System of the Paleolithic Locations in the Upper Ba River

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Abstract: In the season of fieldwork in 2013 – 2014, the archaeologists discovered and preliminary studied 13 paleolithic sites at Kbang, Đắk Pơ districts and An Khê town in the Highlands area of the Ba River, Gia Lai province.

Five of these sites have been considered to be from the early/middle Paleolithic, which are Gò Đá, Rộc Tưng, Rộc Hương, Rộc Giáo and Rộc Lớn. The stone artifacts found from these sites lied in the setiment layers of the middle Pleistocene. Most of them were mainly made of quarts and the others were made of quartzite, with typical forms of handaxes, bifaces and pointed tools. The anticipated dates are within 30,000 BP – 80,000 BP.

In addition, in this Paleolithic system, there are othe sides considered to be late Paleolithic such as Roh Village, Lợk Village, Village 3, Tư Lương, Soi Tre, Ong Dú, An Phong, Village 2. The collections of the stone artifacts found from these sites lied in indistinct layers and they include end-choppers, side-choppers, scrapers, pointed tools, etc., similar to the tools from the Sơn Vi industry in North Vietnam.

Key words: Paleolithic locations, Upper Ba River.

In the framework of the project *"Research on the system of Stone Age Sites in the Upper Ba River in Gia Lai Province" (2014-2015)*, while carrying out fieldwork in 2013 – 2014, researchers of the Institute of Archaeology discovered 13 locations of the Palaeolith in KBang District, Đắk-Pơ District and An Khê Town (Gia Lai Province) – *See Map 1*. The paper presents a brief introduction of new findings with initial analyses, comparisons, and determinations involved with characteristics of sites, artifacts and dates, and points out major historical and cultural values of those new findings in the dawn of prehistory in our nation.

1. Several human geographical features of the Upper Ba River

The researched sites cover an area of 3,985.6 square meters, including three districts (KBang, Đắk-Pơ, and Kông-Chro) and An Khê Town with a total population of 205,790 persons and a density of 139 persons per a square kilometer. Geographically, it is located in the lower sub-region of An Khê in the Central Highlands. It is viewed as a transitional area between Pleiku Highland and the coastal plain area of Bình Định Province. The Upper Ba River is the very area of the most long-lasting habitation of Bana people.

The lower area of An Khê is composed of three major groups of rock, including acid magma, sedimentary - alluvial rock, and baze rock (basalt and tyf). The topographical particularity of this area is erosion and sedimentation with remaining hills resulted from erosion of Ba River at the late of the Early Pleistocene. At present, there are relatively flat hills, which used to be the second and the third terrace of Ba River. Their altitude

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ranges from 430 to 450 meters. The underneath is a layer of laterized red soil mixed loosely with beds of quartz (Nguyễn Văn Chiển, 1986).

Ba River is 374 kilometers long, running at first from North to South from Ngọc Rô Mountain Chain (Kon Tum Province), of which the altitude is 1,549 meters, through Kbang District, Đắk-Pơ District, An Khê Town, Kông-Chro District, Ia-pa and Ayun-Pa (Gia Lai Province). And then, it runs from northwest to southeast through Krông-pa District (Gia Lai Province) to Phú Yên Province, where it starts to run from west to east to the sea in Tuy Hoa (Phú Yên Province). In the Central Highlands , this is the only big river that runs to the East Sea (or the South China Sea).

The Climate in the Upper Ba River area is the transition from the Central Highlands climate to the Central Plains climate. The annual average rainfall is 1,500 mm. The rainfall is the highest (the monthly rainfall is around 250 – 300 mm) for the period from September to November and the lowest in February and March (the corresponding figure is 10 to 20 mm). The dry season lasts for 3 months, from January to March, with an average 75 – 80% humidity. The rainy season causes great impacts on living being as well as livelihood and culture of local people. In the Upper Ba River, forests are tropical, closed and green; some are semi-defoliated with tropical humidity. In the past, we could find tigers, deer, muntjac, monkeys, squirrels and many species of birds in the forest. At present, we can find, however, only small animals in the riverhead forest due to deforestation.

Located in the transitional area between the highland and the coastal plain, the Upper Ba River area has the same ecological characteristics as the Central Highlands. Along the north-south axis, we can find a mountainous ecosystem (in Ngọc Linh Mountain at the altitude of 2,588 meters) and a highland ecosystem (in Kon Hà Nừng, Pleiku, Buôn Ma Thuột, M'Đrắk Lắk, Đắk Nông, and Lâm Viên at the average altitude of 500-600 meters) and finally a mountainous ecosystem (in Chư Yang Xin at the altitude of 2,450 meters). When we move from the highlands to the Central coast, it is difficult for us to recognize clearly topographical changes between areas. In fact, the Central coastal area is just an extension of the Central Highlands at a lower altitude. When we move straight from the west to the east, we can see a common ecological pattern as below: Highlands – Mountains – Plain – Coast. Areas along the two axes, horizontally and vertically, have very particular ecological characteristics of the Central Highlands generally and lower An Khê specifically (Nguyễn Khắc Sử 2007:5).

Along the horizontal axis of the Central Vietnam and the Central Highlands as well, the geo-morphology is very similar with a natural and complete pattern: Highlands – Low Mountains – Hills – Plain – Coast – Islands – Continental Shelf. In this ecosystem, all components such as climate, soil, creatures, topography etc... are intricately related and they actually cause mutual influence on one another. Rivers and mountains run from northwest to southeast, from the continent to the sea. This is the very direction for migration of plants and animals. Here in, the East Annamese Range connects with the West Annamese Range via low mountain passes, where the ecosystem is very diversified. Thus, people came to inhabit and build thriving civilizations very long ago.

2. Paleolithic sites and artifacts in the Upper Ba River

2.1. In the site of Lợk Village (Nghĩa An Commune, Kbang District). It is located at a latitude of $14^0$05'27.7'' north, a longitude of $108^0$38'30.4'' east, and an altitude of 443 meters. In the second terrace of Ba River, 31 stone tools (including 4 side choppers), 3 end choppers), 2 pointed tools, 1 iron-shaped tool, 2 pestles, 2 hammer stones, and 8 flakes) were found. Those artifacts were coarsely made from river pebbles, mainly quartz. They are very similar to the Paleolithic artifacts found in Lung Leng site (Kon Tum Province), like the tools of Sơn Vi Culture from the late Paleolithic Age (over 10 thousands years ago).

2.2. In the site of Village 4 (Đông Commune, Kbang District). It is located at a latitude of $14^0$06'2.5" north, a longitude of $108^0$37'21.4" east, and an altitude of 472 meters. In 2014, 1 pebble point, 2 end choppers, 1 pestle, and 2 peaces of material stone were found. Those artifacts are similar to the late Paleolithic artifacts found in Lợk Village and Lung Leng site.

2.3. In the site of Roh Village (Đông Commune, Kbang District). It is located at a latitude of $14^0$06'09.6'' north, a longitude of $108^0$37'31.3'' east, and an altitude of 451 meters. During the investigations in 2013 and 2014, 34 Paleolithic tools, including 2 side choppers, 3 stone-core tools, 1 pointed tool, 1 pestle, l scraper, 2 flaked tools, and 24 flakes, were found. They are very close to the late Paleolithic artifacts in Lung Leng.

2.4. In the site of Tư Lương Village (Tân An Commune, Đắk-Pơ District): It is located at a latitude of $13^0$55'35.5"north, a longitude of 108^0 35'37.6" east, and an altitude of 423 meters. The Paleolithic artifacts found in this site consist of 9 tools, including: 2 pointed tools, 4 side choppers, and 3 stone-cores. The material and shapes of these artifacts are very close to those of the Paleolithic artifacts found in Roh and Lợk Villages (Kbang District).

2.5. In the site of An Phong Village (Tân An Commune, Đắk-Pơ District): It is located at a latitude of $13^0$56'53.6" north, a longitude of $108^0$35'47.9" east, and an altitude of 407 meters. The Paleolithic artifacts found in this site consist of 1 end chopper, 2 side choppers, 1 opposited double edged tool, 1 flaked tool, 1 pestle, and 1 quartz core. They are very similar to the Paleolithic artifacts found in Lung Leng (Kon Tum) and the late Paleolithic artifacts found in Kbang.

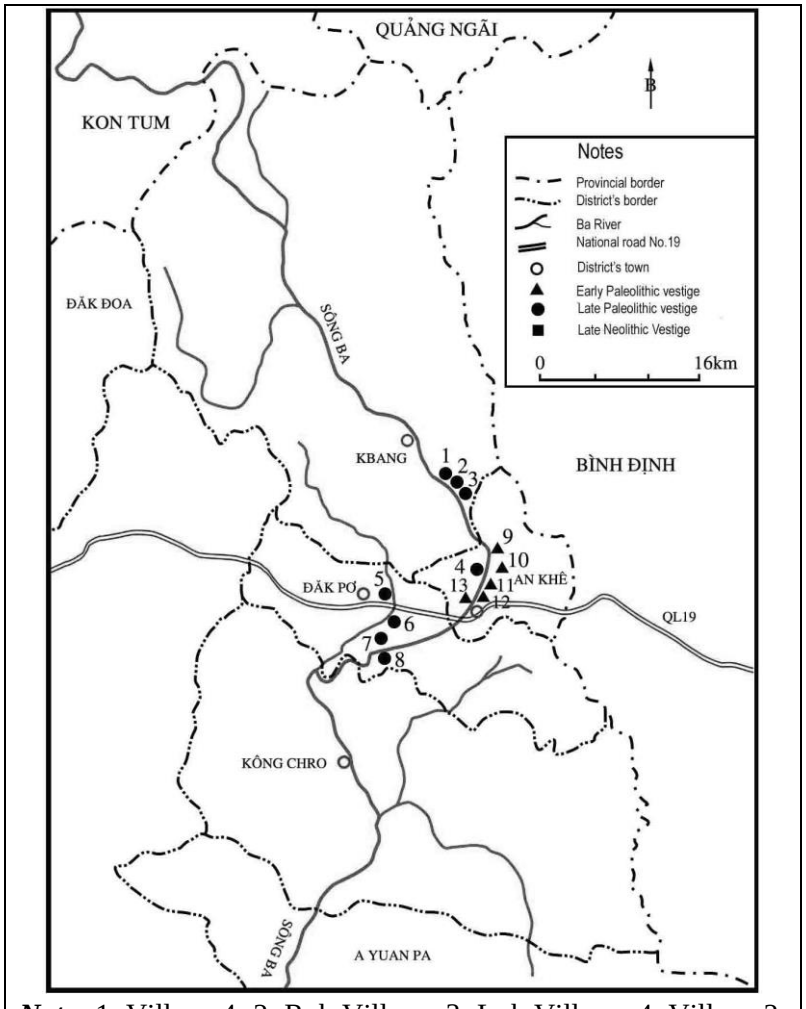
2.6. In the site of Soi Tre (Cư An Commune, Đắk-Pơ District): It is located at a latitude of $13^0$58'28.6" north, a longitude of $108^0$34'42.2" east, and an altitude of 430 meters. The Paleolithic artifacts found in this site consist of 2 pointed tools, 4 choppers, 2 multi-edged tools, 1 pestle, 6 flakes, and 3 pieces of raw material. They are very similar to the late Paleolithic artifacts found in Lung Leng and Kbang

2.7. In the site of Ong Dú (Phú An Commune, Đắk-Pơ District): It is located at a latitude of $13^0$55'08.4" north, a longitude of 108^0 36'31.1" east, and an altitude of 397 meters. The Paleolithic artifacts were found in the layers of a pond in this site. They consist of 1 pointed tool, 1 chopper made of silex stone with coarse scars. These artifacts are very close to the Paleolithic artifacts found in Kbang

2.8. In the site of Village 2 (Thanh An Commune, An Khê Town): It is located at a latitude of $14^0$00'01.6" north, a longitude of $108^0$39'44.5" east, and an altitude of 446 meters. The Paleolithic artifacts found in this site consist of 2 choppers, of which one is made of quartz and the other is made of opal pebble. They have similar characteristics as those of the late Paleolithic artifacts found in Lung Leng (Kon Tum) and Kbang.

2.9. In the site of Rộc Tưng (Xuân An Commune, An Khê Town): It is located at a latitude of $14^{0}02'15.2"$ north, a longitude of $108^{0}40'49.9"$ east, and an altitude of 443 meters. Investigations were conducted along a canal for irrigation. A pit sized 1.5 x 0.5 meter was excavated, showing layers as below: The top layer (cultivation layer), of which the thickness ranges from 40 to 55 centimeters, is brownish soil mixed with pieces of stone and roots of sugar canes. There was no artifact in this layer. The first layer is 55cm in thickness, of which it is constituted by brownish sandy soil without artifact. The second layer, of which the thickness ranges from 60 to 70 centimeters, is red-brown coarse sandy soil. There are some small fragments of quartz mixed with laterized sandy grits. In this layer, some pebble tools were found. The third layer lying at the depth of 1.7 meters down and below is yellow sandy soil. No artifacts were found in this layer at all.

Map 1: Paleolithic Sites in the Upper Ba River



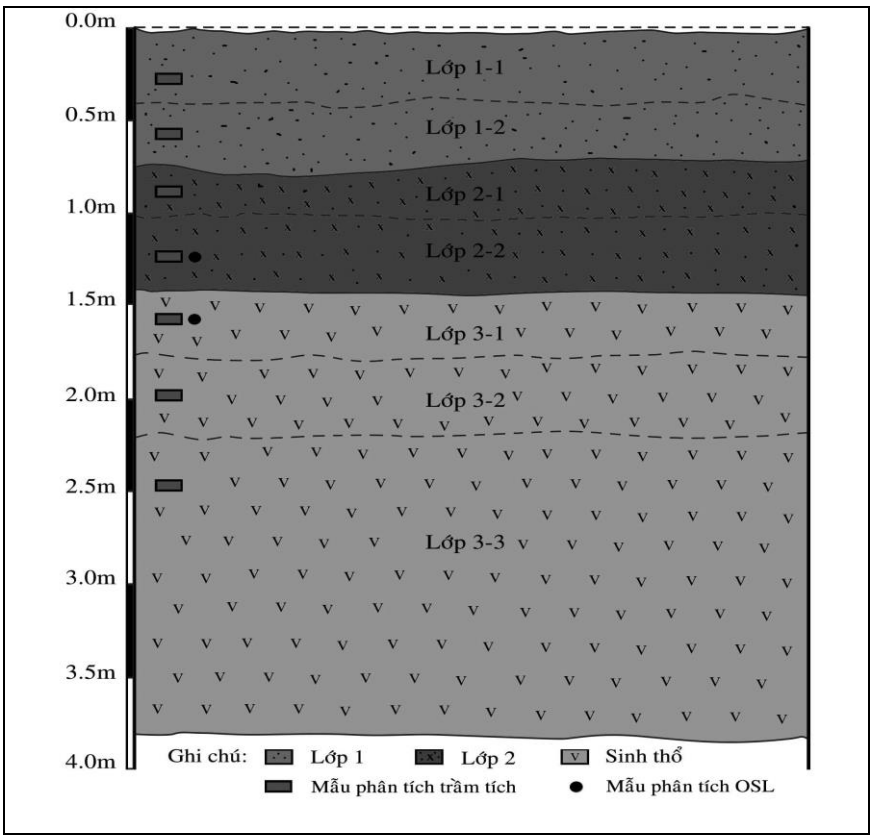
Note: 1. Village 4; 2. Roh Village; 3. Lợk Village; 4. Village 2; 5. Soi Tre; 6. An Phong; 7. Tư Lương; 8. Ong Dú; 9. Rộc Tưng; 10. Rộc Lớn; 11. Rộc Giáo; 12. Rộc Hương; 13. Gò Đá

In total, 88 artifacts were found around the excavated pit, including 18 triangular pointed tools, 7 side choppers, 5 end choppers, 4 multi-edged tools, 8 flaked tools, 14 hammer stones, 4 stone cores, and 15 worked pebble tools. Most of the tools were made from quartz, quartzite or silicate clay pebbles with large and coarse scars. The most particular feature is a triangular pointed tools like those in Gò Đá and Rộc Hương. Perhaps, they have the same date.

2.10. In the site of Gò Đá (An Bình Ward, An Khê Town): It is located at a latitude of $13^0$58'19.2" north, a longitude of 108^0 39'05.1" east, and an altitude of 421.5 meters. It is 1.5 kilometer far from Rộc Hương site on the opposite Ba river bank.

In an soil exploited hole 10,000 square meters large and averagely 4 meters deep, relatively in situ stratigraphical profile were revealed. We cut a part of the hole wall, took samples and analyzed the stratigraphical constitution here as follows: (*See Drawing 1*).

Drawing 1: Stratigraphical Profile of the Gò Đá Site



- Layer 1 (lớp 1): Brown sandy powder; 70 – 80 cm thick; unlaterized; and, there is no artifact. The layer 1 is divided into 2 sub-layers. The upper sub-layer consists of grey-brownish and fine sandy powder; it is about 40 centimeters thick; there are some grits. The lower sub-layer consists of dark brown and fine sandy powder; its thickness ranges from 25 to 30 centimeters; there are some laterite grits. The layer 1 dates from

the late Pleistocene to Holocene.

- Layer 2 (lớp 2): This layer consists of coarse brown sand mixed with some quartz pebbles and laterized sand. The thickness ranges from 90 to 100 centimeters. The composition is rather loosen. Edges of quartz pieces are a little worn out, but they haven't become pebbles yet. This illustrates that they experienced short movements like Proluvial sedimentary facies. The Layer 2 is divided into 2 sub-layers, as below:

+ Upper sub-layer: It is located at the depth of 0.8 to 1.0 meter. It consists of brownish coarse sand mixed with quartz pebbles and laterized grids. Some tools and flakes are found in this sub-layer.

+ Lower sub-layer: It is located at the depth of 1.0 to 1.4 meter. It consists of dark brown sand grits mixed with coarser quartz pieces. More tools and flakes are found in this sub-layer. The Layer 2 may date from the Pleistocene.

- Layer 3 (lớp 3): It consists of red-brown and yellow-brown sand-grit powder weathered from sandstone seams. The thickness is 2.5 meters on average, located from the depth of 1.4 to the depth of 3.8 meters. There is no artifact. This layer is divided into 3 sub-layers, according to the weathering levels. The upper sub-layer is located from the depth of 1.4 to the depth of 1.8 meters; it consists of brown sand-grit powder mixed with some red or yellow laterized sand powder. The middle sub-layer is located from the depth of 1.8 to the depth of 2.2 meters; it consists of yellow-grayish sand powder mixed with some grits and macadam. The lower sub-layer is located from the depth of 2.2 to the depth of 3.8 meters; it consists of grey sand powder mixed with some grits and macadam. The date of this layer is before the Pleistocene.

In total, 95 artifacts were found both on the ground or inside the layers in Gò Đá site. There are 14 triangular pointed tools, 3 handaxes, 7 side choppers, 3 concavely edged and pointed tools, 4 end choppers, 2 flaked tools, 1 multi-edged tool, 15 hammer stones, 25 stone cores, 1 pestle, 1 mortar, 15 flakes, and 6 stones with scars. The most typical artifacts are the triangular pointed tools, the handaxe and the concavely edged tool. The artifacts found in Gò Đá site are relatively similar to the early Paleolithic artifacts found in Rộc Tưng and Rộc Lớn.

2.11. In the site of Rộc Lớn (An Phước Ward, An Khê Town): It is located at a latitude of $13^0$59'35.4" north, a longitude of 108^0 40'56.3" east, and an altitude of 427.7 meters. The artifacts found in this site include: 5 hammer stone, 1 handaxe, 2 side choppers, and 1 flaked tool. All the artifacts are made of quartz and have a big size with coarse scars like the early Paleolithic artifacts found in Gò Đá site.

2.12. In the site of Rộc Hương (An Tân Ward, An Khê Town): It is located at a latitude of $13^0$58'15.5" north, a longitude of 108^0 40'01.3" east, and an altitude of 433 meters. In the most ancient shelf of Ba River, 28 artifacts were found, including: 9 triangular pointed tools, 4 side choppers, 4 flaked tools, some of hammer stones, stone cores and flakes, which have the same date as the artifacts found in Gò Đá, Rộc Tưng and Rộc Lớn.

2.13. In the site of Rộc Giáo (Ngô Mây Ward, An Khê Town): It is located at a latitude of $13^0$59,2'09.4" north, a longitude of 108^0 40'30.9" east, and an altitude of 433.1 meters. The artifacts found in this site include: 4 triangular pointed tools, 1 side choppers, 4 flaked tools, some of hammer stones, stone cores and flakes, which are similar to those found in Rộc Hương, Gò Đá, and Rộc Lớn

3. Characteristics of sites and artifacts

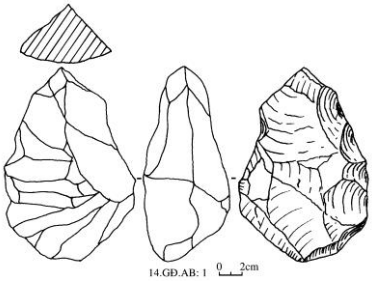
3.1. The early Paleolithic: There are 5 locations involved with this era, including: Gò Đá, Rộc Tưng, Rộc Hương, Rộc Giáo and Rộc Lớn (An Khê Town). They are located in the mounds, of which the altitude ranges from 420 to 450 meters. They used to be the most ancient terraces in the both side of Ba River. Lying within the same valley of the river, the distance between those locations is less than 4 kilometers. Some tools were found on the ground, but some others - in the layers of those sites. Basically, they are almost the same; they are made from river big-sized pebbles, which are 23 cm long, 15 cm wide and 13 cm thick on average. The material of most tools is quartz and quartzite, which are very hard rock.

The most typical for the tools found in those sites is the triangular pointed tools. It is made from a pebble, which naturally had two flat faces cutting each other. Ones just needed to make percussion on the pebble for creating one more face (or two more faces, if the pebble naturally had one flat face). The three faces join in one point. The across-section of the tool is a triangle with an obtuse angle. The handle is usually big with natural pebble cortex. There are 44 triangular arrow points out of all 230 tools found in the sites, making up 20%. Specifically, there are 13 out of 95, 18 out of 88, 4 out of 19, and 9 out of 28 tools found in Gò Đá, Rộc Tưng, Rộc Giáo and Rộc Hương respectively. (*See Drawing 2. h 1-6)*

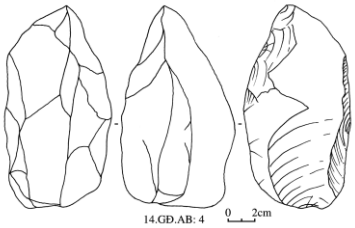
Another typical type of the early Paleolithic tools found in the sites is the bifacial tools. Those bifaces often have a big size; they are made from quartz or silicate; the percussion scars often focus on one end and on two big faces; retouched on edges or points. The across-section at the middle is an oval. The handle is big and proportionate. Of all the bifaces, there are 4 handaxes (3 ones were found in Gò Đá and 1 in Rộc Lớn – *See Drawing 2, h.7-9*). Some bifaces have a short body with a convex edges and a big handle made of quartz. This is typical for the artifacts found in Gò Đá sites. Tools of this type are completely different from the end-choppers that were often found in the late Paleolithic locations. One of the most original types of tools for the Paleolithic artifacts found in An Khê is a tool with two concave edges and a point (called a beaked tool). There are 3 tools of this type among the artifacts found in Gò Đá site (*See Drawing 2, h. 10-11*).

Apart from the above-mentioned particular tools, there are also side choppers, end choppers, multi-edged tools, hammer stones, cored tools, flaked tools, amorphous big stone cores, etc. in the early Paleolithic artifacts found in those sites.

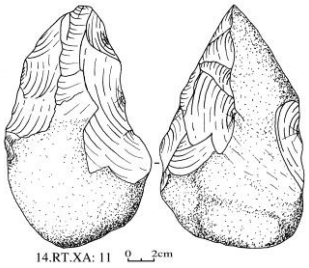
Drawing 2: Stone Tools Found in the Upper Ba River



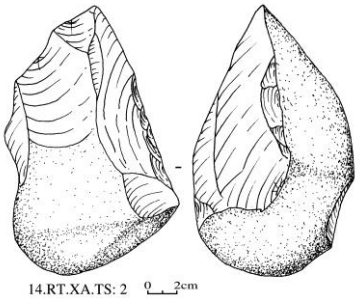
h.1. Gò Đá



h.2. Gò Đá



h.3. Rộc Tưng



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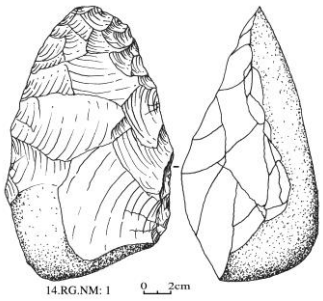
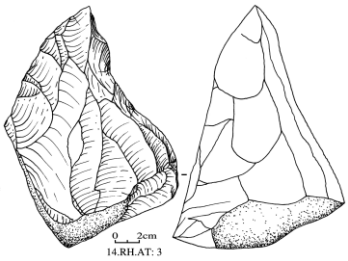
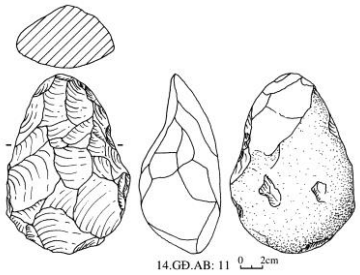


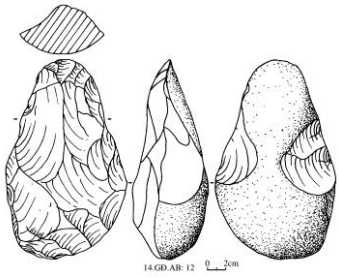
h.5. Rộc Giáo



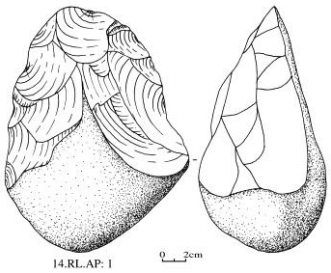
h.6. Rộc Hương



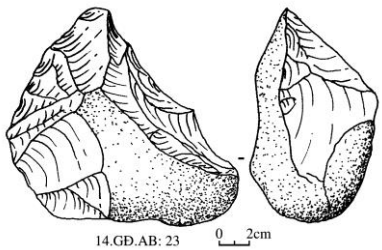
h.7. Gò Đá



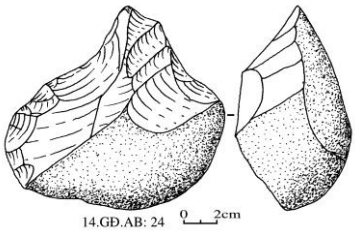
h.8. Gò Đá



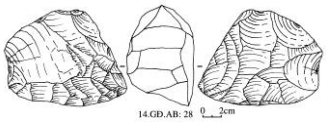
h.9. Rộc Lớn



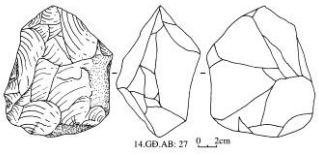
h. 10. Gò Đá



h.11. Gò Đá



h.12. Gò Đá

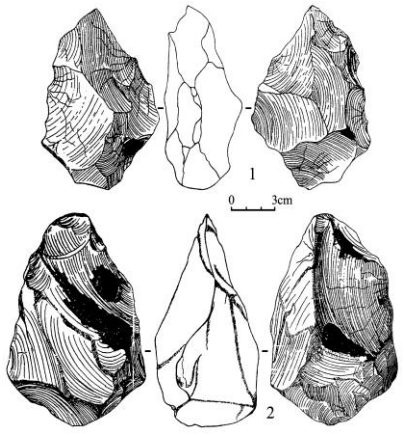


h.13. Gò Đá

***Note**:* h.1-6. Triangular arrow points, 7-9. Bifaces; h.10-11. Tools with concave edge and a point; h.12-13. Bifacial striking tools.

A comparison can be made between the Paleolithic artifacts found in the Upper Ba River and other Paleolithic artifacts found in Vietnam. Firstly, we make a comparison with the artifacts found in Đọ mountain (Thanh Hóa Province). The tools in Đọ mountain are made from basalt stone. Three handaxes found in that site have almost the same shape like the Chellian handaxes (France). They are estimated to date from 400,000 years BP (*Boriskovsky, 1966).* The bifaces in An Khê are different from the handaxes in Đọ mountain, in terms of material, striking technique, and shape (*See Drawing 3*).

Drawing 3: Handaxes in Đọ Mountain



Source: P.I. Boriscovski 1966, 66.

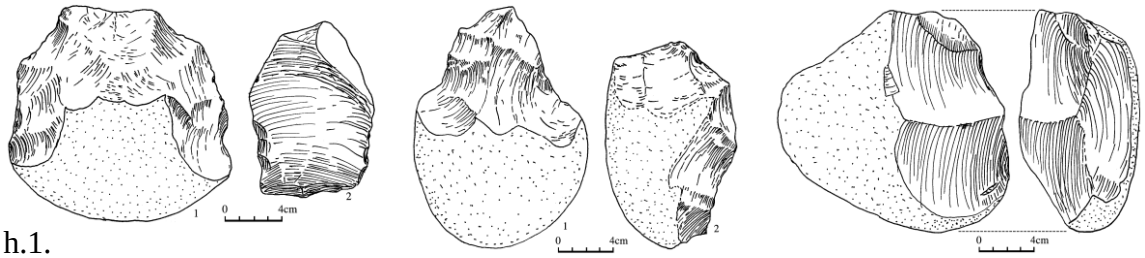
The most ancient vestige, where the pebble-knapping technique has been found, is located in Thông Hill (Hà Giang Province). Typical for the artifacts in Thông Hill is the pointed tools made from a big-sized pebble dating from the middle Paleolithic Age or the time of the pre-Sơn Vi Culture (*Nguyễn Khắc Sử 2013*). Those pointed tools are made from flattened pebbles, of which the two sides are knapped to make a point. They are different from the triangular points found in An Khê. Moreover, there are no bifaces found in Thông Hill at all. When comparing the tools found in An Khê Town with the late Paleolithic pebble-chipped tools found in the locations of Sơn Vi Culture (Phú Thọ Province) or in Làng Vạc site (Nghệ An Province) or Lung Leng site (Kon Tum Province), we can realize differences easily. In conclusion, the Paleolithic tools found in An Khê are different from and older than other Paleolithic assemblages, which have been ever found in Vietnam.

To determine the date of the artifacts in An Khê, we should compare them with the early Paleolithic artifacts found overseas. Firstly, we make a comparison with the early Paleolithic artifacts in South Korea. In the site of Ansan by the Lower Hantan River, ones found a handaxe that dated from 200 to 300 thousands year ago, according to the IRSL absolute date. In the site of Chongok-ni by the Lower Imjin River, ones found artifacts made from quartz and quartzite pebbles, including: handaxes, bifacial striking tools, points, scrapers, spherical stones, chopping tools, knives and burins in the layer of red clay, which was 3 meters thick. The handaxes found in this site are divided into 4 sub-groups, including: 1) The typical handaxes: These ones look similar to the late Acheulian handaxes; 2) The oval handaxes; 3) The pick-like handaxes: These ones look similar to picks or points; they often have a small size and were struck on both sides; there is no pebble cortex left; some of them were made from quartz pieces, of which one end was struck to make a point; 4) The original handaxes (Proto): The across-section of these handaxes does not follow a common standard and the blade is not

finely worked. In terms of date, Y. Chung assumes the Chongok-ni artifacts show the "Acheulian" technique, which dates from about 300,000 BP. Based on the date of eruptions of Aira-Tanzawa volcano in Kyushu, however, Yi Seon-bok thinks the Acheulian technique in this site dates back to less than 130,000 BP; it may have the same date as the technique in Dinh Thon (Seon-bok, 2004). In terms of the material and production technique, the Paleolithic artifacts found in An Khê are very close to the early Paleolithic artifacts found in South Korea. In terms of the type, however, there are many types of Paleolithic handaxes found in Chongok-ni, but there is no triangular pointed tools like that of the Paleolithic artifacts found in An Khê.

In India and Pakistan, ones found a range of vestiges at the Middle Pleistocene sediment layer along the Potwar Highlands in Pendjab. They are determined to date back to the early Paleolithic Era (*Drawing 4; Paterson and Drummond, 1962*). In terms of the type, Soanian tools found in India are more similar to the artifacts of Sơn Vi Culture than the Paleolithic artifacts found in An Khê.

Drawing 4: Stone Tools of Soanian Culture in India



h.1. h.2. h.3.

Source: Paterson, Drummond 1962.

Some early Paleolithic sites with the pebble-striking technique have been discovered in the South of China. They found stone handaxes in some sites such as Dingcun, Tiaoha, and Zhoukoudian (*Drawing 5*). The most particular is the group of Baise vestiges found in Shanghai Tong Village (Guangxi, China). They are located 11 kilometers due west of the Baise Town. The only artifacts are stone tools made from quartzite and metamorphic sandstone pebbles. They were distributed in the third terrace of Youjiang River basin (Laochihe). Those sites are determined to date from the late Pleistocene (Li Yan Hien, 1975:225). By now, nearly 100 sites with more than 8,000 artifacts of the Baise Culture have been discovered in 5 districts, including Baise, Dongtian, Pingyangtian, Pingjun yeji, and Lantian, along Youjiang River. This culture covered an area of 90 kilometers in length and 15 kilometers in width (Huang Qishi Tian, 2003). The most particular tools of the Baise culture include pointed tools, chopper, scrapers, cleavers, and handaxes, which are made from big-sized pebbles. The tool-making technique is to strike directly on an anvil. Most of the tools were struck on one side to make an edge; there are very few flaked tools.

Drawing 5: Handaxes in Some Early Paleolithic Sites in China

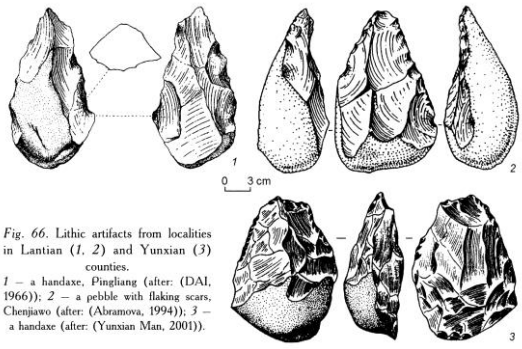


Fig. 66. Lithic artifacts from localities in Lantian (*1, 2*) and Yunxian (*3*) counties.
1 – a handaxe, Pingliang (after: (DAI, 1966)); *2* – a pebble with flaking scars, Chenjiawo (after: (Abramova, 1994)); *3* – a handaxe (after: (Yunxian Man, 2001)).

h.1. Artifacts in Lantian

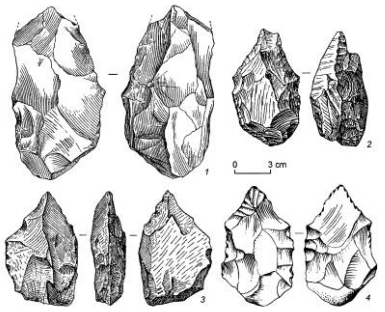


Fig. 67. Bifacially worked implements.
1 – Kehe; *2, 3* – Zhoukoudian; *4* – Laochihe River basin (after: (Larichev, 1985; Abramova, 1994)).

h.2. Artifacts in Tiaoha and Zhoukoudian

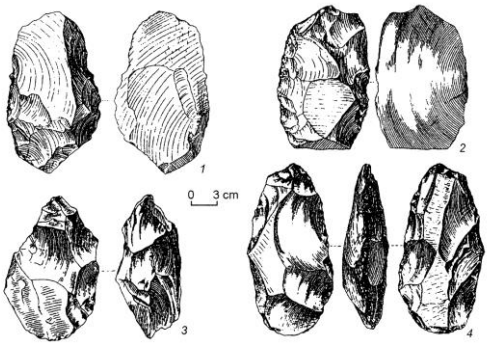


Fig. 95. Cleavers (*1, 2*) and handaxes (*3, 4*) from Dingcun (after: (Pei et al., 1958)).

h.3. Artifacts in Dingcun

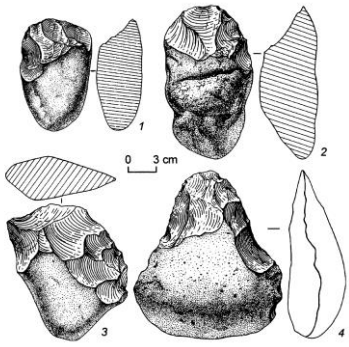


Fig. 87. Cleavers (?) (*1–3*) and bifaces (*4*) (after: (Xie, Li, Huang, 2003).

h.4. Artifacts in Baise

Source: Derevianko, 2014.

At first, the Baise tool-making technique was considered to date from the late Paleolithic. After excavations in Gao Fanwei Xiang (1988) and other sites, the date of the Baise Culture was determined to belong to the Middle Pleistocene – the Early Paleolithic Age (Guang Mao Xie et al., 2007). In 1993, Paleolithic tools of the Baise Culture were found together with a sample of tektite at the earliest sediment layer of the 4th terrace of the Youjiang River Basin in Posui Ji Village. The absolute date is determined for the sample of tektite as 732,000 ± 39,000 BP. In 2002, a big excavation was conducted at Baise and samples of tektite were also found in the layer, where stone tools were found. The date is estimated to be 800,000 BP *(*Glass, 2000).

Recently, Chinese archaeologists have discovered other 38 early Paleolithic sites in the 2nd and 3rd terrace of Zhoujiang River (Guangdong). Those sites are determined to date back to 1,500 to 500 thousands years BP. There is a similarity in the type and the tool-making technique between those sites and the Baise culture. Zeng Qiang Yun and his colleagues, therefore, assume the Paleolithic artifacts in Guangdong and those in Quangxi share a common tradition of the pebble-striking culture (Zeng Qiang Yun, 1996).

In fact, the traditional pebble-striking technique was applied widely in all over Southeast Asia, including Vietnam and Malaysia. We have realized similarities

between the artifacts in Baise and those in Thông Hill (Hà Giang Province). In the both sites, big-sized and heavy pebbles were used to make tools. There are very few flaked tools. There are pointed tools and choppers, but very few tools were made by uniface. The major difference between the artifacts of the both sites is that: there is no handaxe found in Thông Hill; whereas, the handaxe is typical for the tools in Baise. The bifacial striking technique was very common in Baise; the tools of this technique make up a significant proportion in Baise; whereas, this technique was not used in Thông Hill. On the basis of the above-mentioned analyses and comparisons, we can come to a conclusion that the artifacts in Thông Hill has a later date than the Baise culture. They may have the same date as the sites found in the second terrace of Pearl River basin (Zhu Jiang) but a later date than the sites in Baise (Nguyễn Khắc Sử, 2000). In the previous part, we demonstrated the Palaeolithic locations in An Khê were different and older than those in Thông Hill. The Paleolithic artifacts found in An Khê may have the same date as those in Baise (China).

Recently, Derevianko A.P. has systematized archaeological vestiges at the Middle Pleistocene in the Eurasia, especially the sites, where bifacial striking technique was used at the Early Paleolithic Age. They include sites in Europe (dating back to 0.5 – 0.6 millions years ago), Ubeidlya (1.4 Ma.), Gesher Benot Ya'aqav (0.9 Ma.), South Arabia (0.4 Ma.), Turkmenistan Kazakhstan (0.25 – 0.3 Ma.), Mongolia (0.25 – 0.3 Ma.), Bori (India, 0.7 Ma.), South India (0.3 – 0.35 Ma.), Pinliang (China, 0.9 Ma.), Yuanxian (China, 0.9 Ma.), Lantian (China, 0.8 – 0.6 Ma.), Baise (China, 0.8 Ma.) (*See Map 2*). The owner of this bifacial technique was the Homo erectus (*Derevianko, 2014*). Based on available materials, we can add the An Khê early Paleolithic locations, which date back to 0.5 – 0.8 millions years ago, into the group of sites where the pebble bifacial striking technique was used.

Map 2: Distribution of the Bifacial Industry in Eurasia

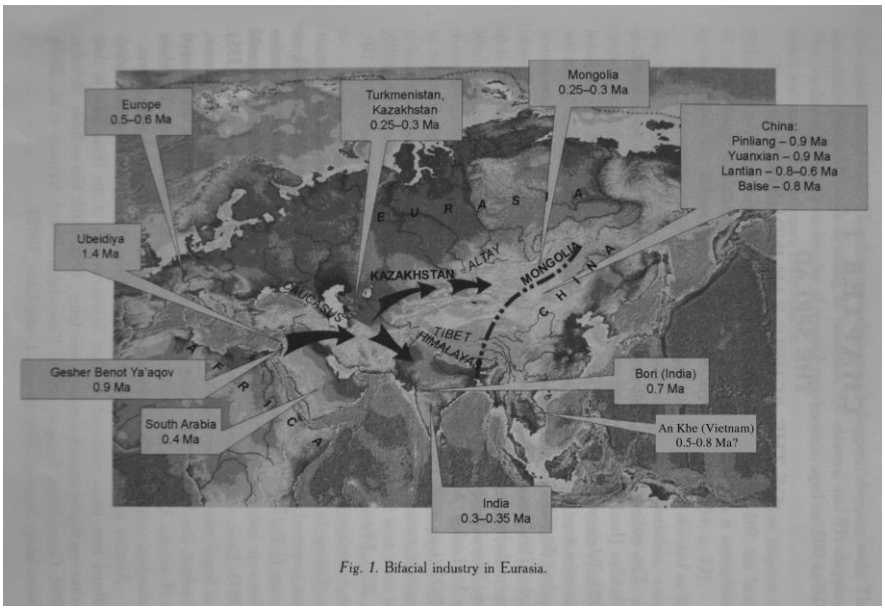
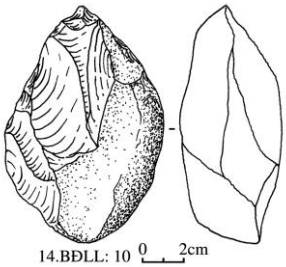


Fig. 1. Bifacial industry in Eurasia.

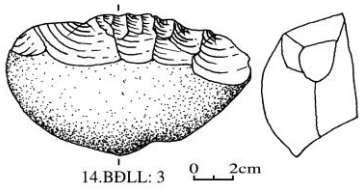
Source: Derevianko 2014:198

3.2. The Late Paleolithic artifacts discovered in the Upper Ba River include 8 locations: Roh Village, Lợk Village, Ba Village (in KBang), Tư Lương, Soi Tre, Ong Dú, and An Phong (in Đắk Pơ), and Village 2 (in An Khê Town). Those sites are distributed in a larger area than the Early Paleolithic locations. They all are located in high mounds, which used to be the ancient terrace of Ba River. Most of the artifacts were found on the ground; very few of the sites's strata are still well-preserved. In these sites, stone tools were made from river pebbles, of which one face was struck to make an edge; some edges were also retouched more. Most of them were made of a relatively big-sized quartzite, quartz, or granite pebble. The typical tools include: side choppers, end chopper, pointed tools, knives, and flaked tools. (*See Drawing 6*).

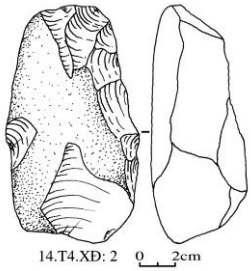
Drawing 6: The Late Paleolithic Stone Tools in the Upper Ba River



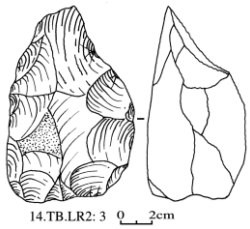
h.1. Lợk Village



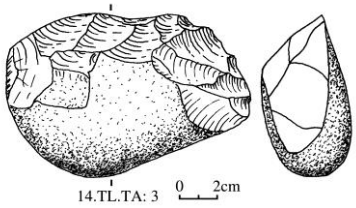
h.2. Lợk Village



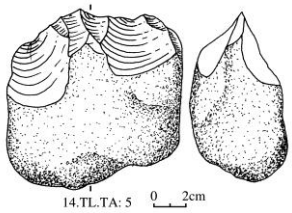
h.3. Roh Village



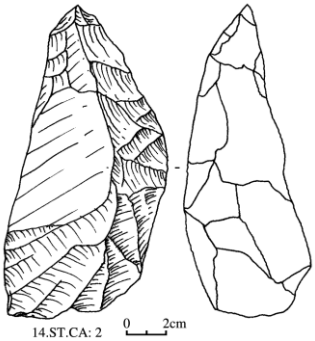
h.4. Roh Village



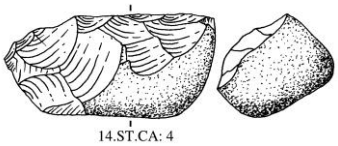
h.5. Tư Lương



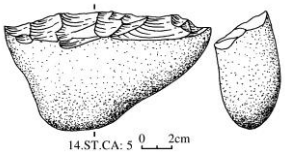
h.6. Tư Lương



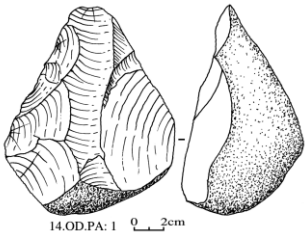
h.7. Soi Tre



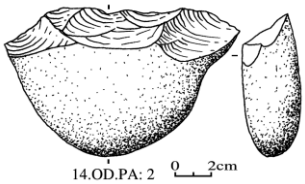
h.8. Soi Tre



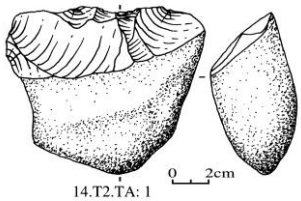
h.9. Soi Tre



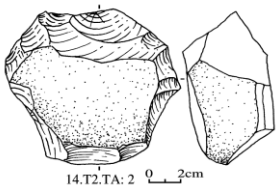
h.11. Ong Dú



h.11. Ong Dú



h.4. Thanh An



h.4. Thanh An

Comparing the early Paleolithic and the late Paleolithic tools in the Upper Ba River area, we can realize some similarities and differences, as below: stone tools in both early and late Paleolithic sites were made from river pebbles; yet, the size of the early ones is bigger than that of the late ones. At the early Palaeolith, most of tools were produced from quartz; whereas, at the late Palaeolith, they were mainly produced from quartzite and basalt. Although tools at the both times were made by striking pebbles, the late Paleolithic tools were made with smaller striking scars and retouched. Typical for the early Paleolithic tools are bifacial tools, triangular pointed tools, handaxes, flaked tools. In the meanwhile, the unifacial striking tools, including side choppers, end choppers, convergence edged tools, and sometimes surround-struck pebbles, make up a majority of the late Paleolithic tools. When carrying out investigations of layers in Gò Đá sites, we found Sơn Vi-like side choppers in the first layer (the late one), and triangular pointed tools as well as bifacies in the second layer (the early). This is very significant for us to determine the diachronic relationship between the two groups of tools. Basically, the late Paleolithic tools in the Upper Ba River are closed to the pebble tools found in the laterite layer of Lung Leng sites and the tools of Sơn Vi Culture at the late Paleolithic Age.

4. Historic and cultural values of the Paleolithic sites in the Upper Ba River region

4.1. Discovery of 5 early Paleolithic locations in the Upper Ba River in Gia Lai Province is greatly significant for research on the dawn of prehistory in our nation. In the past, the early Paleolithic materials known in Vietnam were only fossils of Homo erectus in Thẩm Khuyên and Thẩm Hai caves, of which the absolute date is 0.5 millions years BP. Regarding to the cultural aspect, we just had some materials found in Đọ mountain (Thanh Hóa Province) and Xuân Lộc (Đồng Nai Province). In those sites, stone tools were all found on the ground, without stratigraphical evidence. In addition, the most typical artifact dates from the same time of Chenian culture (France); i.e. less than 0.4 millions years ago. Obviously, there was a big gap between the remains of man and the remains of culture for the early Paleolithic Age in Vietnam.

The 5 early Paleolithic locations in An Khê are located systematically with similar artifacts distributed in a closed area; some artifacts were found in the same layer; the typical tools include triangular pointed tools, concavely edged and pointed tools, handaxes, and bifacies. Most of the tools were made from big-sized quartz pebbles with coarse striking scars. The very? bifacial striking technique has been found in many countries in Eurasia with the date of 0.3 to 1.4 millions years. The owner of the cultural remains is the very Homo erectus. In An Khê, the facial pebble-striking technique lies in the sediment of the Middle Pleistocene, about 0.5 to 0.8 millions years ago. This finding, therefore, not only adds a location to the map of bifacial industry in the world, but also affirms that the beginning of Hominid occupation in Vietnam appeared at least 0.5

to 0.8 millions years ago.

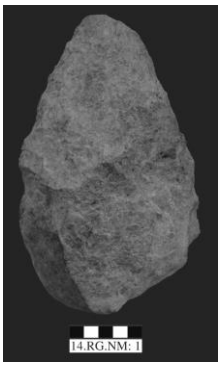
4.2. In the Upper Ba River, a group of the late Paleolithic locations were also discovered. In the past, we just learned about the Sơn Vi industry distributed in the midland of Phú Thọ Province and some big river banks in Northern Vietnam. The discovery of the late Paleolithic sites in the Upper Ba River makes a supplement into the distribution map of late Paleolithic pebble-striking technique in Vietnam. Previously, the locations of Sơn Vi Culture used to be a single discovery in Lung Leng and Plei Krông (Kon Tum) (Nguyễn Khắc Sử, 2014). After the findings in the Upper Ba River (Gia Lai Province), Sơn Vi industry is recognized in a general system. Furthermore, these locations together with other Sơn Vi-like sites found in Cùa (Quảng Trị Province - Trần Quốc Vượng, 1993) and Trà Veo (Quảng Ngãi Province - Phan Thanh Toàn, 2013) constitute a group of late Paleolithic pebble-striking technique in the transitional area between the highlands and the coastal plain area of Central Vietnam. They might be the descendant of the early Paleolithic industry in this region.

4.3. In the Upper Ba River, the early Paleolithic locations in An Khê are all located within the area of the late Paleolithic ones. This enables us to study the first settlement and subsistence pattern of mankind as well as their adaptation to the environment from the Middle to the Late Pleistocene. Based on the early and late Paleolithic tools found in this area, we can understand further the way to do gathering and hunting as well as changes in cultural behavior of ancient people.

4.4. The discovery of Paleolithic locations in the Upper Ba River is a premise for other important discoveries in the Central Highlands. It is completely possible to find out the Paleolithic tools made of fossilized wood raw materials in the Central Highland in accordance with the remains of Homo erectus and Homo sapiens under the volcanic ash or the basalt layer that is several tens meters deep. The Central Highlands is a really attractive site for research on the origin of man and early cultural remains of the mankind.

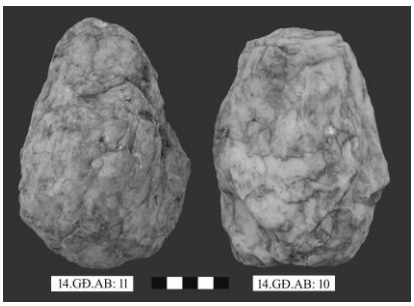
Picture 1: The Artifacts in the Upper Ba River

h.1. Arrow point in Rộc Giáo

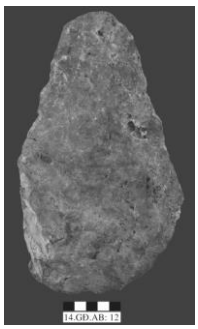


h.2. Arrow point in Rộc Giáo

h.3. Arrow point in Rộc Tưng

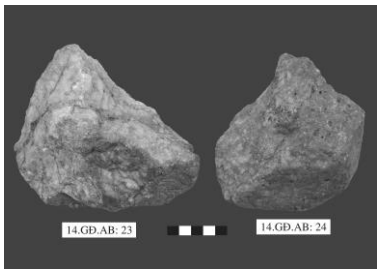


h.4. Biface in Gò Đá

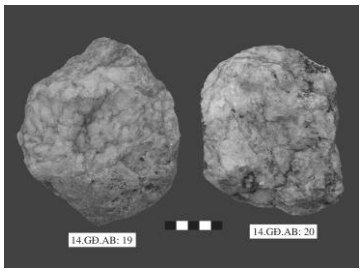


h.5. Biface in Gò Đá

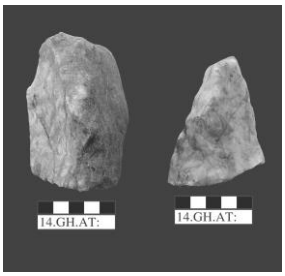
h.6. Biface in Rộc Lớn



h.7. Concave sided point in Gò Đá



h.8. Quartz scraper in Gò Đá



h.9. Fragment tool in Rộc Hương

h.10. Side chopper in Đông Commune

h.11. Side chopper in Lợk Village

h.12. Side chopper in Soi in Soi Tre

h.13. Arrow point in Lợk Village

h.14. Scraper in Soi Tre

h.15. Scraper in Soi Tre

Note: h.1 - h.9. Early Paleolithic; h.10 – h.15. Late Paleolithic).

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