early man
in Southeast Asia
Wilhelm G. Solheim II

New discoveries by the Thailand Fine Arts Department-University of Hawaii Archaeology Program in Northern Thailand are well on the way to revolutionizing world prehistory. The preliminary results of this program strongly suggest that instead of being an area of passive cultural development, owing all progress to diffusion from China and India, Southeast Asian cultures were the first in the world to domesticate plants and possibly animals; to grind and polish stone tools and to manufacture pottery; and were as early as, if not earlier than, Middle Eastern cultures in the
The field research which most dramatically pointed to this new conclusion has been centered in two areas. We first started working in northeastern Thailand in 1963 as a salvage archeology program supported by the National Science Foundation to investigate archaeologically unknown areas, as far as prehistory was concerned. This was in areas soon to be under water as a result of dam building as part of the Lower Mekong Development Program. By 1968 the salvage program became problem oriented due to the exciting finds at Non Nok Tha. In 1965 one of my graduate students, who had worked with me in the northeast in 1963-64, expanded our program to exploration in the northeast where he discovered Spirit Cave with its astonishingly early dates for probable domesticated and tamed plants and quite early dates for a developed pottery.

The traditional reconstruction of Southeast Asian prehistory considers Southeast Asia as a cul-de-sac in the world development of culture. Virtually every type of artifact, and with these the inferred advancements in culture, was said to have been brought into the area by migrations of peoples from the north. In early historic times, about 2000 years ago, the source of cultural innovation supposedly shifted to the west with Indianization, or at least an influx of Indian aristocracy, bringing with them Brahmins and advanced technology and founding the first Southeast Asian empires. It was admitted that a number of plants were first domesticated in Southeast Asia, such as banana, coconut, yam, taro, arrowroot and sugarcane, but it was considered that this happened quite late, say the first millennium B.C. In time for the migrants sailing out into the Pacific from Southeast Asia to take these plants with them. This domestication of new plants supposedly took place after agricultural techniques and some domesticated plants were brought into Southeast Asia from the north. The hypothesis presented in the 1950's by Carl Sauer, a geographer, that Southeast Asia was the area in which plant domestication first took place, was not taken up by the prehistorians or archaeologists.

Two distinct periods of use became apparent while the excavation was in process. The upper half of the site (there was generally about 1.60 meters of culture-bearing soil) contained cremation burials in cord-marked jars which had been placed at the bottom of small pits, remnants of iron artifacts, a very few bronze artifacts, bones primarily of small animals, and a few porcelain and stoneware sherds showing contact with surrounding areas. The lower half of the site contained no iron but in its upper portion much evidence of the local production of bronze tools over an extended period of time. Small stone adzes were common. There was considerably more animal bone then in layers from the top half, and from larger animals. Some of this bone was found placed with the earlier burials, including in several cases some bone of bovine. In the lowest levels there were a number of stone tools but no metal and there was nicely decorated pottery which was not found above the fourth layer from the bottom.

Analysis of the collected data is soon to be completed and we have made new finds in the process. There are clearly three different periods into which the cultural continuum can be divided. The last period corresponds to the top half of the site, as mentioned above. At Non Nok Tha this began at about A.D. 1100. There is a considerable gap, probably around 800 years, between the bottom of the period and the last previous occupation of the site at around A.D. 300. During this time Buddhism had come into the area with its cremated burials, and we hypothesize an economic change from dry to wet rice agriculture. The only skeletal remains of water buffaloes are from this period.

The early half of the site we divide into an early and middle period. From C-14 and thermoluminescence dating (from the University of Pennsylvania) we date the beginning of the middle period around 3000 B.C., or shortly thereafter, lasting until about A.D. 300. Bronze is being used and locally manufactured throughout this period, without the local presence of iron. The site, as in the other two periods, was not occupied continuously and we hypothesize that this was a slash-and-burn farming economy with hunting and collecting adding an important element to the diet. There is no indication of the processing of fish at the site, only the casting. Possible sources for copper and lead, two components of this bronze, are found in the northeast within 100 kilometers and tin, the third component, is found in Laos another hundred or so kilometers away. From this we hypothesize that there must have been a trade network in bronze, or in the three separate metals, in Southeast Asia from at least the first working of bronze at this site.

The early period at Non Nok Tha is represented in the deepest three levels and came to an end at about 3000 B.C. We have no secure dating for these levels but we now feel that the first occupation of the site occurred during the first half of the fourth millennium B.C. or possibly in the fifth. Rice (Oriza sativa, probably Japonica) was present from the earliest use of the site as demonstrated by impressions of the husk found in potsherds from the deepest level. It is not yet known whether this rice is wild or domesticated, wet or dry. From burials dug down from the bottom level there are bone remains of dog, pig and cow, all probably domesticated. The cattle remains appear to be of Bos indicus, the zebu cattle of India; this is the earliest dating of this species yet reported.
the burials of the earliest levels contained the only well-done, incised and impressed decorated pottery from this site. Simple, crudely incised over-ord-marking, found on a vessel in one burial with several of the best decorated jars, continues into the early part of the middle period. A copper-socketed tool was found on the chest of a skeleton in one burial in the top early level. Preliminary analysis of the coper indicates that it contains arsenic and lead. The suggestion that the copper had at least been heat-worked to refine the metal to be used for cold hammering, if lead had not been cast. The tool could be an axe or possibly a kind of spear.

In the same level as the copper tool, and the following first level of the middle period, we found three decorated painted pottery vessels, which were incised with designs rarely seen among other sites, the principal difference is evident between each of the three levels and a closer examination shows the same in the later and middle periods as a whole. The basic layout of the site from the excavation of the last few years we have been working with the Hoabinhian site, and the burials indicate that the first occupants of the site were not newcomers to the idea of the ecological situation at Non Nok Tha, where they earlier had the major adjustments to the most recent ecological niche after moving out. The small mountain valleys used by the people of the Hoabinhian technoculture, which is hypothesized to play the ultimate source of the Non Nok Tha culture.

Spirit Cave

Spirit Cave, when it was discovered by Gorman in 1966, was the farthest west that any Hoabinhian site had been found. The Hoabinhian culture was first defined on the basis of the stone tool types from cave and rock shelter sites in northern Vietnam. These sites were usually found in mountainous country, in limestone formations near small streams. Since the first definition, similar sites have been found in South China, Laos, Thailand, northern Malaya and since 1967 in eastern Burma not far west of Spirit Cave, and in Cambodia. A few sites with the typical Hoabinhian tool kit and associated faunal remains have been found in large shell mounds not far from the coast in northern Vietnam, northern Malaya, and Sumatra. Some forms of typical Hoabinhian tools have been found as far north as Mongolia and Japan, in Island Southeast Asia, particularly western Indonesia, and in Australia. While the first considered as Upper Paleolithic, the Hoabinhian has come to be considered as a primitive Mouleithic culture found completely in the Holocene. It was felt that the cord-marked pottery usually found in the upper portion of Hoabinhian sites was not a product of the Hoabinhian people and that the small amount of edge grinding of stone tools resulted from Hoabinhian contact with lowland farmers. Physically they were considered to be ancestors of the present-day Melanesian.

Spirit Cave is a fairly typical Late Hoabinhian site; it lacks one typical element and has two atypical tools. The common stone tools are crude according to European and Middle Eastern standards of stone technology. The core tools tend to be flaked on only one side with the original surface left on the other. The usual grinding stones are present and many used flakes which do not conform to a pattern. It is only in the last few years that archaeologists have realized that many of the common flakes reported found in Hoabinhian sites were used as tools. The great majority of these are unrestricted but microscopic examination of the edges shows damage or wear from use. The usual faunal remains of bones from a wide variety of animals, broken into small pieces, and freshwater shells complete the inventory. The element lacking is the edge grinding, to sharpen and straighten a working edge of a few of the typical stone tools. The top layer in the site has three new artifacts added to this inventory: pottery, partly polished rectangular axes and small stone knives. The latter two being atypical of the Hoabinhian sites.

Previous to Gorman’s excavations in Spirit Cave, no one had thought to look for plant remains in Hoabinhian sites. As his problem for his Ph.D. thesis, Gorman was looking for a Hoabinhian site to test Sauer’s hypothesis that plant domestication had taken place in Southeast Asia in a cultural context very much like that presented by the Hoabinhian. He screened all of the excavated soil through fine screens and found carbonized seeds and shells from nuts and gourds. Identification of these finds by Douglas Yen, an ethnobotanist in the Anthropology Department of the Bishop Museum in Honolulu, showed that among the finds were: two different kinds of beans and a pea which were probably domesticated, Chinese water chestnut, black pepper, a cucumber, areca nut (used in betel chewing in Southeast Asia today), bottle gourd, and several other nuts and seeds plants that are still important in Southeast Asia. Much of the broken bone had been burned, suggesting cooking in bamboo and the typical Southeast Asian system of cooking with vegetables and hot spices. Much of today’s Southeast Asian life style is indicated in Spirit Cave from its first use.

Carbon-14 samples were sent out for dating, but they failed to arrive to report the dates for a year. When they arrived we found that we were dealing with the late Paleoloe and early Holocene and thus that the level of plant utilization by the people of Spirit Cave was earlier than in the Middle East. Gorman now has a total of at least 13 dates, all internally consistent. The earliest occupation has still not been dated, but it is before 10,000 B.C. The new elements of pottery, the rectangular axes, and the slate knives, the Spirit Cave assemblage at about 7000 B.C. The pottery is well made and some of it is decorated by painting. It is not a primitive pottery but one with considerable history behind it. Gorman feels that the slate knives were probably used for harvesting a cereal crop, possibly rice, and in his excavation in progress as this goes to press, he is looking for further evidence on this.

Other Thailand and Burmese Evidence

Several other international archaeological expeditions have been working in Thailand since 1960 and the Fine Arts Department, besides working with those, has been making independent excavations. At Lopburi the Thai National Museum excavation directed by Vilay Intakosot, and at Chansen, the Fine Arts Department-University of Pennsylvania excavation led by Somporn Yung and Bennett Bronson have found iron artifacts from the first occupation of these sites, both around 1200 B.C. (thermaluminescence dating by University of Pennsylvania). At Lopburi there are heavy, socketed axes, generally similar to the bronze axes of Non Nok Tha. Both of these sites are towards the eastern edge of the central plain. The second Thai-Danish Expedition in 1965, led by Per Sorensen, excavated a Late Hoabinhian site on the Sengha in the central Thailand. A C-14 date slightly earlier than 9000 B.C. has been reported from that site. The Late Hoabinhian site at Sengha, excavated by the Archaeological Survey of Burma under the leadership of Aung Thaw, has a C-14 date of about 11,550 B.C., on one of its earlier levels.

A very nice painted pottery with a variety of spiral decorations in red on a tan background was excavated by Vithya for the National Museum at Ban Chiang, northeast of Non Nok Tha. Bronze artifacts have been found in this site but of what association is not known. Three thermoluminescence date samples, it is the only site by this university of Pennsylvania. One of these is 4700 B.C. and the other two are from the range of the fourth millennium B.C. There are definite similarities between this pottery and the three painted vessels found at Non Nok Tha, but they are far from identical.
New Data from Elsewhere in Southeast Asia

Archaeological research in both Malaianj and Indo-Southeast Asia supports the need for a new interpretation of the region's prehistory. I will mention only five of the countries where important excavations were made during the 1960's though important results have come from all the Southeast Asian countries.

North Vietnam has had many new excavations, for the first time made by Vietnamese archaeologists. From work I now know that there are one or two bronze using and manufacturing cultures which are antecedent to the well-known Dongson Culture which had previously been thought of as the first "Bronze Age" culture in Southeast Asia. The spread of this culture was hypothesized to have been by bronze and associated geometric designs into most of Southeast Asia during the second half of the first millennium B.C. Carbon-14 dates for the earlier bronze now go back to about 1600 B.C. and I expect earlier dates to be forthcoming. The geometric designs that supposedly came in with bronze manufacture, other than the possible Chinese or migrations from western Asia, are now shown to be those found in the early Non Nok Tha, Ban Chiang, and even Spirit Cave pottery of several thousand years earlier, and as pottery decoration during the second millennium B.C. and earlier in Island Southeast Asia.

Excavations in Formosa, the Philippines, Sarawak, Indonesia and Portuguese Timor have produced the geometric decoration on pottery which I mentioned above, from the second, and in Formosa the third and earlier millennia B.C. The Formosan excavations have identified two different cultures, one in the north and the other in the south, both appearing around 2500 B.C. Clearly below both of these cultures, and distinct from them, was found the Corded-Ware culture, so named by the director of these excavations, Chiang Kwang-chih, after the cord-marked pottery which is a part of the cultural assemblage. Chiang suggests that at both sites where this was found it came to an end by about 3300 B.C.; that it had come in much earlier, and that it was a derivative of the culture in northern mainland Southeast Asia and South China which made cord-marked pottery, most likely the Hoabinhian. He further suggests that slash and burn agriculture was a part of the economy. Some of the cord-marked pottery was incised with two or three of the geometric patterns used on the Dongson bronze.

The Sa-tham-Kam Yai Pottery Tradition is the name I gave to a group of pottery complexes which have these geometric patterns of decoration on a small amount of their pottery. Sa-tham-Kam is an archaeological site in the west coast of southern Thailand, Annam, in South Vietnam, and the Kalanyon Cave site on the island of Mabate, in the central Philippines. None of these sites, in which this pottery has been found are the Tabon Cave sites in Palawan, the Philippines, and the Fong Caves in Sarawak.

It has also recently been reported from sites in Portuguese Timor and southwestern Celebes, excavated by archaeologists from the National University and the Indonesian Archaeological Institute. The pottery is related in some way to the potteries of the Hoabinhian Culture Tradition found in Melanesia and probably to pottery found in Madagascar, and is therefore associated with the Melanesian and African Ceramics peoples who populated the whole of the Pacific and reached as far west as Madagascar.

New Expeditionary for Southeast Asian Prehistory

The general success of the prehistoric evolution of man's culture in Paleolitne, Mesolithic, Neolithic, Bronze Age and Iron Age has been used for the classification of these periods as economic base but still very dependent on hunting and gathering and the term of the Pleistocene with the draining of the Sund Shale by the rising oceans. Late Hoabinhian peoples living along the coasts of the Sund Shelf were forced to the new coastal lifestyle, both in Island and Mainland Southeast Asia. I have hypothesized that it was these peoples who domesticated yams, taro and other vegetative plants we think of as Southeast Asian. This was a period of gradual movement, of expansion into new ecosystems and adaptations to them. Around 4500 B.C., utilizing the outrigger canoe, the movement commenced which ultimately brought people to all the islands of the Pacific and to Madagascar; it also made some contact by Southeast Asians with Japan and Korea. Also around 4500 B.C., somewhere in the interior mainland, copper smelting and casting was invented and around 3500 B.C. bronze had been invented and was being cast into socketed axes. Here Southeast Asia becomes much more complicated, with Late Hoabinhian cultures continuing side by side with much further developed cultures and the unusual situation of many extremely varying, yet in some ways similar, cultures continuing until today in relatively close proximity.

V. Conflicting Empires. Though Southeast Asian cultures apparently had all of the necessary foundation for civilization with its warfare and power politics, the peoples of Southeast Asia, except possibly in northern Vietnam, did not develop this themselves but preferred to keep their local independence and relatively peaceful ways (headhunting was widely practiced). Not until the intrusion of ideas and people from India, around 2000 years ago did the next phase begin. At first this period equaled with the Early Hoabinhian, beginning (by definition) 4500 years ago and ending at 3600 years ago. In the Early Hoabinhian developed directly out of the generalized culture of the Lithic Stage.

The 'Spring of 1972' part of the Crystalliclic Stage there was a crystallization of distinct local cultures out of the generalized Early Hoabinhian culture tradition. These cultures are named and defined culture(s) of eastern Island Southeast Asia (which was at this time still partly joined with the mainland as there was a portion of the Sund Shelf) where there was a much greater use of stone tool for well tools. The better long period of this period, at about 22,500 years ago, marks the invention of stone grinding and polishing of the working edge of a few typical Early Hoabinhian stone tools; this distinguishes the Middle Hoabinhian. More importantly, the Middle Hoabinhian had incepticet horticulture. It came to an end about 15,000 years ago with the first domestication of plants and at about the same time as the invention of pottery, during the Late Hoabinhian. The Crystalliclic Stage came to an end about 10,000 years ago (at which point I start using B.C. dates), but not the Late Hoabinhian.

*References:

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2. _Asian Perspectives_ XIII, 1981.
7. _Aging Chairmam of the Department of Anthropology of the University of Hawaii and a member of the Coordinating Committee for Hawaiian Archaeology and the Society of Trustees of the Hawaiian Foundation for History and the Humanities_. He received his M.A. in Anthropology from the University of California in 1949, his Ph.D. from the University of Arizona in 1952, and has done field work in the Philippines and the countries of Southeast Asia for over a decade. He is a frequent contributor to scientific publications dealing with Southeast Asia and the Pacific, particularly with reference to the prehistory of Thailand.