

Man Bac site

A Neolithic settlement in Northern Vietnam

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Abstract:

Man Bac site is located in 20°08'085" North latitude and 105°59'025" (c. from above and under 4.000BP to above, under 3.5000BP), Bach Lien hamlet, Yen Thanh commune, Yen Mo district Ninh Binh province. Man Bac site has been excavated five seasons from 1999, 2001, 2004 - 2005, 2005 and 2007.

Man Bac site stratigraphy has been three cultures layer with two develop periods. Among these sites, Man Bac site has been excavated five with the total area of 149,8m², 105 burial sites with 107 individuals were found, like this to now area average 1,427m²/1 burial and 1,4m²/1 individual. In the first culture period has been 3 individuals and culture second period has been 104 individuals.

The spiritual life of the Man Bac inhabitants is also very rich; this is shown clearly through the funeral goods in the burials such as: beads, bracelets, earrings, ceramics and cypridae snails (such as ancient money) which are considered to be used as primitive money as far as the scientists are concerned. Therefore, the ancient Man Bac inhabitants had the perception of the living life and dead life that the deceased would live in the same way as when they were alive. Besides funeral goods could be help us to know Man Bac ancient social organization.

After 10 years research Man Bac archaeological site, archaeologists were found vestiges architecture relation to the Man Bac residents houses like post holes and over fire soil foundations.

As far as we know, Man Bac site is located in Ninh Binh province, the "Inter-culture" location between the Hong river plains and delta and coastal plains of Ma and Chu rivers.

Through Archaeological artifacts stone and potteries at Man Bac site, we are recognizing Man Bac early period were co-development from Phung Nguyen Culture (Go Bong, Xom Ren), Con Chan Tien and Hoa Loc Culture. Trang Kenh, Dau Ram (early period culture) was bring aspect cultural to Man Bac area to live with autochthons like Con Chan Tien, Hoa Loc

and Phung Nguyen were live before made aspect cultural in late period.

The Man Bac inhabitants were communicative self ling in the coastal area. The main living sources might have been cultivation, wet-rice growing, along with raising cattle's, pig and chicken. The Man Bac inhabitants might have developed fishing, exploring marine, brackish of fresh water products, as well as hunting animals and gathering vegetation. Ceramic handicrafts play an import and rode, with other activities as stone tool making, thread twisting textile and knitting. On the basics of agriculture development, the Man Bac inhabitants succeeded in exploiting and expanding to the sea in Ninh Binh province. The owners of the Man Bac site had a richly-spiritual life with their original products in a normal life, dong honor to themselves and serving their religion. Those are various types of ceramics, decorative motifs, bracelets, stone earrings or exotic earthen animals.

With economic development Man Bac residents was inter-culture with other dwellers area such as Kalumpang west center in Sulawesi Island, Indonesia or pottery technical like potteries anvil in High land, South Vietnam, Northeast Khorat Plateau in Thailand and South Korea ect.

The Man Bac is where such various factors as the culture from Late Neolithic to Early Metal Age in the coastal area, the plains of Hong River and Ma, Chu rivers deltas concentrate. This reflects through the assemblages of stone tools and ceramics.

If we consider the Phung Nguyen culture as a start of the Red rives civilization, it might be possible to see the Man Bac site as a factor helping to create physiognomy of that civilization. The characteristics and concentration of Man Bac culture factors further confirm Phung Nguyen culture expansion to the sea and vice versa; The Northeast costal residents on way go to South, the Con Chan Tien, Hoa Loc tribes have moved deeper into inland. At that time, the settlement scattered by come tribes with various cultures might have been started. That culture accumulation might have been vole accelerated.

I. Introduction:

Ninh Binh province is located in 20⁰14' North latitude and 105⁰59' East longitude, with the area of 1382,0km², the North is adjacent to Ha Nam province, the West and the South is adjacent to Thanh Hoa province, the East is next to Nam Dinh province. Geologically, the Tam Diep area belongs to the Southwest border of the Hong river plains and delta, and it is the transitional area between the mountainous area and the plains. There are 3 types of major terrains: low hills and mountains, limestone mountains and plains. The plains are set up by mixed sediments: sand, clay powder from various sources: river, mixed river - sea, sea. Ninh Binh is next to mountains and nearby the sea and is the doorway for trading between the roads on land and waterways. Ninh Binh includes Day River, the main branch of Hong

River, which used to be the important waterway axis in Pre- historical period and history between the mountainous areas and the plateaus, the plains and seas, the North plains and delta and the central area. In the Ha Nam, Nam Dinh and Ninh Binh provinces, there are a lot of the remained hills and mountains from 50m to 100m high, with numerous forms. At the feet of these limestone mountains, there are a lot of clear traces of Middle Holocene sea waves, the temperature in the region is uniform, with the average annual temperature of 23⁰C, and the average temperature is 16⁰C in January and 29⁰C in July. The maximum photometric temperature is 40,1⁰C and minimum is 6.3⁰C. The average annual rain amount is 1.400mm - 1.600mm. The greatest rain amount measured in Nam Dinh province in 1994 was 2.754 mm and the least rain measured there in 1957 was 978mm.

The French archaeologist, M.Colani, is the first founder and excavator of the workshop site of bracelet manufacture at Cho Ganh cave in 1924 and 3 prehistorically sites: Trung Doi, Yen Luong, and Nham cave at Nho Quan district, Ninh Binh province, which were excavated in November 1927. Based on the existence of crudely chipped tools, she supposed that Trung Doi and Yen Luong were the sites of Paleolithic inhabitants. Nham cave is classified to the Hoa Binh culture due to the discovery of ground axes, almond axes and a few ceramics with weave designs. Based on such data that M.Colani divided The Hoa Binh culture into 3 periods: Paleolithic, Mesolithic and Neolithic. In which, Trung Doi and Yen Luong sites belong to Paleolithic, Nham Cave belongs to Mesolithic.

In 1941, J.Fromaget excavated at Thung Lang Cave, at Nam Son precinct, 3km away southeastward from Tam Diep town in Ninh Binh province. A panda's tooth and a fossil tooth of Homo erectus were found. However, these findings are missing now. In 2001, the archaeologists from the Vietnam Institute of Archaeology had a test digging at Thung Lang Cave and stated that it is a rock shelter rather than a cave. At the eastern corner, in a hole, they found a lot of elephant's teeth. According to the researchers, these teeth might be the artifacts left by J.Fromaget.

During 1966 - 1977, the Institute of Archaeology excavated Dang Cave and Moc Long Rock shelter and had a test - digging at Lai Cave of Cuc Phuong commune, Nho Quan district, Ninh Binh province.

Until 1970s - 1980s, in Ninh Binh there weren't any new Pre- historical sites found, but the concentration was on the excavations and researches of the sites from the Dinh - Le periods. In 1990s, Pre- historical sites in Ninh Binh started to be noticed and as far as our statistics, 18 cave sites and 3 open - air sites have been found. That is excavations: Man Bac (Ha Van Phung, Bui Thu Phuong, Ngo Thi Lan 1999; Ha Van Phung, Nishimura Masanari, Trinh Hoang Hiep and Truong Huu Nghia 2001); Dong Vuon (Ha Van Phung, Trinh Hoang Hiep et al. 2002) and Sao Cave (Dang Cong Nga 2002; Trinh Hoang Hiep 2007, Ha Van Phung, Trinh Hoang hiep, Nguyen Cao Tan 2007).

Besides excavations and around in this time some archaeological site had a surveys and test excavations in Nho Quan commune, Gia Vien commune and Tam Diep town. In the excavations and surveys and test excavations above was founds many archaeological site: Ba Mountain, Dao Cave, De Cave, But Cave, Mo Cave...and have some articles for the Pre-prohistorical Archaeological of Ninh Binh province such as: Dang Cong Nga, Nguyen Cao Tan 2001; Nguyen Van Lu, Nguyen Cao Tan 2001; Nguyen Van Lu, Nguyen Cao Tan 2002; Nguyen Van Lu et al 2002; Nguyen Duc Long et al 2002; Nguyen Gia Doi et al 2002; Trinh Hoang Hiep 2002; Trinh Hoang Hiep et al 2002; Trinh Hoang Hiep et al 2003; Trinh Hoang Hiep et al 2004; Trinh Hoang Hiep 2004; Trinh Hoang Hiep 2007; Trinh Hoang Hiep 2010).

II. Man Bac site and Relationship with the Pre-Dong Son Cultures in the Northern of Hong River Delta:

Man Bac site is located in $20^{\circ}08'085''$ North latitude and $105^{\circ}59'025''$, Bach Lien hamlet, Yen Thanh commune, Yen Mo district Ninh Binh province. Man Bac site has been excavated five seasons of the 1999, 2001, 2004-2005, 2005 and 2007.

Among these sites, Man Bac site has been excavated five with the total area of 149.8m^2 , 105 burial sites with 107 individuals were found, like this to now area average $1.4\text{m}^2/1$ burial.

This is the archaeological relics have unique burial tomb was discovered in the province of Ninh Binh province in particular and southern Hong River Delta in general. Relics buried tombs are distributed in all three cultural layers. The number of tomb relics buried in the high concentration of cultural layers III, also in the cultural layer I and II of the cultural relics of burial tomb accounting numbers less.

It is the only site with such a lot of burials found in Ninh Binh in particular and in the south of the Hong River plain and delta in general. In terms of anthropology, in comparison, The Man Bac female skull is found close to the Luo Bo Wan skulls (Guangxi of Early stage of Western Xi Han) and modern skulls, but quite far from the Neolithic skull at Hua district in China and West Australian aborigines. The analysis result of the male skull is similar (Truong Huu Nghia, Nguyen Lan Cuong, Nguyen Kim Thuy, Trinh Hoang Hiep, Pham Thi Hoa, Nguyen Van Vi 2002). The skulls are characterized by relatively long and flat faces. The multivariate comparisons using cranial and dental metrics demonstrate a close affinity with the Neolithic or later Zhou and Han period samples from the Yangzi Basin in South China, suggesting the arrival of new immigrants from somewhere in this region. The Man Bac skeletons support the "immigration hypothesis" on the population history of Southeast Asia (Hirofumi Matsumura, Yukio Dodo, Wataru Takigawa, Nguyen Lan Cuong, Nguyen Kim Thuy, Marc F.Oxenham 2006).

The spiritual life of the Man Bac inhabitants is also very rich; this is shown clearly

through the funeral goods in the burials such as: beads, bracelets, earrings, ceramics and Cypridae snails which are considered to be used as primitive money as far as the scientists are concerned. Therefore, the ancient Man Bac inhabitants had the perception of the living life and dead life that the deceased would live in the same way as when they were alive.

As far as we know, Man Bac site is located in Ninh Binh province, the “Inter-culture” location between the Hong river plains and delta and coastal plains of Ma and Chu Rivers. The Man Bac inhabitants in the early stage were related to the Pre-Dong Son inhabitants groups in the Hong River plain and delta, the Phung Nguyen culture (in Go Bong stage), the inhabitants of the Hoa Loc, Con Chan Tien cultures in the coastal plains of the Ma, Chu Rivers. In the late stage, the ancient Man Bac inhabitants were related to the inland Phung Nguyen culture (Phung Nguyen stage) and the inhabitants in the Northeast Coastal area at Trang Kenh (Hai Phong city) and Dau Ram (early period culture) in Quang Ninh province.

In general, the Pre-prohistorical inhabitants settled for a long time and had obvious mountainous direction. They had the relationship and transaction with the inhabitants of the communities in other areas such as: in the Hong River plain and delta, coastal plains of the Ma and Chu Rivers and Northeast coastal plains... Those cultural relations are proved through the assemblages of the found artifacts.

As for dates, these site groups might be similar; they are representatives for the cultural physiognomy in the Early Neolithic of Ninh Binh in the common regional background. If there is a particular and large scale study project on Ninh Binh land, it will enable us to further study of every site group with their typical cultural characteristics shown through strata structure and cultural remains in the caves or open-air site there. They are important archaeological data to study the evolution road of the Pre-prohistorical culture in Ninh Binh in particular, contributing to the study of the Vietnamese Bronze Age in general.

The rest haven't been archaeologically excavated on a large scale, but there are just small test - dug pits with the area of $1\text{m}^2 - 2\text{m}^2$ at some caves. However, from such small pits for investigation found fairly rich faunal and Homo sapiens sapiens fossils, or Post-Hoa Binhnian Neolithic traces, which doesn't belong to the Da But culture though, they are affected by the pervasive Da But culture. In general, Post- Hoa Binh Neolithic culture here might be later than the early stage of Da But culture, equivalent to its middle and late stages. It is because of the lack of systematic excavations and researches, the knowledge of Ninh Binh archaeology is diffused and limited and so far there haven't been any projects that generalize the Pre- prohistorical periods in this area.

III. Conclusion:

The Man Bac inhabitants were communicative self ling in the coastal area. The main

living sources might have been cultivation, wet-rice growing, along with raising cattle's, pig and chicken. The Man Bac inhabitants might have developed fishing, exploring marine, brackish of fresh water products, as well as hunting animals and gathering vegetation. Ceramic handicrafts play an import and role, with other activities as stone tool making, thread twisting textile and knitting.

- Through specific stone relics and pottery, we believe the early Man Bac site was developed from source cultures of Phung Nguyen (Go Bong and Xom Ren sites), Con Chan Tien Site and Hoa Loc. If Con Chan Tien was the Go Bong emigrated to the Con Chan Tien elements added in bold monuments Man Bac through pottery characteristic of the relics from early to late development, participation and Hoa Loc weak Phung Nguyen than.

- Group of residents from the northeast coast of Trang Kenh, Dau Ram (early period culture) traveled by sea bringing progress to the south and their own nuances to Man Bac. Also, indigenous peoples with residential land lived there before the Con Chan Tien, Hoa Loc, Phung Nguyen to develop culture in the late stages.

- However Man Bac Site also has relationships with a cultures in difference countries of a the region.

- On the basics of agriculture development, the Man Bac inhabitants succeeded in exploiting and expanding to the sea in Ninh Binh province. The owners of the Man Bac site had a richly-spiritual life with their original products in a normal life, dong honor to themselves and serving their religion. Those are various types of ceramics, decorative motifs, bracelets, stone earrings or exotic earthen animals.

- The Man Bac is where such various factors as the culture from Late Neolithic to Early Metal Age in the coastal area, the plains of Red river and Ma, Chu rivers deltas concentrate. This reflects through the assemblages of stone tools and ceramics. However, the Man Bac site also has its own features, which are ceramics with type I characters, with vessel-typed mouths and decorative motifs from simple to complicated ones. The mouth types and decorative motif were inherited from the rim to the body of the vessel, together with complicated decorative motifs.

- Man Bac (lower layer) and Hoa Loc can be placed prior to the Phung Nguyen phase. One C14 date from Ma Dong is 4.145 BP and it is older than the any other C14 date available from the Phung Nguyen site.

- If we consider the Phung Nguyen culture as a start of the Hong Rives civilization, it might be possible to see the Man Bac site as a factor helping to create physiognomy of that civilization. The characteristics and concentration of Man Bac culture factors further confirm Phung Nguyen culture expansion to the sea and vice versa; The Hoa Loc culture tribes have moved deeper into inland. At that time, the settlement scattered by come tribes with various cultures might have been started. That culture accumulation might have been vole accelerated.

Reference

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- Bui Minh Tri, Nguyen Cao Tan 1998. Di chi cu tru thoi so su lan dau tien duoc phat hien o Ninh Binh, NPHM ve KCH nam 1997 (New Archaeological discoveries in 1997), Hanoi, Social Sciences Publishing House, pages: 224 - 225.
- Bui Van Loat, Nguyen Quang Mien 2002. Xac dinh tuoi nhiet phat quang lop tram tich duoi di chi khao co hoc Man Bac (Ninh Binh), NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001), Hanoi, Social Sciences Publishing House, pages: 65 - 69.
- Bui Van Liem and Ha Van Phung 1988. Di chi Phu Luong: qua hai lan khai quat. KCH so 4/1988, pages: 32-43.
- Bui Vinh va Dao Quy Canh 1988. Them nhung tai lieu moi ve nui Le va nui Ho (Ha Nam Ninh), NPHM ve KCH nam 1987 (New Archaeological discoveries in 1987), Hanoi, Social Sciences Publishing House, pages 32 - 34.
- Bui Vinh 2001. Van hoa Da But va qua trinh chiem linh dong bang va ven bien Thanh Hoa -Ninh Binh, De tai cap Bo 2001.
- Bui Van Liem and Pham Quoc Quan 1991. Di chi Thanh Den (Ha Noi). VBTLSVN TBKH 1991, pages: 103-124.
- Bui Vinh 1991. The Da But Culture in the stone age of Vietnam. BIPPA 10, pages: 127-131.
- Bui Vinh and Nguyen Cuong 1997. Van hoa Mai Pha sau khai quat 1996 Lang Son. KCH so 2/1997, pages: 40-54.
- Bui Vinh and Nguyen Khac Su 1978. Khai quat Go Trung (Thanh Hoa), NPHM ve KCH nam 1977 (New Archaeological discoveries in 1977), Hanoi, Social Sciences Publishing House, pages: 56-59.
- Do Van Ninh 2002. Van de chuc nang hoa te cua oc, NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001), Hanoi, Social Sciences Publishing House, pages 801 - 802.
- Fromaget J. L'Indochina Francaise, sa structure Géologique, sĐ roches, ses mine et leurs relations possible avec la tectonique. BSGI, Vol 25: 2 - 63.
- Ha Huu Nga 1984. Thoi dai da moi Viet Nam, moi truong, van hoa va ma hinh tong quat, NPHM ve KCH nam 1983 (New Archaeological discoveries in 1983), Hanoi, Social Sciences Publishing House, page: 74.
- Ha Huu Nga 1988. Thoi dai Da moi Viet Nam: Ban chat va khuynh huong, NPHM ve KCH nam 1987 (New Archaeological discoveries in 1987), Hanoi, Social Sciences Publishing House, page: 37.
- Ha Huu Nga 1990. Su hinh thanh dong bang va nhip dieu cua qua trinh da moi hoa o Viet Nam, NPHM ve KCH nam 1989 (New Archaeological discoveries in 1989), Hanoi, Social Sciences Publishing House, page: 55.
- Ha Huu nga 2001. Nhay cam moi truong va nhung bien doi co van hoa tai khu vuc Vinh Ha Long, NPHM ve KCH nam 2000 (New Archaeological discoveries in 2000), Hanoi, Social Sciences Publishing House, pages: 90.
- Ha Huu Nga 2004. Khao co hoc dong Bac Viet Nam tu nhung he thong sinh thai nhan van toi cac cau truc xa hoi tien nha nuoc, Hoi nghi Quoc te Mot the ky Khao co hoc Vietnam - Nhung thanh tuu va Trien Vong (International conference One century of Viet Nam Archaeology: Achievement, Orientation and Prospect in 2004), Hanoi, Social Sciences Publishing House, Volume 1. papes:117 - 139.

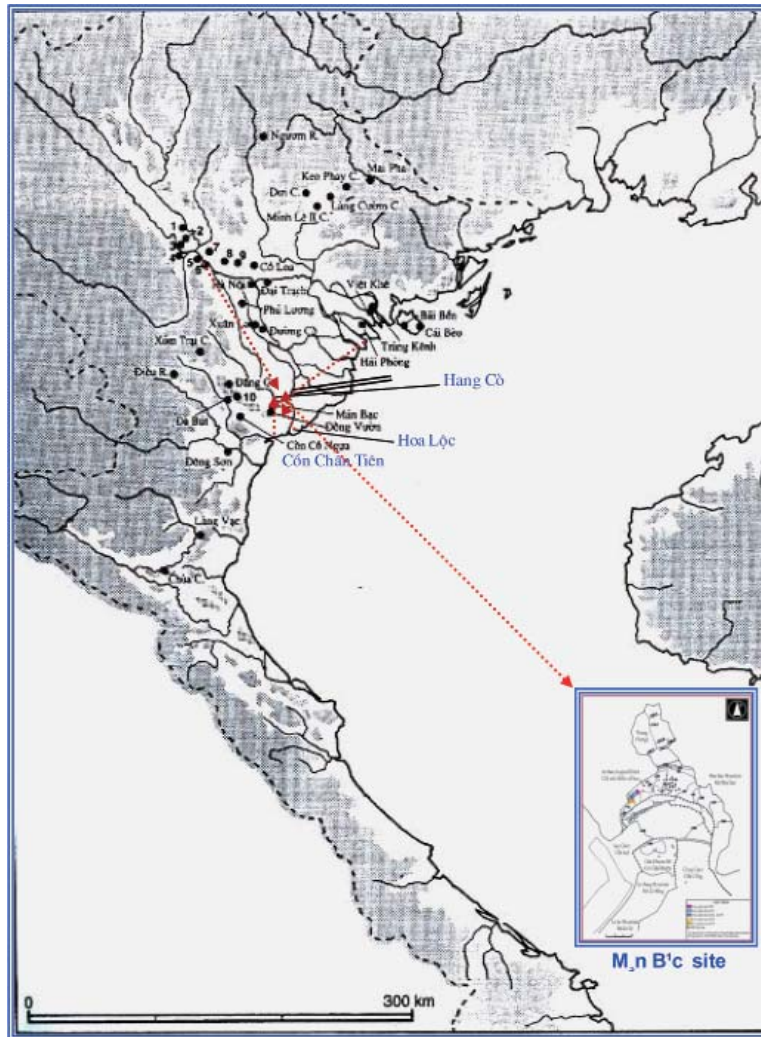
- Ha Huu Nga 2005. Khong gian xa hoi Da But (Truong hop di chi Con Co Ngua), Khao co hoc (2), pages: 3 - 14.
- Ha Van Phung and Nguyen Duy Ty 1982. Di chi khao co hoc Go Mun. NXBKHXH, Ha Noi.
- Ha Van Phung 1986. Di chi Phu Luong (Ha Son Binh). KCH so 2/1986, pages: 27-41.
- Ha Van Phung 1996. Van hoa Go Mun. NXBKHXH, Ha Noi.
- Ha Van Phung 2001. Di tich Man Bac: Tu lieu va nhan thuc. KCH so 1/2001, pages: 17-46.
- Ha Van Phung, Trinh Hoang Hiep, Quang Van Dung, Ma Thi Hien 2003. Ket qua dieu tra va tham sat dia diem Bai Soi tinh Tuyen Quang (Report of survey and test excavation at Bai Soi site Tuyen Quang province), NPHM ve KCH nam 2004 (New Archaeological discoveries in 2004), Hanoi, Social Sciences Publishing House, pages: 109 - 111.
- Ha Van Phung, Trinh Hoang Hiep 2004. Vi tri di chi Man Bac va moi quan he cua no qua tai lieu gom (Position of Man Bac site and relationship by potteries documents). Tap chi KCH so 6 nam 2004 (Archaeology Magazine N° 6), Hanoi, Social Sciences Publishing House, pages: 13 - 48.
- Ha Van Tan 1998. Khao co hoc Viet Nam tap I: Thoi dai Da Viet Nam. NXBKHXH, Ha Noi.
- Ha Van Tan 1999. Khao co hoc Viet Nam tap II: Thoi dai Kim khi Viet Nam. NXBKHXH, Ha Noi.
- Ha Van Tan 2002. Khao co hoc Viet Nam tap III: Khao co hoc lich su Viet Nam. NXBKHXH, Ha Noi.
- Ha Van Tan 1997. Theo dau cac van hoa co, Hanoi, Social Sciences Publishing House, pages 597 - 598.
- Han Van Khan 1976. Thu phan giai doan van hoa Phung Nguyen qua tai lieu gom, Khao co hoc 19/1976, pages 5 - 22.
- Han Van Khan 1996. Do gom Tien su va So su o Bac Bo va Bac Trung Bo Viet Nam: Loai hinh, hoa van va ky thuat che tao, Hanoi National University. Thu vien Khoa Lich su (Library of Faculty of History). pages 16 - 24, Ma so B94. 05. 03.
- Hoang Xuan Chinh, Nguyen Ngoc Bich 1978. Di chi khao co hoc Phung Nguyen, Hanoi, Social Sciences Publishing House, Ha Noi 1978, pages: 103 - 104.
- Hoang Xuan Chinh 1966. Bao cao khai quat Hang Dang (Cuc Phuong, Ninh Binh). Thu vien Vien KCH (Library of Institute of Archaeology).
- Hoang Xuan Chinh 1968. Bao cao khai quat di chi Lung Hoa. NXBKHXH.
- Hoang Xuan Chinh 1989. Van hoa Hoa Binh o Viet Nam. Thu vien Vien Khao Co hoc (Library of Institute of Archaeology).
- M, Colani, Notice sur la Prehistoire du Tonkin, Bulletin du Service Géologique de l'Indochine, XVII, 23 - 37.
- M. Nishimura 2002. Ve hien vet da, do xuong va vo nhuyen the o di chi Man Bac, khai quat lan thu hai, NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001), Hanoi, Social Sciences Publishing House, pages: 235 - 240.
- Nishimura M. 1992. Recent developments and problems of the Hoabinhian study. JSEAA N°12, pages: 17-37.
- Nishimura M. 2001. Reexamination of the Lung Khe Citadel in the Red River Delta. Southeast Asia-history and culture. N°30, pages: 46-71.
- Nishimura M. 2002. Chronology of the Neolithic Age in the southern Vietnam. Journal of Southeast Asian Archaeology 22, pages: 22-57
- Nishimura and Nishino 2003. Considerations on the changes of sites distribution pattern in the Red River Plain, pages. 267-309
- Nishimura M. and Nishino N.2003. Data collection of archaeological sites in the Red River Plain,

- Vietnam. Scientific report submitted to the Ministry of Education and Science.
- Nishimura M 2005. Chronological framework from the Palaeolithic to Iron Age in the Red River Plain and the surrounding.
- Nguyen Lan Cuong 2001. Ve di cot nguoi co o dia diem Man Bac - Ninh Binh, Khao co hoc N⁰1/2001, pages: 47 - 58.
- Nguyen Lan Cuong 2003. Tuc nho rang o nguoi co cua Viet Nam, NPHM ve KCH nam 2002 (New Archaeological discoveries in 2002), Hanoi, Social Sciences Publishing House.
- Nguyen Dich Di, Dia chat de tu Viet Nam va danh gia tiem nang khoang san lien quan, Ha Noi 1995.
- Nguyen Gia Doi and Bui Vinh 1988. Hang Doi, Suy nghi them ve van hoa Bac Son. Khao co hoc 1-2/1988, pages: 12-19.
- Nguyen Kim Dung 1986. Bao cao khai quat công xuong Trang Kenh lan thu II. Thu vien Vien Khao Co hoc (Library of Institute of Archaeology).
- Nguyen Khac Su 2003. Van hoa Da But voi van de phan vung kinh te - xa hoi dau tien trong thoi Tien su Viet Nam, Khao co hoc N⁰3/2003, pages 88 - 97.
- Nguyen Kim Thuy 2002. Nghe lan - su khai thac tai nguoi song, bien qua chung cu xuong nguoi co o Man Bac (Ninh Binh), NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001), Hanoi, Social Sciences Publishing House, pages: 232 - 235.
- Nguyen Thi Mai Huong, Pham Van Hai 1999. Ket qua phan tich bao tu phan hoa di chi Man Bac - Yen Thanh, Yen Mo, Ninh Binh, NPHM ve KCH nam 1998 (New Archaeological discoveries in 1998), Hanoi, Social Sciences Publishing House, pages: 209 - 213.
- Nguyen Viet 2003. Van hoa Da But ung xu Hoabinhian truoc bien tien Holocene trung, Khao co hoc N⁰3/2003, pages 18 - 30.
- Pham Ly Huong and Nguyen Quang Mien 2001. Cac ket qua xac dinh nien dai bang phuong phap Radiocarbon o Viet Nam va mot so nhan xet. KCH so 3/2001, pages: 81-101.
- Pham Ly Huong (Vien KCH), Tran Thi Sau (Vien Dia chat) 1999. Phan tich thach hoc mau gom Man Bac, NPHM ve KCH nam 1998 (New Archaeological discoveries in 1998), Hanoi, Social Sciences Publishing House, pages: 207 - 209.
- Pham Ly Huong, Nguyen Quang Mien 2000. Cac ket qua xac dinh nien dai bang phuong phap Radiocarbon o Viet Nam va mot so nhan xet, Thu vien Vien Khao co hoc (Library of Institute of Archaeology).
- Pham Minh Huyen. Bao cao khai quat Con Chan Tien, Thu vien Vien Khao co hoc (Library of Institute of Archaeology).
- Pham Minh Huyen and Nishimura Masanari 2002. Excavation of Dai Trach: a Bronze Age settlement site in the Red River Plain. Paper presented at the 16th Congress of the Indo-Pacific Prehistoric Association. 10th Sep. Taipei.
- Pham Van Dau 1995. Van hoa Hoa Loc va vi tri cua no trong thoi dai dong thau Bac Viet Nam, Luan an PTS. Khoa hoc Lich su 1995, Tu lieu Vien Khao co hoc (Library of Institute of Archaeology), TL. 464.
- Pham Van Kinh va Quang Van Cay 1975. Ket qua nghien cuu hai dia diem Hoa Loc va Phu Loc, NPHM ve KCH nam 1974 (New Archaeological discoveries in 1974), Hanoi, Social Sciences Publishing House, pages 120 - 126.
- T.Chung 2001. On Prehistoric Stone Bark Cloth Beaters in East Asia, Hoi nghi Quoc te Mot the ky Khao co hoc Vietnam - Nhung thanh tuu va Trien Vong (International conference One century of

- Viet Nam Archaeology: Achievement, Orientation and Prospect in 2004), Hanoi, Social Sciences Publishing House, Volume 1.
- Tran Quoc Vuong 2003. Some new viewpoints and re-thinking about the Chinese Domination in Vietnam. Paper presented at the International conference of Eastern Studies. 16th, May, 2003, Tokyo.
- Trinh Hoang Hiep, Pham Thi Ninh 1999. Nghien cuu do gom di chi Dau Ram (Quang Ninh) (Study of Ceramics of Dau Ram site Quang Ninh Province), NPHM ve KCH nam 1998 (New Archaeological discoveries in 1998), Hanoi, Social Sciences Publishing House, pages: 157 - 159.
- Trinh Hoang Hiep, Ha Van Phung 2001. Phat hien khao co hoc tai xa Kim Thai (Nam Dinh) (Archaeological discoveries at Kim Thai Commune (Nam Dinh Province), NPHM ve KCH nam 2000 (New Archaeological discoveries in 2000), Hanoi, Social Sciences Publishing House, page: 613.
- Trinh Hoang Hiep, Ha Van Phung, Mai Khanh 2001. Vet tich van hoa Hoa Binh o tinh Ha Nam (Vestiges of Hoa Binh culture in Ha Nam province), NPHM ve KCH nam 2000 (New Archaeological discoveries in 2000), Hanoi, Social Sciences Publishing House, pages: 127 - 128.
- Trinh Hoang Hiep, Ha Van Phung, Mai Khanh, Le Xuan Huy 2001. Ket qua dao tham sat o thon Thanh Son xa Bong Lang tinh Ha Nam (Results of test - digging at Thanh Son Hamlet Bong Lang commune - Ha Nam province), NPHM ve KCH nam 2000 (New Archaeological discoveries in 2000), Hanoi, Social Sciences Publishing House, page 276.
- Trinh Hoang Hiep, Pham Thi Ninh 2004. Do gom di chi Dau Ram trong he thong gom co vung ven bien Dong Bac Viet Nam (Ceramics of Dau Ram site in system of Ancient ceramics in Northeast coast of Viet Nam), Hoi nghi Quoc te Mot the ky Khao co hoc Vietnam - Nhung thanh tuu va Trien Vong (International conference One century of Vietnam Archaeology: Achievement, Orientation and Prospect in 2001), Hanoi, Social Sciences Publishing House, Volume 1, page: 492 - 523.
- Trinh Hoang Hiep, Ha Van Phung 2001. Bao cao ket qua dieu tra va tham sat o phia Nam Dong bang chau tho Song Hong (Report survey and test excavation in the South of Red River Delta), Thu Vien Vien Khao Co hoc (Library of Institute of Archaeology).
- Trinh Hoang Hiep, Ha Van Phung, Truong Huu Nghia, Ha Manh Thang and Nguyen Cao Tan 2001- 2002. Bao cao ket qua dieu tra va tham sat o di chi Dong Vuon tinh Ninh Binh (Report survey and test excavation at Dong Vuon site in Ninh Binh province), Thu Vien Vien Khao Co hoc (Library of Institute of Archaeology).
- Trinh Hoang Hiep, Ha Van Phung, Truong Huu Nghia, Ha Manh Thang and Nguyen Cao Tan 2002. Bao cao ket qua khai quat di chi Dong Vuon lan thu nhat o tinh Ninh Binh (Report excavation at Dong Vuon site 1st in Ninh Binh province), NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001). Hanoi, Social Sciences Publishing House, pages: 105 - 108.
- Trinh Hoang Hiep, Ha Van Phung 2003. Di chi Dong Vuon - tu lieu va nhan thuc (Dong Vuon site- Data and perception), Tap chi KCH so 1 (Archaeology Magazine N^o 1), Hanoi, Social Sciences Publishing House, pages 22 - 42.
- Trinh Hoang Hiep 2002. Do gom di chi Dong Vuon qua lan khai quat khao co hoc lan thu nhat (Potteries of Dong Vuon site has pass excavation 1st), NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001), Hanoi, Social Sciences Publishing House, pages: 130 - 136.
- Trinh Hoang Hiep, Ha Van Phung, Truong Huu Nghia, Nishimura Masanari, Nguyen Cao Tan 2002. Ket qua khai quat lan thu hai di chi Man Bac tinh Ninh Binh (Report of second excavation at Man Bac site (Ninh Binh province), NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001),

- Hanoi, Social Sciences Publishing House, pages: 156 - 158.
- Trinh Hoang Hiep 2005. Doi song vat chat va tinh than cua cu dan co Man Bac (Material life and Intellectual life of the Man Bac inhabitants), NPHM ve KCH nam 2004 (New Archaeological discoveries in 2004), Hanoi, Social Sciences Publishing House, pages: 294 - 295.
- Trinh Hoang Hiep 2004. Man Bac site and Relationship with the Pre-Dong Son Cultures in the South of Red River Delta. Master thesis of Social Science and Humanities of Hanoi National University. Thu vien Vien Khao Co hoc (Library of Institute of Archaeology).
- Trinh Hoang Hiep 2010. Man Bac site (Dissertation). Thu vien Vien Khao Co hoc (Library of Institute of Archaeology).
- Trinh Hoang Hiep 2006. Cau truc dia tang di tich Man Bac sau 4 mua khai quat va tham sat (Study the structure of stratigraphy at Man Bac site after four excavation Seasons), NPHM ve KCH nam 2005 (New Archaeological discoveries in 2005).
- Trinh Hoang Hiep, Lai Van Toi 2006. Ket qua dao tham sat lan thu 4 di tich Man Bac tinh Ninh Binh (Results of four test excavation at Man Bac site (Ninh Binh province), NPHM ve KCH nam 2005 (New Archaeological discoveries in 2005).
- Truong Huu Nghia, Nguyen Lan Cuong, Nguyen Kim Thuy, Trinh Hoang Hiep, Pham Thi Hoa, Nguyen Van Vi 2002. Di cot nguoi co Man Bac qua lan khai quat thu hai (Remains ancient of the human race in second excavation at Man Bac site), NPHM ve KCH nam 2001 (New Archaeological discoveries in 2001), Hanoi, Social Sciences Publishing House, pages: 159 - 167.
- Vu Quang Lan, Hoang Van Thuc 1999. Ve cac tram tich de tu vung Tam Diep, NPHM ve KCH nam 1998 (New Archaeological discoveries in 1998), Hanoi, Social Sciences Publishing House, pages: 49 - 51.
- Vu Quang Lan, Nguyen Ba Hung 2000. Vai net ve moi quan he giua cac dac diem dia chat - dia mao voi cac di chi khao co hoc o vung do thi Ninh Binh, NPHM ve KCH nam 1999 (New Archaeological discoveries in 1999), Hanoi, Social Sciences Publishing House, pages: 32 - 35.
- Vu Tu Lap, Tran Quang Ngai 1970. Phan vung dia ly tu nhien lanh tho Viet Nam, Nxb KHKT, Ha Noi 1970, pages 162 - 163.
- Yi Seonbok 2003. Report of the Hoa Binh project 2003: AMS dates from some archaeological sites in Vietnam. NPHM ve KCH nam 2002 (New Archaeological discoveries in 2002), Hanoi, Social Sciences Publishing House.
- MarcFOxenham, HirofumiMatsamura Kate Domett, Nguyen Kim Dung, Nguyen Lan Cuong, Nguyen Kim Thuy, Trinh Hoang Hiep, Ha Van Phung, Yukio Dodo, Damien Huffer 2006. Attitudes Towards Children: A Neolithic/Bronze Age Transition Cemetery in Northern Vietnam. Workshop 26 (WS 26) Babies Reborn: Infant/ Children Burials in Prehistory XVth UISPP Congress in Lisbon, September 4/9/2006.
- Bellwood, P. (2008), "Agricultural dispersals in mainland and island Southeast Asia", International forum the site of Man Bac (Ninh Binh province) Issues and discussion, 19th July, 2008.
- Nguyen Kim Dzong (compiler of this preliminary report) 2006: "Preliminary report on the Vietnamese - Japanese - Australian archaeological excavation at the Man Bac site. Anthropological and Archaeological study on the Origin of Neolithic People in Mainland Southeast Asia". Report of grant-in-Aid for International Scientific Research (2003 - 2005 N^o. 15405018), March 2006, pp.88-128.
- Domett, K. (2006) "The Subadult skeletal remains: Preservation, Age- at- death estimation and

- preliminary pathology observations”, Anthropological and Archaeological study on the Origin of Neolithic People in Mainland Southeast Asia. Report of grant-in-Aid for International Scientific Research (2003 - 2005 N^o. 15405018), March 2006, pp.198-214.
- Domett, K. (2008), “Demography and Health at Prehistoric Man Bac” International forum the site of Man Bac (Ninh Binh province), Issues and discussion, 19th July, 2008.
- Higham, C.F.W and Bannanurag F.S.A&R (1990), The excavation of Khok Phanom Di a Prehistoric Site in Central Thailand, Volume II: The Biological Remains, Published by The Society of Antiquaries of London, distributed by Thames and Hudson Ltd.
- Trinh Hoang Hiep (2006), “Man Bac site (Bach Lien hamlet, Yen Thanh commune, Yen Mo district, Ninh Binh province)”, National Museum of Korea, May 29th 2006.
- Huffer, D. (2006), “Burial descriptions”, Anthropological and Archaeological study on the origin of Neolithic people in Mainland Southeast Asia. Report of grant-in-Aid for International Scientific Research (2003 - 2005 N^o.15405018), March 2006, pp.129-155.
- LabbĐ, A.J (2002), Prehistoric Thai ceramics Ban Chiang in regional cultural prorspective, White Lotus Co.Ltd G.P.O. Box 1141 Bangkok 10501, Thailand, Printed in Thailand.
- Mastsumura, H. Yukio Dodo, Wataru Takigawa, Nguyen Lan Cuong, Nguyen Kim Thuy, Marc F Oxenham (2006), “Adult skeletal human remains from the Man Bac site in Ninh Binh province, Vietnam”, Anthropological and Archaeological study on the origin of Neolithic people in Mainland Southeast Asia. Report of grant-in-Aid for International Scientific Research (2003 - 2005 N^o. 15405018), March 2006, pp.156-197.
- Matsumura, H. Oxenham, M. Nguyen Lan Cuong, Huffer, D. Dodo, Y. Domet, K. Nguyen Kim Thñy, Nguyen Kim Dung, Yamagata, M. (2008), “Morph metric affinity of the late Neolithic human remains from Man Bac, Ninh Binh province, Vietnam: key skeletons with which to debate the “two layer” hypothesis”, Published online 21st February 2008
- Matsumura, H. (2008), “Implication of two layer hypothesis based on Man Bac”, International forum the site of Man Bac (Ninh Binh province) Issues and discussion, 19th July, 2008.
- Meacham, W. (1978), Sham Wan Lamma Island an Archaeological site study, Published by the Hong Kong Archaeological Society, with the assistance of the Urban Council.
- Oxenham, M. Hirofumi Mastsumura, Lorna Tilley, Nguyen Lan Cuong, Nguyen Kim Thuy (2008), “Early childhood caries in prehistoric Southeast Asia: oral helth in an often ambiguous status and gender category”, International forum the site of Man Bac (Ninh Binh province), Issues and discussion, 19 July, 2008.
- Robert W. Preucel and Ian Hodder (2006), Contemporary Archaeology in theory a reader, Blackwell publishing, pp.356-357.
- Special Exhibition of Excavated Remains (1999 - 2000), The result of archaeology in Honam region, Gwangju National Museum, Korea.
- Tools and Technology of Korea (1994), Kwangju National Museum, Korea.
- Vincen, B. (1988), Prehistoric ceramics of Northeastern Thailand with special reference to Ban Na Di, BAR International Series 461.
- Yoneda, M. (2008), “Dietary reconstruction of ancient Vietnamese based on carbon and nitrogen isotopes”, International forum the site of Man Bac (Ninh Binh province) Issues and discussion, 19 July, 2008.



Landscape terrain of the Man Bac site

Man Bac is located at 20°08'085" latitude north, 105°59'025" east, Bach Lien Village, Yen Thanh Commune, Ninh Binh Province.



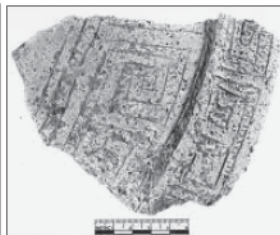
Burials and minimum number of individuals per excavation season at Man Bac

Order	Area	Number of burials	Number of individuals
1999	H1: 12m ²	0	0
	HII: 30m ²	5 Burials	6 Individuals (99MBM5a,b)
2001	24m ²	10 Burials	11 Individuals (01MB4a,b)
2004 - 2005	36m ²	36 Burials	36 Individuals
2005	10m ²	9 Burials	9 Individuals
2007	H1: 13.8m ²	H1: 13 Burials	13 Individuals
	H2: 24m ²	H2: 32 Burials	32 Individuals
Total	149.8m²	105 Burials	107 Individuals
Average area		1.427m²/1 Burial	1.4m²/1 Individual

Decoration motifs of Man Bac Site have relationships with a cultures in different countries of the region



Patterns on the pottery material type II of Man Bac Site



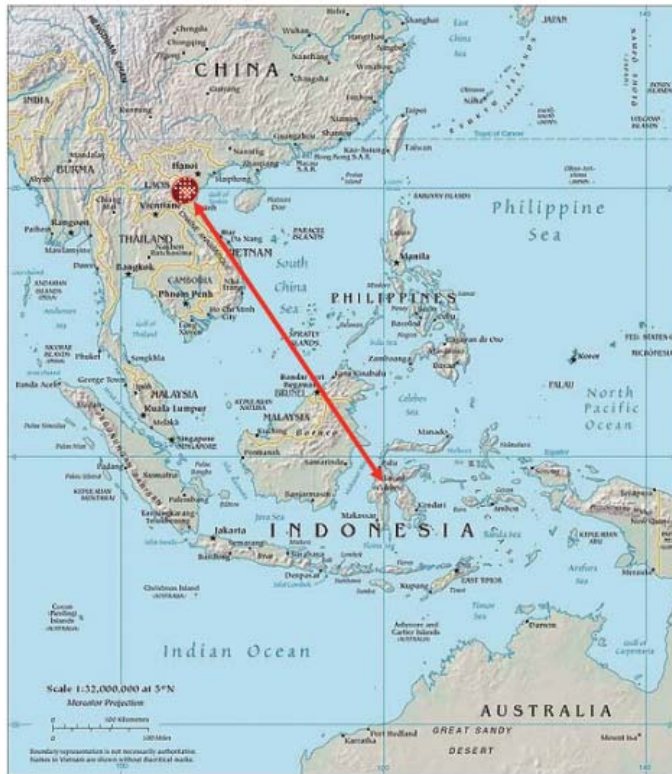
Patterns on the pottery of Trang Kenh Site



Patterns on the pottery material type II, Man Bac Site



Pottery at Kalumpang Center west Sulawesi islands, Indonesia



Kalumpang Site - Center west Sulawesi islands, Indonesia



Artifacts pottery of Burial 28 (2004 - 2005)
Man Bac Site (Culture phase II)



Chinese bronze drum
[Ancient Chinese Bronze Drums 1981]

Radiocarbon and AMS dates from Man Bac Site:
Late period:
99MBH2L2 (30-40cm): 3.530 ± 60BP (1.580 ± 60BC).
MB01L5-7 (150cm - 160cm): 3.400 ± 60BP (1.700BC)
We think that early period of the Man Bac Site around 4,000BP.
Data based on material culture such as stone and pottery. We think Man Bac Site belongs to the Late Neolithic - Early Bronze Age.

- Archaeological artifact was found at Wangjiazui Site, Chongyang province in 1977.
- Age of the relics is tied to the Zhou State, but some think that the text dates to the Pre-Jin. According to a number of researchers the chronology is equivalent to Man Bac relics of early Zhu 1046-77BC, Pre-Jin 221-201BC).