



**BURIALS AND HUMAN REMAINS IN THAI NGUYEN
AFTER MORE THAN 30 YEARS OF DISCOVERY AND RESEARCH**

Nguyen Duc Thang

Thai Nguyen University - University of Education, Vietnam

Email address: thangnd@tnue.edu.vn

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Abstract:

Thai Nguyen is a province which is rich in cultural history and revolutionary traditions. In the 70s and 80s of the twentieth century, in Than Sa commune, Vo Nhai district, Thai Nguyen province, Vietnamese archaeologists discovered archaeological relics such as Phieng Tung, Nguom, Na Ngun, Tham Choong, Ha Son 1, Ha Son 2, etc. dating from post-Stone Age to early Neolithic period. Among them, the discovery of Nguom relic has especially provided archaeologists with new insights into the development of Nguom industry - the industry of separating pieces of stones in the post-Stone Age of Vietnam and Southeast Asia. Since 2011, the Vietnam Archeology Institute in collaboration with Thai Nguyen Museum, Department of History - Thai Nguyen University of Education has restarted the mission and organized of a number of investigations and surveys, discovering 10 new monuments, setting the scientific basis for Thai Nguyen prehistoric research to enter a new stage. In this article, the author investigated and collected documents of burial and human remains in Thai Nguyen in a total of more than 30 archaeological relics discovered so far. On the basis of in-depth analysis of five human skeletons in three discovered relics, the author aims to investigate the burial and anthropological characteristics of the prehistoric people in Thai Nguyen. The research results will contribute to a brief reconstruction the life of ancient people in Thai Nguyen, supplementing the teaching in high schools. On the other hand, it will contribute to the determination of the anthropological composition of residents in Northeast Vietnam in particular and that of Vietnam in general.



MỘ TÁNG VÀ DI CỐT NGƯỜI Ở THÁI NGUYÊN SAU HƠN 30 NĂM PHÁT HIỆN VÀ NGHIÊN CỨU

Nguyễn Đức Thắng

Trường Đại học Sư phạm - Đại học Thái Nguyên, Việt Nam

Địa chỉ email: thangnd@tnue.edu.vn

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Tóm tắt

Thái Nguyên là một tỉnh bề dày lịch sử văn hoá, giàu truyền thống cách mạng. Trong những năm 70, 80 của thế kỉ XX, các nhà khảo cổ học Việt Nam đã phát hiện được ở xã Thần Sa, huyện Võ Nhai, tỉnh Thái Nguyên những di tích khảo cổ học có niên đại từ hậu kỳ đá cũ đến sơ kỳ thời đại đồ đá mới như: Phiêng Tung, Ngườm, Nà Ngùn, Thắm Choong, Hạ Sơn 1, Hạ Sơn 2... Trong đó, đặc biệt với phát hiện di tích Ngườm đã cung cấp cho giới khảo cổ những nhận thức mới về con đường phát triển kỹ nghệ Ngườm - kỹ nghệ mảnh tước ở hậu kỳ đá cũ Việt Nam và Đông Nam Á. Từ năm 2011 đến nay, Viện Khảo cổ học Việt Nam phối hợp với Bảo tàng tỉnh Thái Nguyên, khoa Lịch sử - Trường Đại học Sư phạm - Đại học Thái Nguyên đã khởi động lại nguồn mạch công việc, phối hợp với tổ chức một số đợt điều tra, khảo sát phát hiện mới hơn 10 di tích mới, đặt cơ sở khoa học cho công cuộc nghiên cứu thời tiền sử Thái Nguyên bước sang giai đoạn mới. Trong bài viết này tác giả nghiên cứu tiến hành điều tra, thu thập tài liệu mộ táng và di cốt người ở Thái Nguyên trong tổng số hơn 30 di tích khảo cổ đã được phát hiện từ trước đến nay. Với việc đi sâu phân tích đặc điểm di cốt của 5 bộ xương người được phát hiện trong 3 di tích, nghiên cứu nhằm điều tra đặc điểm táng tục và loại hình nhân chủng của người tiền sử ở Thái Nguyên. Kết quả nghiên cứu sẽ đóng góp tư liệu nhằm phục dựng sơ lược cuộc sống của cổ nhân ở Thái Nguyên. Mặt khác, góp phần đóng góp vào việc xác định thành phần nhân chủng của cư dân ở Đông Bắc Việt Nam nói riêng và thành phần nhân chủng của Việt Nam nói chung.

1. Preamble

1.1. Introduction

In Thai Nguyen province, archaeologists have discovered many relics of stone age people in four districts: Vo Nhai, Dong Hy, Phu Luong and Dai Tu. In which, Vo Nhai district area has the most concentrated number of relics, typically Mai Da Nguom, Con Ho cave, Tham Choong cave, Na Ngun cave, Oc cave,

Nghinh Tac cave, Khac Kiem cave, etc. Up to now, 32 stone age relics, including 30 cave relics, 1 riverbed relic, 1 outdoor relic [7] have been discovered Thai Nguyen.

Most of the stone age relics in Thai Nguyen have a thick cultural layer containing many relics such as food remnants and animal bones. These relics are evidence for the long-term residence of prehistoric people in Thai Nguyen. However, the most eloquent evidence of the vestiges of prehistoric people in Thai

Nguyen is the burials and human remains discovered here. These graves and human remains also prove that the prehistoric people of Thai Nguyen were the native residents who lived and died in the homeland of Thai Nguyen.

1.2. Methodology

Researches on ancient burials and remains in Vietnam from the past to the present are of a profound expertise and are mainly approached by historical and archaeological researchers. In the process of writing this article, we focus on using interdisciplinary research methods combining archaeological research with environmental studies and ethnography. Using research results of natural sciences such as: absolute chronology analysis, assessment of human and animal remains., application of dialectical and historical materialist methods in social research prehistoric.

By directly participating in excavations, researching new remains and focusing on observing and analyzing samples at the Vietnam National Museum of History were used. We have initially restored the “panorama” of the burial system with typical burial methods with burial accessories, characteristics of ancient remains in the graves associated with archaeological sites in Thai Nguyen.

2. Graves and human remains in Thai Nguyen

2.1. Graves in stone age relics discovered in Thai Nguyen

Out of the total of 30 relics discovered in Thai Nguyen, three are three graves, namely Mai Da Nguom, Con Ho cave and Khac Kiem cave (Table 1).

- *Mai Da Nguom Tomb*: Anthropologist Nguyen Lan Cuong studied the graves and human remains here and published in the article “*On three human skeletons at Mai Da Nguom (Bac Thai)*” on NPHMKCH in 1982 [4].

In grave A2, researchers have obtained three human skeletons located in the top layer containing typical relics of Hoa Binh culture. The graves are located on a plane at a depth of 0.60m.

Grave 1: head facing southeast 21°30’10”. No grave border and no embankment stone found. The dead are

buried in a side position. Legs are completely folded, arms are bent, hands are close to the neck. A fish vertebra is located between the thoracic and abdominal vertebrae.

Grave 2a and 2b. There is a possibility of a double burial because around the tomb there are embankment stones, located on the same plane. In the middle of the line dividing the two skeletons is a large stone, but looking more closely, this stone is located much lower than the others. Besides, the radius of the right hand rests on top of this stone. Therefore, it is difficult to admit that this is the embankment stone between the two tombs. But researchers are also not sure because the orientations of these two tombs do not coincide. Grave 2a: head turns to the west, north of 70°15’. The dead was buried on his side, left arm extended. The bones of the hand are close to the bones of the feet. Although the entire lower limb is lost, it can be affirmed that the thigh must definitely be flexed. Interspersed in the tomb, there are also 65 pieces of strips and pebbles attached. Grave 2b: head turns to the west, 10°45’. The dead was buried in the supine position, thighs folded, hands parallel to the spine. A large stone pressed on the femur and tibia, causing the knee to tip south. In the grave there are also many pieces of the strip.

- *Con Ho grave*: discovered, excavated and adjusted by the author, burial at Con Ho cave has stratigraphic thickness of 55cm - 100cm and is divided into two layers. The upper layer is equivalent to excavation layer 1 and 2, the lower layer is equivalent to excavation layer 3 and 4, human remains have been detected in both the upper and lower layers, in which concentrated in layer 3 with a depth of more than 40cm. In total, 27 human bone fragments have been discovered, with 2 tubular bones with flat and smooth cuts. From the actual research results, we can see that the graves in this site do not have grave borders, the dead were buried in the supine position, legs stretched out [4].

Table 1: Statistics of places with ancient relics (graves)

No	Name (Source)	Ancient relics
1	Mai Da Nguom [4]	In grave A2, researchers have obtained three human skeletons in 2 tombs, located in the top layer containing typical relics of Hoa Binh culture (floor III). The remains are buried in the side or supine position, with the limbs folded. In terms of anthropology: the remains in tombs 2a and 2b of Mai Da Nguom have ethnic characteristics close to the Australoid Melanesia race.

No	Name (Source)	Ancient relics
2	Con Ho cave [6]	Human remains in both the upper and lower layers of which are concentrated in layer 3 with a depth of more than 40cm have been discovered in layers 3 and 4. Layers 3 and 4 have been discovered. In total, 27 human bone fragments with 2 tubular bones with flat and smooth cuts have been discovered in just layer 3. From the actual research results, we can see that the graves in this site have no grave borders, the dead were buried in the supine position, legs stretched out. Based on the muscle attachment of the strong femur and tibia, it can be concluded that this is an adult male remains.
3	Khac Kiem cave [5]	The grave in Khac Kiem cave was discovered and published by French archaeologist H.Mansuy in 1925. Currently, the semi-fossil remains consisting of an incomplete skull is kept at the National History Museum. According to H.Mansuy, Khac Kiem's skull has Proto-Mélanésien or Mélanésien anthropological characteristics.

- *Grave in Khac Kiem cave*: The grave was discovered and published by the French archaeologist H.Mansuy in 1925. In the report on this site, H. Mansuy did not tell us about the state of the burial here, only mentioning that the skull remains were found here. found near the surface. Apart from the skull, no other bones have been found, so we cannot know the burial method of this grave [5].

Currently, the skull is kept at the National Museum of History.

In summary, the burial relics found in Thai Nguyen belong to the early Neolithic period. No burial remains of the Late Stone Age have been found. These burial sites usually do not have grave borders. The remains are buried in the position of lying on their side or on their back, with their limbs folded, and buried along with burial items.

2.2. Human remains in graves in Thai Nguyen

Human remains in Mai Da Nguom

Anthropologist Nguyen Lan Cuong examined the bones in Nguom as follows:

Grave 1: Most of the bones are broken, no skull fragments can be seen, but three teeth on the left side of the lower jaw are preserved: I2, C, P1. All three teeth are worn down to the dentine. Only 18 metatarsal bones and knuckles remained intact and two shin bones without bone heads.

Grave 2a: The left part of the skull is remained. The nasion point is also clearly visible at the base of the nose. The coronal joint line is not attached. The two bones of the left and right apex bones close to the longitudinal joint line are partially preserved. Only small fragments of the temporal bone and the occipital

bone are remained. Some parts of the upper jaw which are retained are a piece of jaw with teeth: Left: I1, P1, M1, M2, M3; right: I2, C, P1, P2, M1, M2, M3. Lower jaw: a half of the right jaw on which there are attached teeth: C, P1, P2, M1, M2, M3. The left jaw segment of this individual has only two teeth, M2 and M1. The upper limb consists of: a left ulna which is almost intact, the left humerus without the upper end, half of the right clavicle, and the left radius with only the bony body remaining. Only a short segment of the upper femur remains, and the two talus and heel bones are almost intact. In addition, there are 13 intact vertebrae and knuckles.

Grave 2b: The skull consists of the parietal bone and the left temporal bone connected to part of the occipital bone and the frontal bone, the remaining frontal bone is part of the orbit. The parietal temporomandibular joint line is lingual. The apex-occipital joint line in the inner eye is almost completely seamless. The frontal-parietal and sphenoid-parietal lines were fully fused both on the medial and lateral surfaces of the skull. The upper edge of the eye socket is round, the occipital mound is quite large. The other two parietal fragments in the bregma region were fused together because the medial surface of the longitudinal joint was fused. Not a single tooth left.

Upper limb bones: The bones of the arm, ulna, and right radius remain almost intact. The two outer clavicles were broken. Left arm bone lost its upper end. The left ulna is missing a segment near the body of the bone. The radius has only two intact segments. Only two talus bones and left fibula remain intact. The right pelvis is missing part of the iliac wing and lower branch of the pubic bone. The left thigh lost the lower end of the bone and part of the glomerulus. Both left and right tibia are broken only at the top two ends. In

addition, the researchers also obtained 23 phalanges and knuckles [4].

+ *Gender and age*

Grave 1: The remains of an adult, unidentifiable gender because of broken bones.

Grave 2a: Based on the wear of the teeth and the attachment of the joints of the limbs, the researchers found that the remains were of a person who is about 35-40 years old. Small mastoid, low mandibular body, so this may be the remains of a woman.

Grave 2b: Based on the hip pelvis and the remaining skull, it is likely that the remains of an old man of about 75 - 80 years old, about 1.60m tall.

+ *Burial method*: according to the researchers, the remains in all three tombs have the leg bones bent in the lying position.

+ *Race*: the remains in tombs 2a and 2b of Nguom site have racial characteristics close to the Australoid Melanesian race [4].

NGUOM CULTURAL LAYER



Human remains in Nguom site (Source: Archaeological Library of Vietnam, Notation A348)

- *Human remains of Khac Kiem cave:*

Human remains in Khac Kiem cave were researched and published by H.Mansuy in 1925. Khac Kiem skull has only the occipital bone remaining almost intact, the left parietal bone was broken at the back, a small part of the right apex, the left vertebrae, and the left half behind the frontal bone. According to H.Mansuy, because the front part of the frontal bone was destroyed, the head index could not be calculated, but looking down from the top, it seems that it also has an oval shape and the temporal region is narrowed down, and the peak humps are only slightly lower and almost times with the surface of the parietal bone. Viewed from the back, the width of the upper part of the skull is narrowed and the transverse diameter is not greater than the horizontal diameter at the base of the skull, the tail apex is very low, the skull walls are vertical, and the skull has a prominent

boat shape. According to him, Khac Kiem's skull is very long, oval, vertical wall, narrow forehead, so it is not different from the long-headed Melanésien black skulls and similar to the modern Papua skulls, they can be considered Proto-Mélanésien skulls [5].

Human remains in Con Ho cave:

Tran Thi Minh, an officer of the Institute of Archeology, analyzed human remains in Con Ho cave as follows:

Human remains in Con Ho cave were mainly discovered in the 2nd and 3rd layers of the relic. In which, the most concentration is in grade 3. Although not all the remains have been discovered in the relic due to limitations of the excavation pits, based on the location of the remains, it is possible to initially confirm that the dead person was buried in supine position, legs extended.



Human remains of Con Ho cave (Source: Author)

The specific analysis results are as follows:

+ Layer 2: calcaneus of left calcaneus, 1 piece of tibia, fibula fragment, distal end of knuckle. Bones are strong but cannot be measured or put together. These are the bones of an adult, but it is difficult to determine the gender.

+ Layer 3: The remains of only the right lower limb, including 1 part of the femoral body, the femoral

head, the distal tibia, the distal fibula, the calcaneus, the talus, the intact shinbone and some metatarsal bones: right metatarsal I and V metatarsal, right proximal I, distal end of II, III, IV. The bones are good, with a thin layer of sediment attached to the outside. Based on the muscle attachment of the strong femur, tibia, it can be concluded that this is an adult male remains.

Table 2: Some measurements of bones of the human remains in Con Ho cave

Talus bone	Right (mm)
1. 1. Length	56.4
2. 2. Width	42.87
3. Height	29.93
4. Length of pulley	36.23
5. Width of pulley	32.72
6. Length of the vertex	28.75
7. Width of the vertex	23.42
8. The length of the joint area with the calcaneus	38.05
9. Width of the joint area with the calcaneus	23.94

(According to M.A. Tran Thi Minh, an officer of the Department of Ancient Anthropology - Vietnam Institute of Archeology)

Calcaneus	Right (mm)
1. Maximum length of the calcaneus	77.84
2. Middle width	50.77
3. Minimum width of body	30.21
7. Height of heel	48.88
8. Width of the heel	32.53
9. Length of the joint area with talus	33.30
10. Width of the joint area with talus	22.29

(According to M.A. Tran Thi Minh, an officer of the Department of Ancient Anthropology - Vietnam Institute of Archeology)

Right pediphalanx (mm)	I	V
2. Biggest length	62.73	72.45
1b. Physiological length	59.38	68.70
3. The width of middle of its body	14.47	9.58
4. The height of middle of its body	13.15	12

(According to Tran Thi Minh, an officer of the Department of Ancient Anthropology - Vietnam Institute of Archeology)

Right proximal pediphalanx (mm)	I
1. The length of the pediphalanx	29.84
2 a. The maximum width of the proximal pediphalanx	20.10
3a. The maximum height of the proximal pediphalanx	14.38
2b. The maximum width of the distal pediphalanx	17.25
3b. The maximum height of the distal pediphalanx	8.44

(According to Tran Thi Minh, an officer of the Department of Ancient Anthropology - Vietnam Institute of Archeology)

Studies on ancient people in Con Ho cave have not yet revealed racial characteristics.

- *Human remains at Lang Trang*: Previously, the site of Lang Trang was in Vo Nhai district, Thai Nguyen. Since 1972, this site has belonged to Lang Son province. Lang Trang’s remains are currently kept at the National Historical Museum of Vietnam. As this relic is within the distribution range of the previous Thai Nguyen Stone Age relics, this is also an important document for our reference.

The human remains at the Lang Trang site were analyzed by anthropologist – M.A. Tran Thi Minh (Institute of Archeology) and had the following results:

Table 3: Dimensions of the upper right molars of the Lang Trang human skull (mm)

Right upper jaw	Proximal – distal diameter (P – D)	Outer – Inner diameter (O – I)
M2	9.85	11.5
M3	5.63	6.66

(According to Tran Thi Minh, an officer of the Department of Ancient Anthropology - Vietnam Institute of Archeology)

The lower jaw:

The left lower half of the jaw is covered with sediment.

The right half of the jaw has lost its snout, not covered by sediment and only C canine of this size: Outer - Inner Diameter (O - I)= 6.5 mm , Proximal – distal diameter (P – D)= 7.02 mm

The broken skull remains:

The frontal bone is nearly intact, the right parietal bone and the left part of the right temporal bone are broken. The mastoid was broken in half in longitudinal section with a height of 18.46 mm. The bones are relatively strong.

The frontal, maxillary and mandibular bones were crushed and attached to a block, covered with thick red-brown sediments of mollusk shells, mainly stream snails.

Upper jaw: The right upper half has the following teeth: P1, P2, M1, M2, M3. Left upper half of jaw: I1, I2, C, P2, M1, M2. However, due to the emulsion, only the right M2, M3 teeth can be measured.

Based on the canine formula as follows:

$$X = - 0.003 - 0.83 X1 + 1.83 X2 ,$$

In which X1= O – I Diameter, X2= P – X Diameter

$$X > 6.29 \rightarrow \text{male}, X < 6.29 \rightarrow \text{female}$$

$$= -0.003 - 0.83x 6.5 + 1.83x 7.02$$

$$= 7.45 > 6.29 \rightarrow \text{male human remains}$$

Based on the M3 teeth and the mandibular canine calculation formula, it can be concluded that these are male remains, in adulthood. Studies on ancient people in Lang Trang have not yet revealed racial characteristics.

In summary, the remains found in Thai Nguyen belong to the Early Neolithic period with anthropological characteristics of Proto - Melanesian or Melanesian (Nguom, Nghinh Tac). This research result is quite consistent with the studies on the owners of Bac Son culture published by previous researchers.

3. Conclusion

The burials in Thai Nguyen province have contributed to clarifying the custom of the burial customs and the concept of the afterlife of the primitive people in Thai Nguyen. The burials are characterized by the customs of the residents of Hoa Binh - Bac Son in the Neolithic period. The discovery of burial graves in the cultural layer is important findings for archaeological excavations. The graves at Mai Da Nguom, Khac Kiem cave, and Con Ho cave have the burial characteristics of Hoa Binh - Bac Son residents, the dead are smeared with ocher and buried with daily labor tools to express the concept of resurrection in the next life.

Although the human remains are incomplete, they have proved that the Proto - Melanesian or Melanesian anthropological characteristics are quite suitable for the owners of the Bac Son inhabitants. This research result also contributes to proving the view that Nguom is one of the origins of Bac Son culture. This represents the continuation of the development path of Nguom industry - the tool-making industry from shards which was integrated into the Bac Son Neolithic tool-making industry in the Northeast region of Vietnam [3].

These precious archaeological findings have been highly appreciated by experts and are one of the outstanding marks of Vietnamese archeology. This raises the issue of the need for appropriate policies to conserve and exploit the value of these relics for

tourism for the purpose of linking conservation and sustainable development. To achieve that goal, it needs the cooperation of a large number of Thai Nguyen people and the attention of ministries and industries throughout the country.

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