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RECENT DEVELOPMENTS IN SOUTHEAST ASIAN ARCHEOLOGY

INTRODUCTION

Southeast Asia is a region with a modern history dominated by European colonialism. For this reason, even since the end of colonialism in this region, the Southeast Asian archeology has, fortunately or unfortunately as the case may be, continued to be influenced by colonial science, one exception being in Vietnam, which soon after the independence developed a field of archeological research and training conducted in the national language. The characteristic features marking the historical development of the Southeast Asian archeology may be summarized as follows.

1) **Colonialist dominance.** From the 19th century to the end of the 1950s, the archeological study of this region had been conducted exclusively by foreign researchers in the complete absence of any effort to establish a training system for indigenous archeologist.

2) **The rise of nationalism.** During the 1960s and 70s, the nature of Southeast Asian material culture was overemphasized in the wake of a burst of nationalism throughout the region following World

War II.

3) **Diversification.** From the 1980s on, Southeast Asian archeology came to be characterized by such elements as the cooperation of foreign and local scholars, general projects including the preservation of cultural properties and human resource development, and the utilization of high-tech instruments.

The present review will introduce the major research topics in the archeological study of both the prehistoric and historic periods that have been of interest in the field since the 1990s.

1. HOMINID IN PLEISTOCENE SOUTHEAST ASIA

Concerning the Pleistocene Southeast Asia, while a number of stone tools have been identified, there are many cultural aspects that remain unknown; moreover, what had been previously thought to be hominid implements of the middle Paleolithic period have now been thought to be more recent origin. For example, the recent research done on the Tampanian Culture, represented by the cluster of stone implements discovered from the river terrace of the Perak River on the western Malay Peninsula, now places it in the upper Paleolithic, between 70 and 30 thousand years ago. In Vietnam, the Nui Do Culture deriving from the cluster of stone tools discovered on the mountain of that same name in Thanh Hoa Province is no longer thought to be Paleolithic, but rather a stone tool-making site of the Phung Nguyen Culture, which spanned the late Neolithic and early Metal Ages. What had been identified as Paleolithic remains are now thought to be unfinished polished stone tool.

While the explication of the archeological cultures in Pleistocene Southeast Asia has not developed much in recent years, there has been research on human remains that has drawn a great deal of attention from the viewpoint of the diffusion of early human throughout the regions of Asia. That is to say, the discovery of "Flores Man" in the limestone cave of Liang Bua on Flores Island, Indonesia, in 2003. Although part of Insular Southeast Asia, Flores Island falls east of the Wallace line (in the sea east of Sundaland) and even during the Ice Age was accessible only by sea. In a joint survey conducted by Australian and Indonesian scientists, petrified skeletons were unearthed from the Pleistocene layer together with flake and lithic-core tools and fossil of Stegodon. The research team identified the skeletons as *Homo Florensiensis*, a new species of proto-

human closer to *Homo erectus* than *Homo sapiens*. *H. Florensiensis* is an extreme example of the Island Rule, according to which large insular mammals evolve by dwarfing in size, measuring less than a meter in height with a cranial capacity of about 420 cc. Their extreme small size leads one to nickname them "hobbit," according to a fantasy novel. With an age of between from 38 to 18 thousand years ago, Flores Man does overlap the age of *H. sapiens*; however, it is unclear as to whether there was any interaction between the two species. The Island Rule has also been employed in speculating about the origins of Flores Man, that members of the earliest larger Java *H. erectus*, crossed the ocean to isolated islands and dwarfed to an extreme extent. However, it is also necessary to explain their possession of flaked tools that is typical to the modern *H. sapiens*. So far, the possibility of contact with modern *H. sapiens* or the insular evolution of the early or modern *H. sapiens* have been offered, but more detailed research needs to be conducted.

2. THE APPEARANCE OF AGRICULTURE IN THE LATE NEOLITHIC AGE

Changes began to occur in Southeast Asian settlement patterns around 4000 BC, in the form of migration from mountain caves to the lake shores and coastal lowlands. Such changes can be assumed to have been accompanied by the pre-wet-rice agriculture and the cultivation of such tubers as taro root and yams. At Kuk Swamp in the upper reaches of the Waghi Valley in the New Guinea Highlands, both irrigation ditches and taro-root fields have been found dating back to 7000 BC, the time thought to be when taro cultivation first took root in the region. However, taro is not a plant native to Oceania, but rather to Southeast Asia; therefore, its cultivation probably began in its native habitat earlier on and was then transmitted to Oceania. Recently, Thomas Loy [1994], a molecular archeologist at Australian National University, argued that taro cultivation was conducted in the Solomon Islands around 7000 BC, based on starch residue he found on stone implements unearthed from Kilu Cave on Buka Island. Despite such findings, we have yet to discover any comparable direct proof of tuber cultivation in Southeast Asia such as irrigation system or cultivation field, although Nitta Eiji [2015] of Kagoshima University has pointed out the existence of what seem to be tuber processing tools, such as stone grinders with cup-shaped centers, pestles, and grinding plates, which appeared along with the above-mentioned changes in settlement patterns.

Regarding wet-rice cultivation in the region, based on the findings from the intensive excavation conducted in the Yangtze River Basin since the 1970s, it has been concluded that this is the region where wet-rice culture originated around 6000 BC. Regarding the transmission of wet-rice cultivation to Southeast Asia based on this hypothesis, Peter Bellwood argued that 4000 BC marked the transmission south into the Xi River Basin and then on into northern Vietnam. In addition, Bellwood's findings in comparative linguistics form the following model for the transmission. While the descendants of the Southeast Asian Paleolithic Hoa Binh Culture included both members of the Austroasiatic-speaking Semang hunter-gather and Austroasiatic-speaking Senoi agrarian people of the Malay Peninsula, the latter also intermingled with southern Chinese cultivators, meaning that wet-rice cultivation was transmitted to Southeast Asia by Chinese migrants [Bellwood 1979, 2004].

However, the wet-rice origins hypothesis was challenged in 2012 by a joint research team of scientists from the Japan National Institute of Genetics and China's Academy of Science Shanghai Institute of Biological Science, which conducted comparative genomic analyses of wild and cultivated rice, which produced the surprising conclusion that the source of wet-rice cultivation was the region around Guangdong Province's Pearl River, a branch of the Xi River, where wet rice was being cultivated as early as 8000 BC. The research team also found that it was the rice genus *Japonica* that first developed from a group of wild rice (not *Indica*, which presently dominates Southeast Asian cultivation), then after several cross-fertilizations between *Japonica* and other wild-rice groups, *Indica* came into existence [Huan and Kurata et al. 2012]. According to this new model, rice cultivation originally centering in the Pearl River Basin was then transmitted north to the Yangtze Basin and southward to Southeast Asia. The problem with this new hypothesis is that it lacks both archeological and anthropological support.

On the other hand, Bellwood's transmission hypothesis was strengthened by physical anthropological research findings published in 2011. A research team headed by Matsumura Hirofumi of Sapporo Medical University studying the morphological aspects and mitochondrial DNA of human skeletons unearthed at the Man Bac excavation site on the southern bank of the Red River Delta in northern Vietnam proposed a "dual structure" model in the origins of Southeast Asians involving the hybridization of two different genera of human being. This model is not only important in clarifying the origins of rice cultivation, but also as a model for explaining the diffusion of *H. sapiens* in the region during the alluvial epoch. In concrete terms, during the latter half of the

Neolithic era, the date of the Man Bac site, a group of purely hunter-gatherer descendants of *H. sapiens* who migrated in a southerly route from Eurasia around 1700 BC intermixed with another group of rice cultivator *H. sapiens* which migrated in a northerly route through southern China and expanded further south. The team's morphological findings show differences between "Man Bac man" and Southeast Asian hunter-gatherers and the former's connection to the skeletons unearthed at the Weidun site inhabited by rice-growing cultivators in the Yangtze River Basin, as well as its farthest connection to Australian aboriginal people. The team's DNA analysis found that Man Bac was divided into several matrilineal kinship groups all configured with DNA common to Southeast Asia (Haplogroup B and F) and DNA common to East Asia (Haplogroup D and G), leading to the conclusion that these groups were the result of migrants from southern China intermingling with indigenous hunter-gathers [Matsumura 2011; Shinoda 2011]. Moreover, this is not a phenomenon specific to Vietnam, for there is a similar explanation for Thailand and Malaysia positing the advance of migrant groups equipped with rice-growing technology into those regions, as well [Higham 2014]. Nevertheless, in contrast with findings that show rice cultivation beginning in either the Yangtze or Pearl River regions in at least 6000 BCE, there is no comparably convincing model explaining the diffusion of that technology into Southeast Asia in 2000 BCE, over 4000 years later.

3. EARLY STATE FORMATION

The conventional theory of the state formation in Southeast Asia was first posed by the French epigraphist George Cœdès, who proposed the process of the "Indianization." Cœdès argued that with the exception of northern Vietnam, which was under the direct rule of China, the origins of the primitive state of Southeast Asia can be found in the systematic expansion of cultures from India. The "Indianization" is based on the Indian concept of kingship, characterized by Hindu and Buddhist rituals, mythology of the Puranas, legal principles of the Dharmashastras, and the linguistic vehicle of Sanskrit, initial Indianization occurred around the beginning of the Common Era and a secondary wave during the 4th and 5th centuries CE [Cœdès 1944, 1948, 1964, 1968]. Despite the so-called "discovery" during the colonial era of evidence proving Indic origin, such as Sanskrit inscriptions and Buddhist and Hindu temples and iconography, archeological findings since the 1960s have shown that although there is evidence of cultural influence from India, China,

and other regions, the type of direct (primary) implantation of the Indic culture argued by Cœdès cannot be proven. Rather, what seems to be the case is the development of indigenous forms of kingship followed by the proactive introduction of Indic cultural elements to perfect its institutions.

Furthermore, recent archeological findings regarding the region's earliest historical era make clear a far more complex process of Indianization than previously thought. For example, one of the early states that developed in central Vietnam, Linyi (Champa), was according to Chinese sources established during the latter half of the 2nd century CE. While the actual geographical center of the earliest Cham polities is unclear, later on, 1) a rectangular city surrounded by earthen walls was built at the present day village of Tra Kieu and became the Champa royal capital, 2) a religious sanctuary was erected at nearby Mi Son in a valley looking out upon towering Mt. Maha-Sivarati, which resembled the phallic symbol (*linga*) of Shiva, and 3) a port city was erected at Hoi An at the mouth of the Thu Bon River, all three forming a kingdom with a flourishing maritime trade linking mountains and sea. The excavation of Tra Kieu conducted by Ian Glover and Yamagata Mariko unearthed in the earliest layers Chinese-style geometrical-impressed pottery and Chinese-style roof-tile escutcheons resembling the faces of demons, leading them to conjecture that the capital architecture consisted of wooden structures with tile roofs, suggesting more a Chinese than Indic motif [Yamagata and Glover 1994]. In particular, Yamagata argues that the round roof tile escutcheons with human facial pattern resemble those found at the Southern Wu Dynasty era Jiangye-Cheng site and has shown that similar escutcheons were found at Champa-era sites at Co Luy and Thanh Pho, both located south of Tra Keiu, all suggesting a Chinese-influenced appearance characterizing the Champa capital cities.

In Cambodia, during 1996 and 1999 the Angkor Borei site was excavated by an archeological team headed by University of Hawaii's Miriam Stark and is now thought to be the capital of the state of Funan, which like Champa was also thought to have been Indianized [Stark et al. 1999; Stark 2003b]. Stark's excavation revealed a brick-made foundation of the building and a rich collection of earthenware, which were classified into three separate historical phases. Phase I (500–200 BC) was characterized by light- to dark-gray and cord-marked earthenware; Phase II (200 BC–300/200 CE) by orange wares, these two phases being thought to fall on the prehistoric era; and Phase III (300/200–600) by fine buffware, showing the first appearance of globular spouted vessels (*kendi*) and pedestaled bowls [Bong 2003] characteristic of the later Angkor era. While

the Phase III collection has been considered by the Indianization school of Southeast Asian culture to have originated due to Indic influence, recently scholars have begun to call for more detailed research into such topics as the localization process of earthenware of Indian origin, when that process occurred and its relationship to prehistoric indigenous pottery [Stark 2003a].

In recent years a team of architectural historians from Waseda University have turned its attention to the Sambor Prei Kuk site, which was the capital of the Khmer state of Zhenla, the successor to Funan. Sambor Prei Kuk was first excavated during the 1950s by Bernard P. Groslier, the last French curator of the Angkor sites, but his findings were not published in full due to the ensuing civil war and social chaos. While many of the remains unearthed by Groslier became scattered or lost, their re-examination was conducted in 2007 and reported in 2008 [Shimamoto et al. 2008]. Excavation of the site began anew in 2004 and is continuing. After inspecting the artifacts that have been discovered, this reviewer found Indic-style flat roof tiles similar to those identified at the Oc Eo site in the Mekong Delta and at Angkor Borei in southern Cambodia, and Khmer-style roof tiles found at all of the Angkor sites, leading one to regard Sambor Prei Kuk as an extremely important site for speculating about the process of Indianization in Southeast Asia. We look forward to new developments taking place there.

4. THE CLASSICAL STATE

In recent years, Cambodia's Angkor sites have become the focus of many internationally organized archeological excavations. This flux in research activity is due to the virtual stoppage in archeological surveys there between the war years 1970 and 1991; therefore, with the arrival of peace in 1991, Cambodia became the focus of highly intensive excavation by teams from many countries, resembling an archeological Olympiad of sorts. Since such international activity from the end of civil unrest until around 1999 has already been comprehensively reviewed by Sugiyama Hiroshi [2000], this section will focus on the investigations related to production sites attributed to the Angkor dynasty, which began coming out during the 1990s, and the research utilizing high-tech instruments.

4.1 Stoneware Kiln Sites

In addition to the excavation of walled cities and temple sites, one more trend in post-civil war Angkor archeology has been the survey of stoneware kiln sites and the study of indigenous stoneware ceramics. The first discovery of an Angkor-era kiln site is by no means recent, dating back to the end of the 19th century. The importance of the kiln site at Phnom Kulen (Mt. Kulen) in the northeast portion of the Angkor region was duly recognized by French scholars and its preliminary investigation was conducted before the outbreak of the civil war. However, since it is not a site with architectural structures and decor attractive to tourism, Phnom Kulen, although of interest to researchers, was not designated for either preservation or restoration, and also due to its not being a tourist attraction, it suffered from a lack of public notoriety. Moreover due to the chaos wrought by the war and the land-mine problem in its wake, the site has been difficult to access even in present-day peaceful times.

Given such conditions, in 1995 a new kiln site was discovered in the Angkor region by local villagers at Tani, 19 km north of the Angkor ruins. At the time of the discovery, the area around the site was scattered with numerous pottery shards and kiln tools due to road construction and pillaging, a situation that the Autorité pour la Protection du Site et l'Aménagement de la Région d'Angkor (Siem Reap) viewed as critical and in need of immediate steps to preserve and survey the site. This emergency situation was responded to in Japan by Sophia University and the Nara National Cultural Properties Research Institute, which began a joint survey and preservation project. The resulting excavation of the Tani site during the years 1996–2002, which represented the first genuine survey of a kiln site in Cambodian history, found kilns well preserved in two mounds and enormous artifacts to the amount of 450 containers. The findings of the excavation and related research have already been published and the reader is requested to refer to them for details. However, in general the unique structure of the kilns, and the artifacts including ash-glaze and unglazed bottles, incense cases, jars, pots, and roof tiles, all dating from the mid-10th century on indicate that the site represents not only Angkor-era pottery making, but also the basic point of reference for clarifying the art at its earliest stages throughout Insular Southeast Asia [Aoyagi and Sasaki 2007; Tabata 2008].

As the first project of its kind in Cambodia, the Tani excavation has a public-archeological project to inform the importance of the site and its historical meanings to local residents. More concretely, in light of the dominant Theravada Buddhist beliefs in the region, prior to excavation,

research team held a gathering of local residents at the site marked by a ceremonial reading of sutras by Buddhist monks, in order to illicit their auspices for the survey project and make an integral part of their daily lives. During the first excavation, which took several weeks to complete, the local residents were kept informed of the process in Khmer, in order to make them aware that cultural treasures are by no means limited to the magnificent ruins of temple compounds and palaces, but also include every cultural remnant that has become buried in the ground over time. As of March 2014, this sort of integrative approach to archeological discovery has completely transformed the Tani kiln site from the ransacked state in which it was first found into a historical landmark freed from devastation. Looking back on the hundred year of archeological investigation and conservation works that has been conducted in Cambodia since the "discovery" of the Angkor monuments, the Tani project represents the very first time that survey and preservation efforts have been directed towards something that was not related to brick and stone edifices. In this sense, Tani marks the beginning of a new direction in surveying Cambodia's cultural properties, turning our attention to important sites other than the Angkor monuments and tourist attractions.

4.2 Investigation of the Ancient Cities by Remote Sensing

One of the characteristic features of archeology today is the application of leading-edge scientific technology, like Light Detection and Ranging (LiDAR), a remote-sensing application that is drawing attention not only in Southeast Asia, but throughout the world. LiDAR, which draws maps by aerial laser beam radiation, can obtain detailed geophysical data even in areas, like dense tropical forest, where land surveying is impossible and satellite and aerial photography cannot depict features. The use of this technology in archeology was made in the forests of Cambodia in 2012 on the largest scale ever. During April of that year a research team from a joint project involving seven countries, including Australia, France, the United Kingdom, and Japan, mounted a laser-beam measuring instrument on a helicopter and proceeded to scan an area 370 km^2 in size centered upon the Angkor Wat (early 12th century) and Angkor Thom (late 12th century) ruins. The team found evidence of road and irrigation systems that indicate the existence of ancient cities in the area. In the site clusters at Koh Ker, which became the Khmer capital in the 10th century, and on Phnom Kulen, which was the capital during the 8th and 9th centuries, the scan clarified the traces of many public works.

1. In the capital of Angkor Thom proper and its outskirts, a lattice-shaped road and irrigation system was detected as the capital's basic plan (although the lattice layout has already been confirmed before the LiDAR scan by a survey conducted by the École française d'Extrême-Orient [Gaucher 1996, 2004]).
2. The remains of earthen levees, irrigation ditches, and reservoirs were found throughout the Angkor monuments.
3. In the large temple complexes encircled by moats, beginning with Angkor Wat, latticed plans similar to that of Angkor Thom were confirmed.
4. Throughout the site cluster of Mahendraparvata, the earliest capital of the Khmer Empire (9th through 15th century) located on Phnom Kulen, 30 km northwest of the Angkor site cluster, a network of levees and irrigation channels was discovered, confirming that the urban plan of the early empire had from the beginning been equipped with irrigation infrastructure.
5. At the site cluster of Koh Ker (Chok Gargyar), where the capital was temporarily moved from the Angkor (Yasodharapura) during the early 10th century, a large public-works infrastructure was discovered, characterized by an intricate lattice plan even for this short-lived city.

4.3 The Middle Period

The historical view that the period of "decline" following the "fall" of the Angkor dynasty need not be examined, combined with the huge amount of human resources devoted to the preservation of all the Angkor ruins have resulted in very little attention being drawn to post-Angkor archeological sites. However, recently the situation has begun to change with the research of art historian Marie-France Dupoizat [1999] on the imported ceramics artifacts unearthed at the Angkor Thom palace site by Jacques Gaucher [1996] during the 1990s, classifying them periodically into 10th–14th century, 16th–17th century, and 19th–20th century productions. Dupoizat's findings were also the first to confirm that there are artifacts in the Angkor ruins that belong to the post-Angkor period. Regarding the post-Angkor ceramic artifacts, historian Kitagawa Takako [2000, 2010] surveyed the post-Angkor political and commercial centers around Ponhea Leu and Oudong in mid-southern Cambodia and collected pieces of the Japanese Bizen earthenware dated the latter half of the 17th century. Also recently, Satō Yuni [2008, 2009, 2010], who is conducting detailed excavation surveys of post-Angkor sites, found in her investigation of artifacts unearthed at Ponhea Leu that among its imported ceramics, products from the Jiangxi ceramic-production center of

Jingdezhen showed an increase during the middle and late 17th century; however, during the 18th century there was a rapid increase in Fujian ceramics, then during the 19th century there was an overall decrease in imports.

CONCLUSION

Despite the continuing developments occurring in the field of Southeast Asian archeology, as outlined above, the field is by no mean free of problems.

First and foremost, there is the problem of national borders. For example, while we know of the distribution of the pre-Angkor sites from southern Vietnam into southern Cambodia, at the time of this review, the number of those sites is far greater on the Vietnam side of the border than their counterparts on the Cambodian side. This imbalance between the two countries in archeological surveying over the past decades does not only lie in the fact that Vietnam presented better conditions under which to do research. At the present time, there is also a problem in terminology, with archeologists active in Cambodia referring to these sites as "pre-Angkor," while Vietnamese scientists designate them as of the "Oc Eo Period." Despite the fact that Cambodia and southern Vietnam possess the same premodern cultural heritage, the contemporary research into that heritage has tended to be greatly influenced by political situation. In recent years, however, efforts are being made in the two regions by local scholars and foreign researchers to overcome the problems of nationality and contemporary social conditions. Hopefully, such productive scholarly exchange and discussion will bear fruit.

Secondly, there are problems posed by a multi-linguistic research environment. To begin with, continental Southeast Asia is marked by many diverse national languages—Thai, Vietnamese, Khmer, Lao, and Burmese—meaning that whenever attempting research that crosses national borders, one will inevitably encounter language barriers, and in Cambodia the situation is even more complex. During its colonial period, archeological research in Cambodia was dominated by the French literature, meaning that at least until the beginning of the civil war almost all the survey reports and research done in the field were published in French, which was required learning for anyone wishing to freely study Cambodian archeology. However, after the civil war, with the decrease in the number of French-speaking scholars, the recent research findings are being published in either English or Japanese, while at the same time

Cambodians, who had been excluded from the field during the colonial period, have since the end of the civil war seen the development of a substantial system of higher education, giving them the opportunity to publish their survey reports and research findings in their native language. Consequently, the research literature regarding the field of Cambodian archeology now contains findings published in no less than four different languages, making it extremely difficult for even the specialist to gain a comprehensive knowledge of his chosen area of expertise. In order to bring some order to such a situation, it became customary for scholars active in non-English speaking spheres to report their results in English-language summaries and those publishing in Khmer would add reports written in either English or French. However, recently the researchers publishing in Khmer no longer render that courtesy. And so, with the establishment of an archeological community within the Cambodian academic society publishing their findings in Khmer, we are now facing the danger of related research in that country being divided into two factions, indigenous and foreign, incapable of carrying on productive scholarly exchange of data and ideas. We must take serious steps to avoid such a situation.

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