thousand years BP | 200-50 thousand years BP | From 50,000 years to the present |

Figure 4. Illustration of human evolution from hominids to modern humans

Source: Phạm (1998).

2.2. Ba Thuoc – the convergence of cultural monuments of prehistoric inhabitants

As mentioned, a system of 18 caves containing cultural remains of stone age people in the Ba Thuoc area dating from 30,000 to 4,000 BP was discovered in 1984 (Nguyễn & Đặng, 1984). Caves with traces of prehistoric human habitation have been excavated and systematically studied: Mai da Dieu cave, Trau cave, Cuon cave, Anh Ro cave, Mai da Nuoc cave, Ma Xa I cave, Chuong cave, Thung Khu cave, Lam cave, Cang Lao cave (Ha Trung commune), Pha May cave, Bat cave, Na Dong cave, Cao cave (Ban

Cong commune), Cuon cave, Ma Xa II cave (Tan Lap commune), Kha cave, and Lang Trang 4 cave (Lam Sa commune) (Figure 1). Mai da Dieu was ranked as a provincial cultural heritage site in 2005.

Prehistoric communities lived in caves or rock shelters, distributed in clusters in the karst valley in Ha Trung, Tan Lap, and Ban Cong communes. Some of these caves are distributed at an altitude of over 20 meters, such as Thung Khu cave (300 meters), Lam cave (200 meters), Bat cave (80 meters), and Kha cave (50 meters). The vast majority of the other caves are 5 to 20 meters above the valley surface. The caves have easy access and are wide and airy inside. Indeed, these are ideal places for long-term residence by prehistoric inhabitants.

Among these monuments, the Mai da Dieu cave was excavated four times by the Institute of Archeology in 1986, 1988, 1993, and 1996. The excavations in 1988 and 1993 were conducted in cooperation between Vietnam and Bulgaria. The Mai da Dieu cave has a stratigraphic thickness of 5.30 meters with many remains and artifacts, reflecting the different cultural stages of the prehistoric inhabitants from 30,000 to 7,000 years BP (Nguyễn, 1999; Nguyễn et al., 1990; Nguyễn, 1992). Based on the excavation materials, the habitation can be divided into three stages of development, as follows:

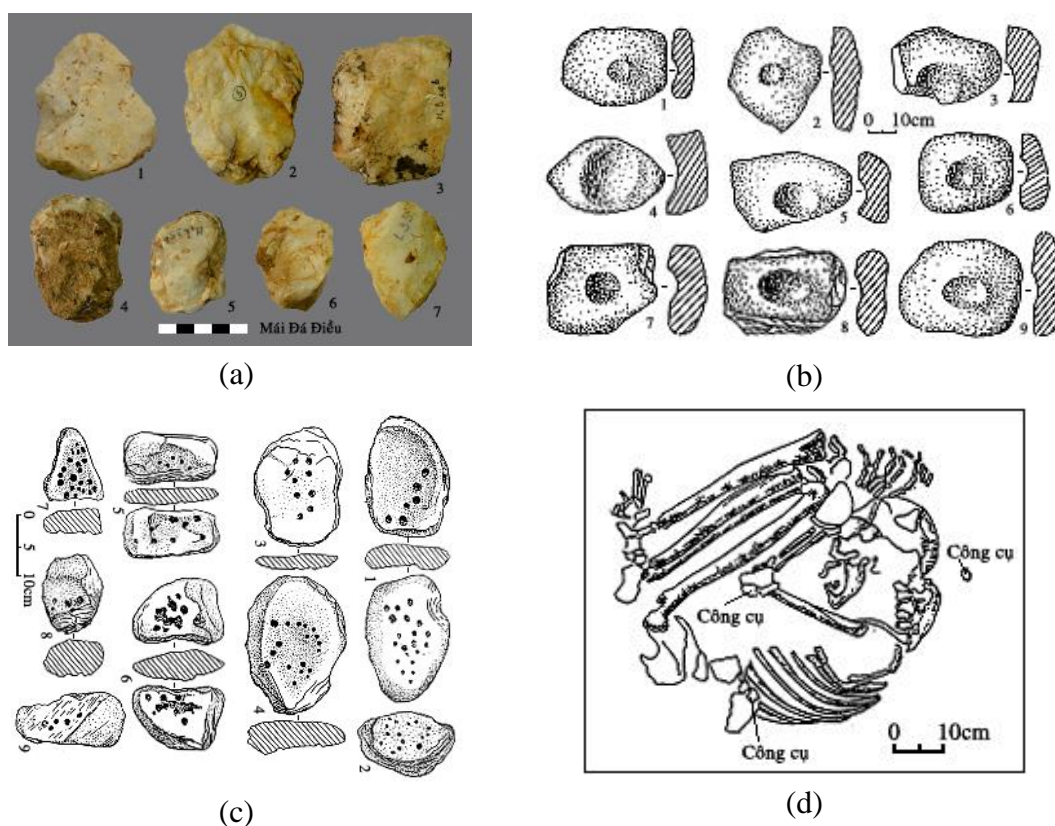


Figure 5. Stone tools and a tomb at Mai da Dieu

Note: a) Quartz stone tools; b) Grinding tables; c) Stones with concave marks; d) Human fossil in a fetal position.

Source: Nguyễn (2001).

The earliest period dates from 30,000 to 24,000 years BP. The cultural remains in this stage include fossils of large animals. The exploitation of mollusks in rivers and streams has not yet appeared. The bottom sediment in Mai da Dieu is slightly lateritic, indicating a cold dry climate. The inhabitants of this period made and used flaked cobble tools. A typical example is a chopper made of quartz, similar to the tools of the Late Paleolithic period in Tham Om cave and Lang Vac monument (Nghe An). In addition to choppers, some early Hoabinhian tools appeared in the monuments during this period, such as discoidal scrapers with flaking marks, cobble tools, stone nodes, flakes, grinding tables, and stones with round concave marks on one or both sides (Figure 5).

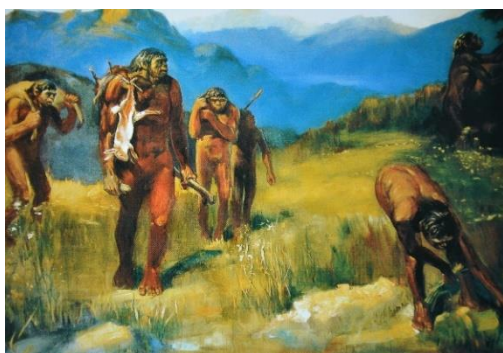
The early inhabitants hunted animals, such as monkeys (*Macaca sp.*), langurs (*resbytis sp.*), gibbons (*Hylobates sp.*), orangutans (*Pongo pygmaeus pygmaeus*), porcupines (*Hystrix sp.*), wild boars (*Sus scrofa*), wild water buffalos (*Bubalus bubalis*), bison (*Bovinae gen. & sp. indet.*), goats (*Capricornis sumatraensis*), sambar deer (*Cervus unicolor*), muntjacs (*Muntiacus muntjak*), deer (*Axis sp.*), rhinoceros (*Rhinoceros sp.*), Asian black bears (*Ursus thibethanus*), sun bears (*Ursus malayanus*), badgers (*Arctonyx collaris*), Asian palm civets (*Paradoxurus hermaphroditus*), and elephants (*Elephas sp.*) (Vũ & Popov, 1992). Some animal bones have burn marks or impact marks, indicating that they were a food source that humans hunted and brought into the cave to eat daily (Figure 6).



(a)



(b)



(c)



(d)

Figure 6. An illustration of primitive man's activities

Note: a) Crafting tools; b) Using fire; c) Hunting; d) Gathering.

Source: Jelinek (1982).

The middle period dates from 24,000 to 12,000 years BP. In addition to hunting animals as in the previous period, the prehistoric inhabitants started to collect land snails and a few stream snails for food. The climate at this time gradually changed from dry and cold to hot and humid. In addition to some unifacial tools, the prehistoric inhabitants began to use the bifacial technique to make tools. They focused on making cobble tools with triangle, tortoiseshell, and iron shapes and used modified flakes with small and systematic scars at the edge.

The last period dates from 12,000 to 7,000 years BP. Prehistoric people at this time expanded hunting to small animals and gathered herbs and mollusks, such as snails, clams, and mussels (*Lanceolaria fruhstorferi*), from ponds, lakes, rivers, and streams for food. The techniques for crafting stone tools advanced; the tools were mainly made of cobbles flaked on both sides. Notably, besides rectangular, triangular, and iron-shaped axes, tools sharpened at the blade edge, tools made of animal bones, and cutting tools made of mussel shells appeared in this period.

Around the Mai da Dieu, archaeologists also discovered 17 other prehistoric monuments. These monuments have different dates and characteristics that reflect the cultural appearance of two different stone crafting industries, namely the “Hoabinhian industry” and the “Dieu industry.” The features of these two groups are as follows:

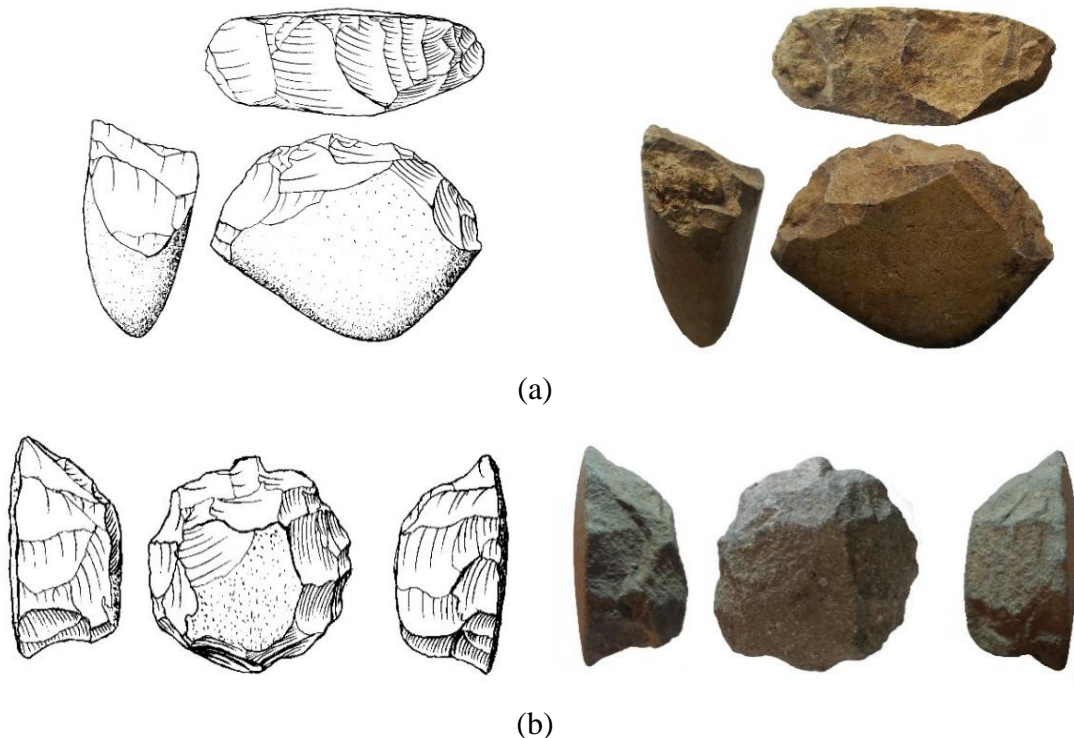


Figure 7. Typical tools of the Hoabinhian industry in Ba Thuoc

Note: a) Choppers; b) Discoidal scrapers.

Source: Kandyba et al. (2020).

- Typical for the Hoabinhian industry are the artifacts of Ma Xa I cave, Thung Khu cave, Pha May cave, Chuong cave, Cuon cave, Bat cave, Kha cave, etc. There are two phases: (1) In the early period, the prehistoric inhabitants specialized in crafting and using traditional cobblestone tools, such as vertical and horizontal cutting tools, tools made out of a quarter of cobblestone, and trident tools. Besides the oval ax, almond ax, sumatralith, and short ax, the most typical tools are choppers and discoidal scrapers (Figure 7). This complex of artifacts is similar to the collection of tools from the early Hoabinhian period, such as those from Xom Trai cave, Lang Vanh (Hoa Binh Province) dating from 18,000 to 16,000 years BP (Nguyen, 2021; Nguyễn et al., 2016). (2) In the period from 10,000 to 7,000 years BP, some common artifacts of the Hoabinhian industry are almond-shaped axes, discoidal scrapers, short axes, edge-sharpened axes, and flakes, as seen in Cuon cave, Doi cave, and Lang Trang 4 cave. The inhabitants of the late Hoabinhian industry in Ba Thuoc district were a great source in creating the cultural industry of the Middle Neolithic – the Da But culture in the coastal plains of Thanh Hoa and Ninh Binh, dating from 7,000-4,000 years BP (Nguyễn, 2018).



Figure 8. Iron-shaped tools from Mai da Dieu in Ba Thuoc district (Thanh Hoa)

Source: Kandyba et al. (2020).

- Typical of the “Dieu industry” characteristics are artifacts of Anh Ro cave, Mai da Nuoc cave, Trau cave, etc., located near Mai da Dieu. The tool combination is similar to that in the middle layer of Mai da Dieu, which consists of small bifaces, such as rectangular and triangular axes, but especially iron-shaped tools (Figure 8). These monuments date to 13,000-10,000 years BP. The monuments of Thung Khu cave, Bat cave, Na Dong cave, and Cuon cave from the later period of 10,000-7,000 years BP also belong to the Dieu industry. In this group of monuments from the late period and tools with Mai da Dieu style, some late Hoabinhian industrial style tools appeared, showing a solid cultural integration with the Hoabinhian industry. Towards the end of this period, the boundary between the two industries was hardly evident, which is a cultural feature of the prehistoric inhabitants of the

Ba Thuoc area (Thanh Hoa) from 30,000 to 7,000 years BP. It should be emphasized that the residents who created the Dieu industry in western Thanh Hoa are a great source in starting the middle Neolithic industry. Typical is the Quynh Van culture in Nghe An-Ha Tinh, dating from 6,000 to 4,000 years BP and characterized by distinctive “iron-shaped” tools (Nguyễn, 2003).

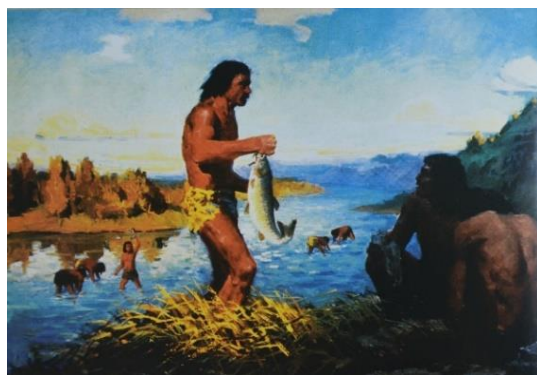
Thus, from Mai da Dieu – a cave or an original village in the earliest period, 30,000 years ago, stone age residents expanded their occupation range to the surrounding valleys of Ha Trung, Tan Lap, and Ban Cong. They gradually adapted to the environment of the karst valley in the upper part of the Ma River. They also established two stone crafting industries that both exhibit the standard features of the Hoabinhian industry and local practices of the Dieu industry in the Ba Thuoc region, which gradually integrated at the end of the Neolithic. By the late Neolithic, prehistoric inhabitants still lived in caves and were linked together by tribes. Activities such as hunting, gathering, fishing, and making pottery were performed throughout. A portion of the population moved down to the coastal plain, contributing to the formation of the Da But and Quynh Van cultures in North Central Vietnam (Figure 9).



(a)



(b)



(c)



(d)

Figure 9. Illustrations of Ba Thuoc Neolithic residents’ daily activities

Note: a) Family activities in the cave; b) Community activities around the fire; c) Men fishing; & d) Women making pottery.

Source: Qi and Zhou (2007).

2.3. Traces of Dong Son culture in the Ba Thuoc mountain area

Research results show few traces of the Metal Age in the Ba Thuoc mountain area. After 4,000 years BP, the Late Neolithic-Metal Age inhabitants still resided or were buried in the caves where their ancestors had lived before. On the floor of some caves in the Ba Thuoc district, it is common to see shouldered axes, quadrilateral axes, and stone bracelets that were finely crafted and fully polished. In addition, there are ceramic pots and vases, and spindle whorl made of clay by a hand-molding technique with low calcination. The pottery bodies are decorated with patterns formed of rope impressions or engraved lines.

An early Iron Age culture, the “Dong Son culture,” formed in the 7th century BC in the northern delta and coastal plain of Thanh Hoa. Monuments of the Dong Son culture have appeared, dating back to the centuries before and after the beginning of the common era in the mountainous area of Thanh Hoa, particularly Ba Thuoc. Typical are monuments or collections of bronze axes, spears, daggers, drums, jars, and bowls. Graves of Dong Son culture were also found in Mai da Dieu and other monuments in the Ba Thuoc district. In these tombs, the buried grave goods are ordinary ceramic pots and jars belonging to the Dong Son culture in the delta (Figure 10).

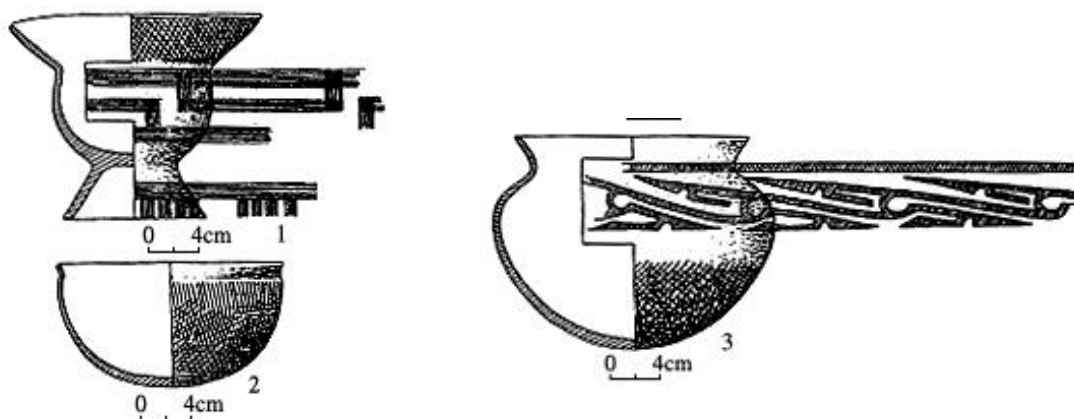
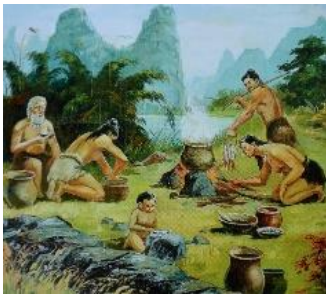


Figure 10. A Dong Son grave good from Mai da Dieu

Source: Nguyễn (2001).

Other documents show that, during the period of Dong Son culture, some groups of residents left the caves to live outdoors and engage in permanent agriculture along the river and in activities such as hunting, fishing, animal husbandry, spinning, and weaving (Figure 11). In the new era, hanging coffins made of hollow tree trunks were found in some caves in the mountains of Thanh Hoa. These coffins are similar to those from Ma Xa II cave (Ba Thuoc), caves in Quan Son and Quan Hoa districts (Thanh Hoa Province), caves in Van Ho district (Son La Province), and a few other places in the northern mountains of Vietnam.



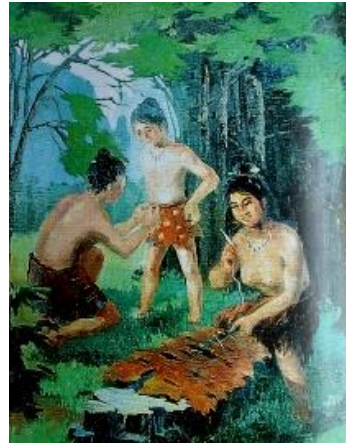
(a)



(b)



(c)



(d)

Figure 11. Illustrations of Metal Age residents' daily activities

Note: a) Outdoor residence; b) Fishing; c) Animal husbandry; d) Making clothes from bark.

Source: Qi and Zhou (2007).

3. CONSERVATION AND TOURISM EXPLOITATION

3.1. Some outstanding archaeological and cultural heritage legacies

In Ba Thuoc district, paleontological remains and ancient cultural monuments of prehistoric people converge, reflecting the evolution and development of the first people in Vietnam. This development process is from apes to modern humans and from life in caves to civilization under the Hung Kings.

It can be affirmed that not many places in Vietnam have a system of caves with animal fossils, such as the giant apes of the Pleistocene period about half a million years ago. The later monuments of Ba Thuoc provide the first fossil evidence of the appearance of modern humans in Vietnam, along with a rich and diverse Pleistocene fauna. Convincing proof and data on the first modern humans in the territory of Vietnam and Southeast Asia were obtained in Lang Trang cave (Ba Thuoc, Thanh Hoa), Ma Uoi cave (Hoa Binh Province), Tham Om cave (Nghe An), and Tam Pa Ling cave, Hua Pan Province (Laos).

Another outstanding legacy of prehistoric culture in the Ba Thuoc district is the system of prehistoric archaeological monuments. The cultural remains of the prehistoric people have proved that the history of this land is one of continuous development, inherited from the communities of the late Paleolithic in Vietnam. During the development process, along with the traditional Hoabinhian industry, the prehistoric people also created the Dieu industry, a separate industry with local nuances. Prehistoric communities had a long-term residence in the Ba Thuoc area. They settled in caves, developed a stone tool crafting industry and ceramics, hunted animals, and collected natural products in the surrounding area. The prehistoric inhabitants here contributed to the formation of two Middle Neolithic cultures: the Da But culture in the coastal plain of Thanh Hoa and the Quynh Van culture in coastal Nghe An.

With the profound archaeological heritage mentioned above, tourism operators can introduce visitors to the formation of caves and rock shelters, explain how caves and rock shelters became human homes, and how humans chose a cave as a place to live. In particular, visitors should be introduced to the process of colonization. From the original cave (Mai da Dieu), residents moved to the surrounding caves that were part of the valley and stream system flowing to the Ma River. With pictures, mannequins, or 3D techniques, it is possible to reconstruct the activities of primitive people in each cave, such as making stone tools, hunting, gathering, fishing, making pottery, burying the dead in caves, etc. The transition to the Metal Age, with people leaving caves, fishing, farming, raising livestock, making clothes out of bark, etc., can also be shown.

The outstanding legacy of the inhabitants of the Late Neolithic-Early Metal Age is the inheritance and enhancement of the tradition of perfecting stone tool crafting, jewelry and pottery making techniques, the emergence of agriculture, and the domestication of some animals. These activities need to be illustrated in a scientific and lively way, showing the activities of the people who “retreated” to the mountainous areas of Ba Thuoc district, so tourists can learn about the historical-cultural process in this place.

3.2. Efforts to preserve and promote archaeological heritage for tourism

Archaeological monuments and artifacts in the Ba Thuoc district are a source of accurate prehistoric materials. They are also an original, authentic, objective heritage, and a unique tourism resource. Since the inheritance left by our ancestors cannot be reproduced, the legacy can never be restored once it is lost. Therefore, these resources need to be protected so that the ancestral heritage will last and remain a scientific resource, serving research and cultural tourism development. To do that, the effort to preserve and promote this archaeological heritage must comply with the following requirements:

(1) Conservation and harmonious promotion of different types of archaeological heritage in Ba Thuoc are needed. The complex is a system of caves with fossils of animals and ancient humans in Lam Sa commune and prehistoric archaeological monuments in the valleys of three communes: Ha Trung, Ban Cong, and Tan Lap. Some typical caves need investment and renovation after a long time of being unvisited. It is requisite to reveal fossil sites and stratigraphic sections. Typical graves should be restored on-site,

and a gallery in the district center should be established to introduce archeological sites and other local monuments.

It is critical to promote archaeological tourism by developing tours, constructing roads to monuments, and installing signs and signposts for fossil monuments and prehistoric archaeological sites, especially those ranked at the provincial level. In Ba Thuoc district, tourist routes are comprehensive and convenient for traveling. The cultural tour should introduce the story of the first giant ape and the story of the first humans. In particular, how humans occupied caves, what legacy they left, how they conducted their livelihood activities, buried the dead, etc., should be vividly illustrated, emphasizing the value of the outstanding cultural heritage. It is possible to narrate this prehistorical-cultural story through a system of caves in one or two archaeological tours.

(2) One feature of prehistoric monuments and archaeological remains is their inherent “silence,” which by itself fails to convey the message of the past to the public. Therefore, tourists who want to learn from such documents must depend on archaeologists who directly excavate and research monuments. With archaeologists’ help and many different sources and methods, we have reconstructed the most complete and vivid picture of prehistoric culture in history. Thereby, stories about human evolution and development, the ups and downs of history, and the cultural achievements from tens of thousands of years ago until recent times have been clarified. It is essential to have the support of science and technology to restore the prehistoric context. These technologies can include computer simulations, 3D movies, original scene reconstruction techniques, models of reconstructed monuments (in which the models are placed next to the actual monuments) for tourists to experience the excavation process, etc. This is a trend in cultural tourism that needs investment.

(3) It is imperative to link archeological tourism with the other types of tourism that exist in the Ba Thuoc district and surrounding areas. Ba Thuoc is a mountainous district. Its location is remote and access is not convenient, which preserves the traditional culture of the Muong and Thai ethnic groups. In addition, Ba Thuoc is a locality with many unique natural landscapes that have not been effectively exploited: Pu Luong Nature Reserve (Quoc Thanh cluster), Mo waterfall in Dien Quang commune, Dien Ha dam, Huu waterfall (Hieu), Doi cave (Kho Muong), and the stream of natural fish (Van Nho divine fish), etc. Therefore, archeological tourism should be linked with scenic tourism and the culture of the whole Thanh Hoa mountainous region. This connection will create an extensive and attractive tourism network to attract and retain visitors.

(4) It is fundamental to have appropriate investment and restoration of the Ba Thuoc archaeological sites to make this type of tourism become a practical resource contributing to the local socio-economic development. And by that, we should link the discovered monuments into a standard tourism system of a district, region, and inter-region. These tourist attractions must reflect the results of excavation, research, and scientific awareness of the monuments themselves. At the same time, they must be placed in the general context of the monuments in Thanh Hoa and the joint achievements of Vietnamese and regional archeology.

(5) The purpose of tourism operators should be to awaken the “silent” archaeological artifacts to “speak” of the era that produced them. And in many different forms, they need to convey the messages from the past to tourists. Therefore, the training of human resources for this sector of the tourism industry should also be a focus of managers, educational institutions, and businesses. There is a need for voluntary participation and community consensus to jointly protect the monuments so as to benefit from the heritage and to preserve and promote it most effectively.

4. CONCLUSION

Ba Thuoc district is the convergence of many prehistoric archeological monuments, ethnographic monuments, and unique landscapes of the mountains of western Thanh Hoa Province. The archaeological remains in prehistoric caves are “sleeping” and yet “awakened.” Therefore, we need to be fully aware of the outstanding archaeological heritage, which is the unique and invaluable tourism resource left by our ancestors for our people and future generations. This resource is nonrenewable; hence, preserving and promoting this heritage is a priority for tourism development in border areas such as the Ba Thuoc district.

The aim of tourism operators towards these monuments is to awaken the “silent” archaeological artifacts to “speak” of the era that produced them. This mission is a challenge and a responsibility to the ancestors. On the other hand, it is also an excellent opportunity for tourism operators in the Ba Thuoc district in the present day. The value of these tourist spots must be promoted in association with the community ethnographic tourism, scenic spots, and the general context of the monuments in the mountainous borderland of Thanh Hoa.

In short, to promote the archeological heritage of the caves in the Ba Thuoc district as a valuable resource for tourism, it is necessary to connect archaeologists, cultural managers, tourism operators, and entrepreneurs to create synchronization. At the same time, it is essential to train human resources for local tourism and to develop a plan for tourism investment and exploitation. If these steps can be carried out, we believe that the cultural heritage left by our ancestors will be honored, contributing to the socio-economic development strategy in Ba Thuoc district and proving the worthiness of our people and future generations towards this legacy.

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