Understanding the Bach Dang Battlefield from recent research results

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Abstract
The Mongols created the world’s most powerful empire in the thirteenth century, conquering China and establishing the Yuan dynasty. Their military power was in doubt, however, after failed naval invasions in Japan and Vietnam. According to historical records, the Vietnamese tactics used against the Mongolian Armada were designed to prevent them from reaching the mouth of Bach Dang River by using hidden stakes that were driven into the riverbed in secrecy. Using the large difference in tides, the Vietnamese successfully lured the enemy fleet into the trap, destroying or capturing perhaps as many as 400 vessels. Since the 1950s, approximately 700 years after this watershed event, Vietnamese archaeologists have discovered a number of large wooden stakes in the midst of reclaimed paddy fields along the Bach Dang River. Excavations and research were conducted which led to the identification of several stake-yard sites believed to be dated to the battle that took place in 1281 C.E., however, no remains of ships have been identified to date.

In 2009, a group of scholars from the Institute of Archaeology at Hanoi, the Institute of Nautical Archaeology at Texas A&M University, and the Maritime Archaeology Program at Flinders University joined the archaeological investigations of these stake-yard sites with a focus on studying the battle strategy used by the Vietnamese and identifying ship remains from the battle. This joint paper will present an intermediate result of this international cooperative project in maritime archaeology in Vietnam at the naval battle site related to the thirteenth century Mongolian invasion of the country. The team has identified several new areas of concentrated stakes and the distribution pattern may lead to better understanding of the battle and the possible location of shipwreck sites.

Introduction
Since 2008 the international research team the Bach Dang Battlefield Research Group, comprises of scholars from the Institute of Archaeology in Hanoi (Vietnam), the Institute of Nautical Archaeology at Texas A&M University (United States of America), the Maritime Archaeology Program at Flinders University (Australia) and others. Over the last three years, it has conducted archaeological survey and excavations at Bach Dang in Vietnam. This investigation of the maritime cultural landscape encompasses the topography, archaeological evidence and later memorials, temples and shrines associated with a historically significant naval battle that took place there in 1288 AD. A key part of this research is to develop a better understanding of the battlefield with a focus on

1 The Bach Dang Battlefield Research Group
2 Anno Domini - are designations used to label or number years used with the Julian and Gregorian calendars. This calendar era is based on the year of the birth of Jesus of Nazareth, with AD counting years after the start of this epoch.
studying the strategy used by the Vietnamese Dai Viet people. This research involves the archaeological investigation of wooden stakes that survive from the battle and remote sensing surveys, as well as conducting interviews with local fishermen and farmers, in order to locate areas with possible ship remains and related finds. The work has been designed as a comprehensive project that is expected to grow to encompass more research issues and include other researchers.

**Context**

In 1271 AD Kublai Khan, the fifth emperor of the Mongol Empire (1260-1294), became the founder of the Yuan Dynasty in China (Gascoigne 2007:137-150; Ebrey 1996:172-3). On several occasions, from 1274 AD onwards, Kublai Khan dispatched armies aboard fleets of ships in attempts to expand the empire’s hegemony and extend his rule into East Asia (Japan) and Southeast Asia (Vietnam). Two highly significant locations associated with these attempted Mongol invasions have been identified – along coast of Takashima Island and in Bach Dang River. These are places where historically important naval battles are known to have taken place, in each case resulting in the defeat of the Mongolian fleets by the local people (Delgado 2009; Ngo 1993:Vol.II, 61). In addition, archaeological and material culture remains associated with the fleets and battles have been found at both locations (Sasaki 2008; Tong, *et al.* 1988; Le and Ha 2005; Le, *et al.* 2009a; Le, *et al.* 2011; Sasaki 2009). One area is located off the shores of Takashima Island in the northwestern Kyushu Islands of Japan where Mongol invasion fleets are believed to have been sunk by a large typhoon during the invasion in 1281 AD (Delgado 2009; Kimura 2006; Sasaki 2008; Sasaki this volume). The other area is located on the Bach Dang River in northern Vietnam (under the control of the Dai Viet from 1054 to 1804) where a river/estuary naval battle took place in 1288 AD.

**History of the naval battle at Bach Dang**

Vietnamese historical records including Đại Việt sử ký toàn thư (Ngo 1993) and An Nam chi luoc (Le 1961), as well as Chinese dynasty chronicles such as Yuan Shi (Song 1976) mention the 1288 AD naval battle at Bach Dang. Later historians, poets, and others have also written accounts of the battle (Trần 1963; Hà and Phạm 1968; Nguyễn 1988; Phuong 2009:25; Lê, *et al.* 2010). Although many accounts mention the battle, the real story is often shrouded behind myths and legends. Detailed knowledge about the battle is limited due to the scarcity of primary historical records. Therefore, since the 1950s and 1960s, it was realized that a general study of the geology, geomorphology, inscriptions, legends and archaeology was needed to more fully reconstruct the story of this event (Đại and Diệp 1970:65).

In general terms, the history of the battle entailed the story that having successfully taken the capital Thang Long (now Hanoi), the Mongol invaders found themselves trapped in an empty city without supplies. They soon decided
to abandon the capital and retreat, but the Dai Viet had decided to fight a
decisive naval battle with the invaders. The Vietnamese forces, under the
command of Tran Hung Dao and his generals, lay in wait for the invasion fleet
knowing that they would have to return to China through an estuary at the mouth
of the Bach Dang River. Tran Hung Dao was victorious and many of the Mongol
ships (perhaps numbering in the hundreds) were burned or lost during the battle.

The majority of historical sources agree that the principal tactic used by
the Vietnamese forces was to prevent the fleet from reaching the open sea and
trap them by using hundreds of secretly planted large wooden stakes that had
been sharpened to a point and driven into the riverbed at low tide (referred to as
stake yards). These stakes were probably covered at high tide and became
uncovered as the tide fell. This particular technique had also been used in the
area on two previous occasions in 938, when Ngo Quyen defeated the Southern
Han army, and in 981, when Le Hoan ordered stakes to be placed to block the
Song army.

The 1288 AD battle at Bach Dang River is widely considered to be a
milestone in the history of Vietnam as an independent nation and has shaped the
current culture of Vietnam. Tran Hung Dao is highly revered as the most able
general in the history of Vietnam. Since the battle, a number of shrines and
temples that worship Tran Hung Dao have been established, including in the Yen
Giang commune on Ha Nam Island. Some of these locations are related to myths
and legends associated with him. Some of these worship centers, such as the
Vua Ba Temple and the Trung Coc shrine, are large or well known (Phuong
2009) while others are much smaller and less well known. The religious aspects
of this research are important and the creation of the cult of Tran Hung Dao, his
many shrines, and his cultural impact and importance to Vietnam provide a
compelling contemporary aspect to the project.

Research up to 2005
Following the discovery of a large number of wooden stakes by local people in
the fields of Yen Giang commune (Quang Yen town), a group of researchers
from the Department of Conservation and Museums (now Department of Cultural
Heritage, Ministry of Culture, Sport and Tourism) went to Bach Dang in 1958.
They conducted a brief survey and opened three excavation trenches at the Yen
Giang site. Six stakes were found and it was believed that these were from the
1288 AD battle (Tống, et al. 1988).

In 1969 extensive survey and excavation was conducted by the
Department of History at Hanoi General University (now University of Social
Sciences and Humanities) in cooperation with local cultural officers (Đào 1969).
They excavated seven trenches covering an area of 520 meters squared (m^2)
at the Yen Giang site and discovered another 32 stakes. Researchers studied the
soil profile, made a detailed examination of stratigraphy and concluded that the
area was an ancient riverbed (Đại and Diệp 1970:71-72). Then in 1976, a third
excavation was conducted at the Yen Giang site by staff from the Museum of
Vietnamese History. In addition to relocating the same cultural layer, several
segments of wood were unearthed which were interpreted to be hammering tools (Trần and Trịnh 1977).

In 1984, during construction of a dike along the Chanh River, more stakes were unearthed, which were preserved in situ for future onsite exhibition by the provincial authorities. In 1987 an extensive survey and excavation was conducted by archaeologists from the Institute of Archaeology (IA) based in Hanoi, in cooperation with experts from the Institute of Earth Sciences from the Department of Conservation and Museums and local cultural officers. During this fieldwork a survey of waterways and underwater rocks was conducted by canoe along the Bach Dang, Chanh and Rut Rivers, and up to the Song Khoai area, which was an ancient waterway and is now being used for aquaculture. The researchers also made a general survey of the standing monuments, conducted literature reviews and gathered oral histories of legends related to the Bach Dang battlefield, and inscriptions and local knowledge about the tide to improve understanding of the battlefield. Ten trenches were excavated in the Yen Giang stake yard site and the stratigraphy was studied in detail in order to understand the techniques used for inserting the stakes (Lê 1988; Nguyễn Công Thái 1988; Tống, et al. 1988).

In 1995, during the digging of a fishpond, local people discovered several stakes at Dong Van Muoi (DVM) site, which was already known to Vietnamese researchers. The cultural officer of Yen Hung District took this chance to conduct a test excavation (No any report so far, except the information of Mr. Lê Đồng Sơn, Chief, Cultural sector, People’s Committee of Yen Hung District, Quang Ninh province). Finally in 2005, the Institute of Archaeology (IA) in cooperation with the Department of Culture of Quang Ninh province conducted a survey and excavation at the DVM site to identify the distribution and character of the site for planning site conservation and protection (Lê and Hà 2005).

**The current research**

In May 2008 an international team of researchers from the Institute of Nautical Archaeology at Texas A&M University and the Maritime Archaeology Program at Flinders University visited Vietnam to undertake an investigation of two wooden anchors that had been found in the Red River near Hanoi (Sasaki and Kimura 2008). While in Vietnam the team also conducted a preliminary site inspection of stake yards in the Bach Dang area, visited museums where stakes from the battle(s) are held and met with Vietnamese researchers, including Dr. Vũ Thế Long and Dr. Lê Thị Liên (IA). Also in 2008, a well-preserved new stake-yard was discovered at Dong Ma Ngua (DMN) in Hung Hoc village, when a local resident found large clusters of stakes while digging a fishpond.

In 2009, the Bach Dang Battlefield Research Group (the team) conducted an extensive survey in Quang Yen town and on Ha Nam Island. They were also asked by local cultural officials to map the stakes at DMN as well as to excavate a small area to examine the soil profile (Figure 1).
The fishpond measured approximately 20 x 15 meters (m) and the team recorded the location of 22 visible stakes. The distribution pattern of these stakes appeared random at the time of the preliminary survey. In addition, a small trench (1m x 2m) was excavated down to a depth of approximately 3m from the surface of the fishpond. The majority of the stakes showed a remarkable state of preservation and their surfaces appeared almost new. The profile of the trench exhibited several layers indicating that a series of depositional events took place in the past. The soil profile was characterized with a deep deposit of clay overlaying a deposit of sand, which indicates a typical estuary or a shallow river gradually filling in. Considering the well-preserved nature of the wood, recent depositional events may have occurred at a relatively fast pace (Lê et al. 2009; Sasaki 2009). One of the principal research questions for this project has been to establish accurate dates for the stake yards, which involves a program of radiocarbon dating of samples from the stakes. Five wood samples from isolated stakes were collected for Carbon 14 (C14) analysis and species identification. The results of C14 analysis provided a date range around 700 years Before Present (BP) that was in accordance with our expectations.

In 2010, fieldwork continued at the DMN site with four new trenches opened that were later integrated into one large trench (Figure 2). Two additional test trenches were opened in the rice fields around the DMN site to compare the sediments in the surrounding area and to further develop our understanding of the topographical features. As a result of the excavation, 55 stakes (plus one oar, other wood fragments, potsherds and ceramics) were identified in the fishpond. The position of these stakes and some important topographical features around
the site were recorded and photo mosaics of the site were also produced (Kimura
and Pham 2010; Lê 2010).

![Figure 2. Dong Ma Ngua 2010, overview of trench H1 (right) and trench H4 (left)
where 25 stakes were identified, photographed, analyzed and from which wood
samples were extracted. The stakes diagonally driven are facing each other.
(Photo by Nguyen Mai Huong courtesy of the Bach Dang Battlefield Research
project).](image)

The 2010 fieldwork season focused on recording the stake distribution
pattern. The stakes were aligned in columns, orientated in various directions. It
appears that two sets of columns were driven to face each other at the upper
ends of the stakes. Some of these stakes were also driven densely to form a
wall-like feature. Similar diagonally driven stakes had also been seen in the
previous excavated stake yards (Le and Ha 2005). Although the original
dimensions of each stake are difficult to ascertain due to their deteriorated
condition, the diameters may fit to some regular range of approximately 6
centimeters (cm), 12cm, or 20cm. The bottoms of the stakes were observed and
some of them had a recess or a notch. Although this feature could not be
confirmed on all stakes, it appears that they might have been associated with the
method used to set the stakes in place. Yet, the way the large stakes were set
into the riverbed is still under debate.

Wood samples from ten stakes were sent to Forestry and Forest Products
Research Institute in Japan and the University of Forestry of Vietnam for species
identification. They were identified as *Meliaceae* sp. (họ Xoan) or *Rutaceae* sp. (họ Cam/Chanh), and another was *Leguminosae* sp. (họ Đậu). The remaining samples were *Shorea-Shorea* (Dipterocarpaceae sp 3 samples) (họ Sao dâu), *Peltophorum dasyrachis* (lim xẹt or hoàng linh in Vietnamese), *Parashorea chinensis* (chò chỉ), *Lithocarpus ducampii* (đè đỏ), *Dipterocarpus tonkinensis* (chò nâu), and *Engelhardtia roxburghiana* sp (chẹo tía). Legend suggests that ironwood was used for these stakes and the term ironwood can be interpreted as any hard, dense wood, which seems to correspond well with the results of the species identification.

Through the analysis of soil profiles, it seems that the local topography at the time exhibited a significant change in elevation with stakes driven into the slopes of channel banks. At DMN the riverbank appears to have sloped from east to west, which was deduced from the 1m difference of elevation that exists between the stakes found in east and west trenches within the same sediment layer. The sediment includes a number of thin layers, which resulted from river deposition processes. The sediment changes from top to bottom, from clay, clay with sand, sand, and finally sandy silt. Some layers were subdivided by sub-contexts, such as tiny clamshells, large oyster shells, and degraded plant remains. According to Doan Dinh Lam (pers. comm.), a Vietnamese geologist, these are typical river sedimentations observed in the area; the clay in the upper layer confirms that it results from a lesser tidal influence and from slow sedimentation. In the lower layers, however, some of the sand layer and sand-silt layer exhibit much thicker deposit. The thick layers are identified as original riverbed into which the stakes were driven.

A large number of artifacts were excavated, including the stakes and wooden fragments, pottery (ceramic and stoneware), bricks and tiles. A broken oar most probably associated with a small boat has been unearthed (Figure 3). Several small wooden artifacts have been interpreted as wooden tie rods. Some fragments have processing marks, such as rope holes for transportation or probably mortised holes. The flatness of some fragments suggests that they could be manufactured woodwork rather than stakes. Thus, it is possible that fragments of boats or ships have been found in this area. A large amount of degraded wood fragments and charcoal and a thick layer of blackish silt were observed in the excavated area, which indicates the use of firing.

![Figure 3. Fragment of oar (Photo by Hà Mạnh Thắng).](Image)
The pottery fragments represent a wide range of dates (13th to 18th centuries), and includes both (earthenware?) ceramic (28 fragments) and stoneware (79 fragments). Ceramics analysis is currently ongoing but some of the ceramics are dated to the Tran Dynasty (1225-1400), including the whitish glazed and cracked brown glazed ceramics of the 13th-14th centuries and the blue-and-white ceramics of the 15th-17th centuries. Some of the ceramics were found in the same sediment layer as the stakes, and some were found in the layers above. Although their location might have been disturbed due to the flowing waterway, it was noticed that fragments of ceramics and stoneware datable to 13-14th century and 15th-16th century have been found mainly from the sandy clay layer (layer 3) and clayish sand layer (layer 4). A fragment of Chinese Song celadon was also unearthed from layer 4. Layers 3 and 4 are proposed to have been the riverbed during the 1288 AD Bach Dang battle (Le and Nguyen. 2011).

Vietnamese researchers previously calculated the tide-fluctuation levels they occurred on 8th March 1288 (Nguyễn Ngọc Thụy 1964:36; Nguyễn Duy Hinh 1988). The stratigraphy at the DMN site suggests that the riverbed in this area was at a depth of about 5.2-5.5m during the highest tidal level and 3-3.2 m at the lowest one, according to modern tidal levels). If stakes more than 3m long were driven into the riverbed, the Mongolian ships, which have about 2.5 m of waterline would not have been able to cross this area.

**Conclusion**

Each of the monuments, stake yards, and the ancient topography that lies hidden beneath the modern landscape of the Bach Dang Battlefield in Yen Hung district, Quang Ninh province reveals a part of the Vietnamese strategy to defeat the Mongols. There are 3 major stake yards where the distribution, nature and dimensions of the stakes have been identified and recorded: the Yen Giang, the Dong Van Muoi (DVM) and the Dong Ma Ngua (DMN) sites. It first appeared that the stakes might have been placed between the ancient islands and navigational hazards in order to create an effective ‘wall’ preventing the vessels from travel through the channels and into the open sea. This was deduced from the positions of the stake yards sandwiched between natural hazards (Figure 4). The excavations at the DVM and DMN sites, however, seem to suggest that it was not a simple wall that the Vietnamese created. When constructing such a wall around the waterways and islands, one must also consider how to prevent the

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3 Nguyen Duy Hinh (1988) used the 1971 data of Do Nghi Gauging station to suggest that in the 8th March 1288 of the Lunar calendar, the highest tidal level was 1.52m and the lowest one was -1.43m. From the datum point set up by the Bach Dang research team in DMN site, the riverbed from excavated pit H3 is about -3.2m deep. According to Mr. Le Dong Son (Chief of Culture Bureau, Yen Hung district), without the dike system, during the height tidal level, tidal flow may be more than 2m above the datum point.

4 According to Nguyen Viet, the waterline of the Mongolian ships were about 2.5m (after Tong Trung Tin, et al. 1988)
enemy from landing and taking control of the land. As a result, a more complex arrangement of stakes may be expected.

![Figure 4. Distribution of discovered stake yards in Ha Nam Island (Lê Thị Liên 2011:37, H.9 Drawing courtesy of Bach Dang Research Team)](image)

There was an ancient waterway in the excavated area at DMN that had a higher bank in the eastern side and was gradually silted up, as indicated by layers of sandy silt and alluvium. The land changed from an estuarine salt-marsh to brackish swampy area as indicated by the presence of several types of *teredo* (worm) of various species and sizes. The result of pollen analysis for the DMN site provides evidence of flora in this area, including arboreal, shrub and non-arboreal plants, fern spores and especially a diversity of mangrove plants. Generally, although this area was always affected by sea tides, the influence was not the same throughout history of its sediment formation, as indicated by the presence of an abundance of mangrove pollen. Based on the ecological characteristics of various types of mollusks, we can also see the change from directly affected by the sea - to tidal mangrove estuary environment (Nguyễn, et al. 2011).

Further survey work is planned for late November 2011. A remote sensing survey, core sampling and limited test excavations will be conducted to find more stake yards as well as possible shipwrecks. Stake yards are expected to be buried below several meters of silt and to be in excellent condition, preserving the original configuration of the stakes.
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