

ARCHAEOLOGY AND LINGUISTICS IN SOUTHEAST ASIA: IMPLICATIONS OF THE AUSTRIC HYPOTHESIS

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ABSTRACT

The relationships between the Austroasiatic languages of eastern India and Southeast Asia and the Austronesian languages have been in doubt for almost a century. Schmidt's (1906) hypothesis that they have a common ancestor in the Austric phylum has neither been confirmed, nor rejected. Two recent papers, however, have lent strong support to the Austric hypothesis and they have profound implications for the prehistory of Southeast Asia. The assumption that Austroasiatic and Austronesian are separate would support more than one transition to rice cultivation and Neolithic expansion, perhaps one in the Yangzi Valley and the other in tropical Southeast Asia. A common origin for Austroasiatic and Austronesian would favour a single origin and expansion. Blust has argued in favour of the latter: an origin in the Yunnan-Burma border area and movement of rice farmers down the Brahmaputra into eastern India (Munda languages), the Mekong (Mon-Khmer languages) and the Red River valley (Viet languages). This paper finds general agreement with this view and explores the archaeological implications. The widespread dentate impressed pottery assemblages found at Baiyangcun, Phung Nguyen, Samrong Sen, Ban Chiang, Non Pa Wai and Khok Phanom Di are most simply explained as resulting from the expansion of rice cultivators into Southeast Asia during the third and second millennia BC.

INTRODUCTION

The conjunction of archaeological and linguistic data has a long ancestry in Southeast Asia, where the first

recorded instance of comparative linguistics in the region occurred in 1603. De Houtman, a Dutch sea captain, noted similarities between the Malay languages and Malagasy (Blust 1988:59). De la Loubère (1693) made the first recorded comment on the origins of the Thai based on linguistic evidence when he wrote:

As for what concerns the origine of the Siameses, it would be difficult to judge whether they are a single people, directly descended from the first men that inhabited the contrey of Siam, or whether in the process of time some other nation has not also settled there, notwithstanding the first inhabitants. The principal reason of this doubt proceeds from the Siameses understanding of two languages, viz. the vulgar, which is a simple tongue consisting almost wholly of monosyllables, without conjugation or declension, and another language, which I have already spoken of, which to them is a dead tongue known only to the learned, which is called the Balie tongue, and which is enricht with the inflexions of words, like the languages we have in Europe. (De la Loubère 1693:14)

De la Loubère was referring to Thai, a member of the Tai-Kadai family, and to Pali, an Indo-European language. Had he travelled more widely outside Ayutthaya, he would also have encountered communities speaking Mon, an Austroasiatic language; Cham, an Austronesian language; and Karen or Chinese, both of which are Sino-Tibetan. Clearly, the linguistic history of Southeast Asia is complex.

Since then, much research has been undertaken on the languages of Southeast Asia and information relevant to any consideration of the area's prehistory has been obtained. Yet, there is much still to be done. Some of the languages remain names on a map, and the pace of

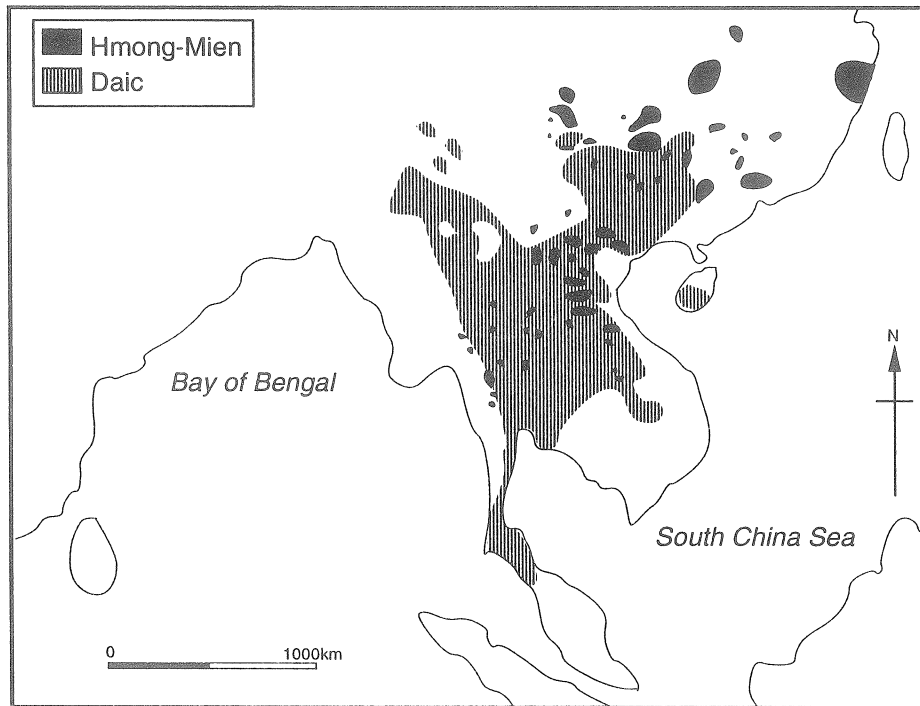


Figure 1. The distribution of Hmong Mien and Daic languages.

change threatens extinctions and the loss of critical information. We must also be cautious in attempting to relate the present distribution of languages to the archaeological record. Languages can become extinct, words can be adopted across considerable distances without population movement and the pace of linguistic change can be highly variable.

Most linguists recognize four major families of languages in Southeast Asia, known as Austronesian, Tai-Kadai, Austroasiatic and Sino-Tibetan. Benedict (1942, 1975) has proposed Austro-Tai as a superfamily which incorporates Austronesian, Tai (or Daic), Kadai and Hmong-Mien (Figure 1). It contrasts with a second family, known as Sino-Tibetan, which includes (amongst many others) Tibetan, Karen of eastern Burma and Chinese (Figure 2). When Chinese imperial ambitions led them, in the late first millennium BC, to what is now southern China they encountered people who spoke Austro-Tai and Austroasiatic languages. The latter family comprises over 150 languages within two sub-families: Munda and Mon-Khmer (Diffloth 1991; and Figure 3). Vietnamese and Khmer are the best known of the latter, but less is known of a further member, known as

Mon, formerly widely spoken in Central Thailand. However, with the expansion of Thai speakers during the last millennium, Mon now survives only in pockets on the margins of the Chao Phraya valley. Surviving inscriptions from Central Thailand reveal that Mon was the language of the Dvaravati civilization of the first millennium AD and most workers agree that this group had local roots. Khmer is the national language of Cambodia and the earliest inscriptions in the lower Mekong Valley include old Khmer texts. Vietnamese has spread during the last millennium from the Red River valley to coastal Central Vietnam and the Mekong Delta region. This southward spread has led to a considerable reduction in the area where Cham is spoken. The Chamic languages are Austronesian with close similarities to languages of Island Southeast Asia. Ancestral Chamic was probably introduced into Central Vietnam during the first millennium BC.

The geographic fragmentation of the Austroasiatic languages is seen elsewhere in what was surely once a broad belt of people belonging to this language family. A second subfamily of Austroasiatic is found in Central and Eastern India, where it is spoken by about five million

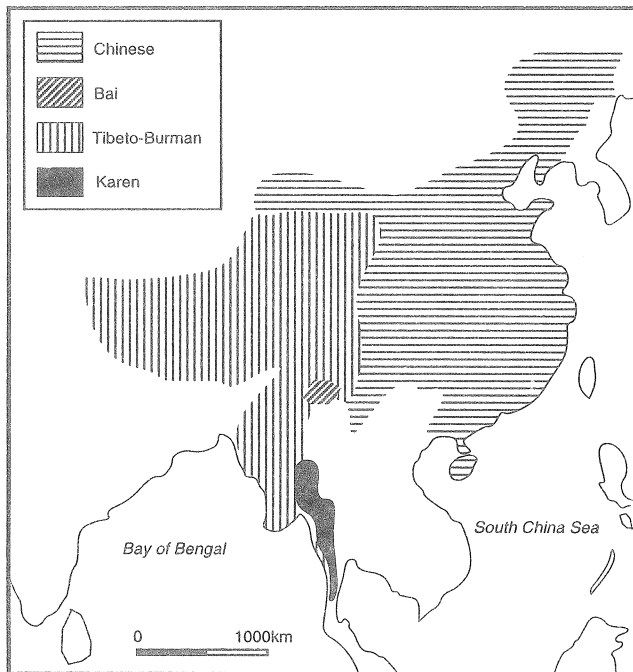


Figure 2. The distribution of Sino-Tibetan languages.

Munda people. They are rice cultivators whose original distribution is thought to have been reduced by pressure from Indo-European speaking groups. While stoutly retaining their identity, they live in relatively remote areas.

The widespread distribution of Austroasiatic languages must be considered with their considerable diversity. Even Mon-Khmer has twelve main branches, and Diffloth has suggested that their differences are compatible with separation commencing as long as 3-4000 years ago. At the same time, groups belonging to the Austroasiatic language family have been exposed to many intrusions. We have seen how Thai, Indo-European and Karen speakers have cut up the distribution of Austroasiatic into isolated groups. The Chinese have also had a major impact, particularly in Vietnam, for the northern part of that country was part of the Chinese empire for eight centuries.

The relationship between the Austroasiatic and Austro-Tai languages is a matter of considerable relevance to the prehistorian. If, for example, it could be shown that they are related, then we could seek a common origin and early population expansion in association with rice cultivation in Southeast Asia and eastern India, in the same way that Renfrew (1987) has

argued for a conjunction between Indo-European languages and the spread of agriculturalists into Europe. Such a common origin for Austroasiatic and Austronesian was first proposed by Schmidt (1906) when he linked them into the Austric phylum, but it has not been widely adopted. Benedict (1976) has noted that, while the two exhibit a basic similarity in morphology, they do not share a sufficient number of common roots to permit linking them genetically. He elsewhere suggested (Benedict 1975:33) that that an extinct Austro-Tai language may have been replaced by Austroasiatic, thus leading to some ancient borrowing. On the other hand, it has to be recognized that languages will, if separated for long enough, diverge so far from each other that no lexical resemblances will remain. The lack of common roots does not, therefore, rule out the possibility that Austroasiatic and Austro-Tai languages share an ultimate common ancestor.

Why should we be concerned with the present distribution of languages? Languages change with time and distance, but may also retain elements of a common vocabulary and structure. Therefore, if two languages at the extreme ends of a family's distribution have cognates in common, despite a long period of geographic isolation, then they may provide evidence of an early shared core vocabulary. Such reconstructed proto-languages have been widely used as a means of identifying aspects of early culture which are beyond the scope of archaeological techniques. By reconstructing proto-languages it is possible not only to establish an ancestral vocabulary, which is in itself of considerable interest to prehistorians, but also to establish the expansionary patterns which underlie present language distribution.

In Southeast Asia, tracing the expansion of peoples through archaeological and linguistic evidence has been most successful for Austronesian, a language family placed in the Austro-Tai superfamily by Benedict. This reflects the fact that Austronesian speakers spread largely by sea and the occupation of coastal fringes or islands. This would have reduced the impact of such borrowings and later encroachments which have made the study of Austroasiatic linguistic history so much more difficult. We have seen that a perceptive Dutchman in the early seventeenth century noted similarities between Malagasy and Malay. This is the result of maritime exchange and settlement by Austronesian speakers. Archaeology, linguistics and biological anthropology have contributed to an understanding of the expansion of Austronesian speakers across an enormous area, from Madagascar to Easter Island. By tracing shared innovations, linguists

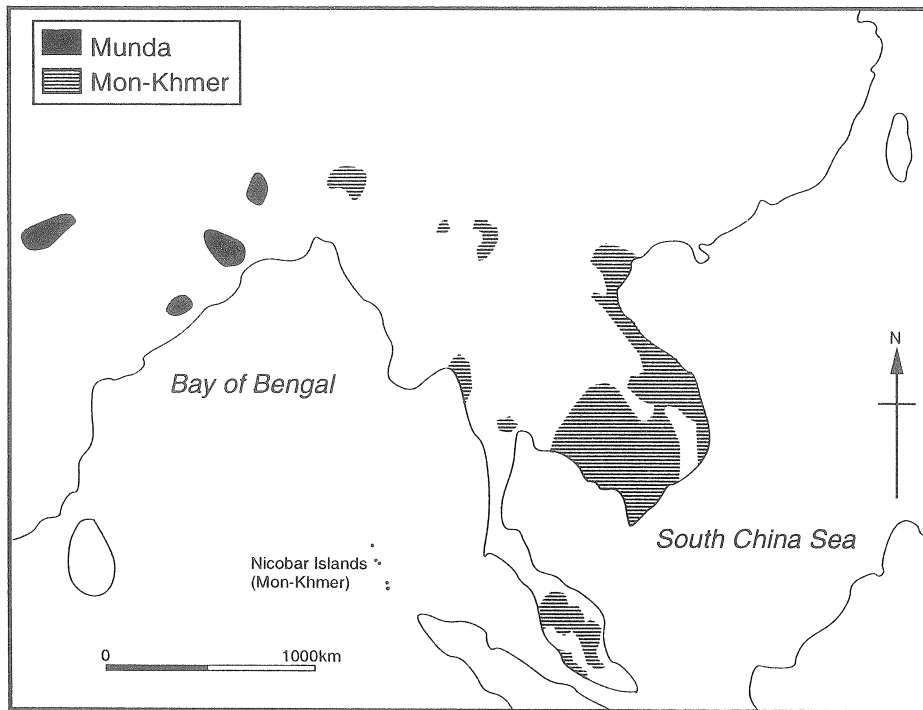


Figure 3. The distribution of the Austroasiatic languages.

have identified Taiwan as being close to or identifiable with the original homeland. Most would also agree that parts of south central China must have been occupied once by pre-Austronesian speakers, because of the links which have been established with surviving Austro-Tai languages.

Blust (1976) has compared many words found in different Austronesian languages and has identified cognates for a number of activities and artefacts which lay at the origin of the Austronesian expansion. Words can, of course, change their meaning and this exercise is not without its pitfalls. Dating, too, is not a straightforward exercise, particularly where it takes us back many millennia, Bellwood (1989, 1991), for example, has suggested about 5000 BC, and a location on the coast of southern China, for the time and homeland of Pre-Austronesian speakers. The people in question had words for cooked rice, rice in the field, and for the domestic pig, chicken and dog. They had the bow, bamboo fish traps and made pottery. Weaving was practised on a loom in villages with dwelling houses raised on posts and entered by a notched log ladder. Roofs were gabled with a ridge pole, and a reed thatch

was used. Inside, there were shelves for storing pots. Maritime technology was well advanced, for there are words for an outrigger, bailer, rudder, cross seat and rollers for beaching a canoe.

Such maritime, agricultural communities lie at the origins of a "wave of advance" which took their descendants first to the Philippines, then following the linguistic trail to the islands and coasts of Papua New Guinea, Indonesia and Melanesia. The trail, already having many routes, then split further within Indonesia as some went west to Malaysia and Madagascar. Within Oceania they occupied the island of Fiji, Samoa and Tonga and then set out in easterly direction in what surely constitutes the greatest maritime migration in human history, colonizing virtually all the inhabitable islands of Polynesia, reaching South America, Hawaii and remote Easter Island. From eastern Polynesia, some sailed southwest to reach New Zealand. As they proceeded, so they adapted to local conditions. Rice was dropped from the repertoire early as unsuitable habitats were encountered. Pigs reached the tropical Pacific Islands but pottery-making was abandoned in many locations beyond Melanesia. By the time New Zealand

was settled, pigs, rice and pottery were remote memories. Taro and yams were introduced to New Zealand, but of domestic animals, only the dog continued, faithful to the end.

The pattern of settlement can be traced archaeologically and linguistically. It seems that when these Austronesian speakers reached New Guinea they encountered well-organized local communities which had been cultivating fruits and tubers for some millennia already. They only skirted the coast of this area. Nor did the initial wave of advance settle the mainland coast of what is now China south of the Xijiang River, Vietnam or Cambodia. At least if they did, they have left no surviving evidence of their language, for the Austronesian Cham language of central Vietnam is probably the result of a more recent occupation of the area from Island Southeast Asia (Blust 1993b).

It is intriguing to compare the word list for a pre-Austronesian language of mainland China with what was found at Hemudu, the earliest site in this area which has yielded the remains of cultivated rice. Quite apart from the rice, we find evidence for wooden houses raised on stilts, the domestic dog and pig, as well as evidence for fishing and hunting. Being close to the lakes and the sea, it is hard to overlook the likelihood that these people were also proficient in boat building. Certainly their houses reveal mastery of carpentry. Hemudu is not the only such site in the area of the lower Yangzi river. Pearson and Underhill (1987:813), for example, have noted that woven fabric has survived at Majiabang to the north.

If one wave of advance from the lower Yangzi followed an island route which involved those who spoke Austronesian, what of the mainland itself? It will be remembered that Austronesian was included in the Austro-Tai superfamily by Benedict. Yet their similarities are slight, and the proto-language ancestral to both may well have been spoken perhaps 7000 years ago. Benedict (1975) has suggested that South China was the centre for the dispersal of the mainland Austro-Tai languages. Again, we encounter some most interesting roots which have been constructed for proto-Austro-Tai. These include the words for field, garden, to sow, winnow, the pestle and mortar, to cultivate, seed, grain and betel (a mild stimulant). Rice agriculture, together with domestic cattle and water buffalo, were central elements in the early Austro-Tai economy, along with sugarcane, coconut and ginger. There are common roots in several of the Austro-Tai languages for rice as a cereal, as a grain, prepared rice and rice as a meal. There are also common roots for hunting and fishing, bait, the

fish hook, trapping fish and the spear. Proto-Austro-Tai also had words for weaving, to sew and plait.

In terms purely of our knowledge of the archaeological record and the present distribution of languages, it is hard to avoid the conclusion that the early rice farming communities of the Yangzi Valley, identified from Pengtoushan to Hemudu, spoke an Austro-Tai language, one of which was ancestral to Austronesian. The distribution of the former is compatible with a mainland riverine spread in a southerly direction from an original centre of rice cultivation in the extensive marshlands of the Yangzi Valley. In terms of archaeology, sites which have yielded rice remains tend to be later as one proceeds in a southerly direction. There was also a proliferation of sites in the Yangzi Valley itself. In the middle reaches, we find that the early site of Pengtoushan was succeeded by numerous sites of the Daxi culture (4500-3000 BC), which in turn developed into the Qujialing culture (3000-2500 BC). This extended as far east as Lake Poyang, and the sites have in common large samples of rice, the domestic pig and dog, clay spindle whorls and cemeteries in which the dead were interred with offerings which included pottery vessels of widespread forms: the *ting* tripods and pedestalled bowls.

Two rivers provide communication through the southern uplands in the direction of the coast, the Xiangjiang and the Ganjiang. At the confluence of the latter with the Yangzi, we encounter similar rice-cultivating village communities belonging to the Shanbei culture, dated to the third millennium BC. Chang (1986) has acknowledged the widespread distribution of similar pottery and other artefact forms in the Shanbei and many other regional groupings at this juncture by ascribing them to the Lungshanoid horizon. A most intriguing question is the southernmost limit of settlements which may belong to it. Chang is in no doubt, for example, of the Lungshanoid affiliations of Shixia on the Beijiang River (c. 2500 BC). This settlement not only contained a large sample of rice, including offerings in some of the 108 graves excavated, but also the Lungshanoid-style tripods and jade ornaments in the form of rings, beads and pendants. The assemblage matches very closely those recovered in the Shanbei culture to the north, and along with the nearby site of Niling is most easily explained as a southward, riverine expansion from the Yangzi area.

At this point, since Shixia lies close to the valley of the Xijiang River and therefore to the coast of southern China, one might expect a proliferation of like sites in this region. But it is not the case. Moreover, it is stressed that it is this southern edge of the Lungshanoid horizon

where one encounters the region in which Austroasiatic languages are thought to have been spoken. We know that these have a considerable time depth, for the earliest inscriptions of Cambodia and Thailand, dating to the mid first millennium AD, contain passages in Mon and Khmer.

There is also a fruitful source of information in the survival of words in the languages spoken in parts of southern China today. Norman (1985) for example, has considered the Chinese time cycle, which incorporates a cycle of twelve earthly branches and ten heavenly stems. This was used at the beginning of Chinese history, and the symbols are among the most frequently-found graphs on the Shang oracle bones. Norman has found that the names for six of the graphs used to describe animals have an Austroasiatic origin, the Chinese forms most closely resembling those in Vietnamese and Muong. Norman and Mei (1976) have further argued that Austroasiatic languages were formerly spoken well into what is now southern China on the basis of loanwords into Chinese. Thus the word for "to die" in eastern Han China has an Austroasiatic origin. Old Chinese words for ivory and tiger and even the word *chiang* for the Yangzi River are said to be Austroasiatic. They have also shown that the Austroasiatic word for dog, which is present from Assam to Vietnam, was in use in Vietnam during the 2nd century AD.

The Min dialect is spoken in Fujian and northeastern Guangdong, provinces on the southeast coast of China. While most words can be traced back to early Chinese, there are some, such as the words for shaman, child, son, crab and small fish, which have an Austroasiatic origin. Norman and Mei see these as evidence for an early Austroasiatic substratum there. Hashimoto (1972) has also studied the languages of southeastern coastal China, and has found words in Cantonese and Min which indicate that Austroasiatic languages were once spoken in that region.

There is also the evidence from the Austroasiatic languages themselves, although less is known of these than of the Austro-Tai languages. Their distribution incorporating Vietnam, Cambodia, parts of central Thailand, the Nicobar islands, central Malaysia, Assam (Khasi), Burma, Yunnan (Palaung-Wa) and parts of India, reveal to Diffloth a separation which must have occurred well back into the prehistoric past. Zide and Zide (1976) have sought common roots in the Munda languages and those of Southeast Asia. They have reconstructed on this basis a proto-Munda language which included words for uncooked husked rice which match those used in Mon, Khmer, Rumi, Khmu and

Lawa to the east. Cognates are also found over this huge area for bamboo and bamboo shoots, pestle and mortar, husking rice, to get drunk, the dog, cow and chicken and most intriguingly, for copper-bronze. The implication is clear: the ancestral Munda language was related to people who grew rice and knew of metallurgy, and may well have expanded in a westerly direction from the Austroasiatic heartland in Southeast Asia deep in the prehistoric past. Karen and Tai, two quite distinct non-Austroasiatic language groups, were then introduced much more recently and severed the Munda from their Austroasiatic relatives.

The distribution of these language families, bearing in mind the constant shared cognates for rice and domestic stock in each, therefore suggest that there were three separate expansions of rice agriculturalists, one by sea first to the islands of Southeast Asia, a second which moved south from the Yangzi, and a third which involved the Austroasiatic languages.

THE AUSTRIC HYPOTHESIS

This brings us to the Austric hypothesis. Schmidt (1906) was the first to suggest that Malayo-Polynesian (Austronesian) and Austroasiatic languages share a common ancestor, which he termed Austric. If we follow Benedict in incorporating Austroasiatic into the Austro-Tai superfamily, then the Austric phylum would embrace the languages of southern China and Southeast Asia with the exception of more recent arrivals such as Sino-Tibetan and Indo-European. If Schmidt were shown to be correct, this finding would have profound significance for our understanding of Southeast Asian prehistory, for it would remove the separateness of the Austroasiatic and Austro-Tai languages. Until recently, no convincing evidence in support of his hypothesis was forthcoming, but now two papers have appeared, both of which lend it weighty support (Reid 1994; Blust 1993a).

Blust (1993a) has already explored the archaeological implications. Thosarat and I have described the major rivers of Southeast Asia metaphorically as being like the spokes of a wheel, with the hub in the eastern foothills of the Himalayas (Higham and Thosarat 1994). According to Blust (1993a), it was from this hub that the initial expansion of agriculturalists originated. In a westward direction, ancestors of the Munda moved, perhaps down the Brahmaputra, into eastern India. The Mon-Khmer speakers expanded down the Mekong and Chao Phraya and the Viet speakers entered Bac Bo via the Red River valley. At that juncture, tropical Southeast Asia was occupied by sedentary coastal hunter gatherer groups and upland "Hoabinhian" foragers.

Until Donn Bayard came into my office in November 1993 and told me of Blust and Reid's conclusions, I had retained an open mind on the Austric hypothesis and proposed two major alternatives for the origins of rice cultivation in Southeast Asia. If Austric were valid, then rice cultivators would have infiltrated the area from the north. If Austroasiatic and Austro-Tai were completely separate, there would be at least two transitions to rice agriculture and resultant expansion, one in the Yangzi Basin (Austro-Tai) and the other in the tropical area (Austroasiatic). Blust (1993a) summarised my own feeling well when he wrote of the confirmation of Austric:

No matter how much one may try to prepare for them in advance, I suspect that fundamental changes of belief are always abrupt. The evidence needed to bring about a change of conviction reaches a certain critical mass, and one is pushed over the brink. It is a somewhat dizzying experience to suddenly see the world in a different perspective than the one made familiar through long habituation. (Blust 1993a:5).

Let us consider the archaeological implications of the confirmation of Austric. Meacham, for example, has been prominent in stressing the likelihood of indigenous origins in southern China for the Neolithic communities there (Meacham 1983). He has stressed the importance of the drowned land which would once have stretched up to 100 miles out across what is now the South China Sea. This area of tide-dominated deltas, mudflats and mangrove swamps could have sustained a population of sedentary communities which lived off the rich, self-replenishing marine resources. Meacham has named this drowned country Nanhailand. It is highly significant to find that, as soon as the sea stabilised at a level slightly higher than it is at present, settlements were established all the way from Taiwan down to central Vietnam. These date back six millennia, and the people in question lived off fish and shellfish, made pottery and polished stone adzes, used sandstone polishers and on occasion, buried their dead within their settlements. At Tung Shan, for example, located in Hong Kong, the lowest level contained the remains of sand-tempered, cord-marked pottery and flaked stone tools (Qiao Xiaoqin 1991).

Similar coastal sites are known along the coast of Vietnam and the Gulf of Siam. Settlements were established soon after the formation of the new, raised coastline. They pose issues of considerable importance in Southeast Asian prehistory. Do they represent maritime communities responding to the rising sea level by relocating their settlements? This seems the most likely explanation for their number and the variety of material

culture encountered. There is no evidence either in Vietnam or in southern China for a migration of people from anywhere else. While resolution of this issue may have to await the discovery of sites under the present shallow sea which overlies the continental shelf, Ha Van Tan (1985) has stressed that the stone-working tradition seen at Cai Beo, Da But and Quynh Van culture sites match closely that found in the inland Hoabinhian and Bacsonian rockshelters. Since these latter sites were occupied, with no room for doubt, for at least six millennia before the earliest of these coastal sites, there are strong grounds for proposing a long-term continuity in the settlement of this part of Southeast Asia over the last 10,000 years at least. This could be extended back another eight millennia if we include the Son Vi culture. We also find that the coastal sites made use of netweights, became steadily more proficient at grinding and polishing stone tools, and interred their dead in inhumation cemeteries.

The Vietnamese call these sites Neolithic, but this raises an issue in need of close examination. No evidence has yet been found for the cultivation of rice in these early coastal sites. This may well be the result of insufficient sampling, for sophisticated retrieval techniques must be employed, particularly where rice chaff was not used as a tempering agent in pottery, to recover fragile plant remains. We cannot, however, doubt that there was a dense distribution of these sedentary, coastal groups in southern China and Vietnam.

The establishment of inland agricultural villages represents, then, a novel settlement form which on available archaeological evidence, is dated from the third millennium BC. The best-known group of such sites has been called the Phung Nguyen culture, and they cluster above the confluence of the Red and Black rivers. Ha Van Tan (1985) has pointed out that the preferred method of decorating Phung Nguyen pottery involves incised curvilinear bands infilled with comb or shell impressions. He has pointed to parallels with pottery from Samrong Sen in Cambodia and Ban Kao and Non Nok Tha in Thailand. We can now also add to this list the early incised pottery of Non Pa Wai and Ban Chiang, and some of the mortuary wares from Khok Phanom Di.

In Yunnan, there are further sites which incorporate inhumation cemeteries with dentate stamped and burnished pottery. Baiyangcun is located only 60 km east of a tributary of the Lancang (Upper Mekong) River, close to the headwaters of the Red River. Excavations have revealed a stratigraphic sequence 4.35 m deep, divided into two phases (Yunnan Provincial Museum 1981). The foundations of 11 houses have been

identified, and a cemetery of at least 34 burials. The latter were orientated with heads to the north or the east. Their layout suggests the presence of two clusters, in which there is at least one double burial. Unusually, there are no grave goods and many of the skeletons lack a cranium. The pottery was decorated with parallel incised lines infilled with impressions, a technique with parallels in Phung Nguyen and many other sites to the south, and the single radiocarbon date of 3770±85 bp (2462-2014 BC at 2 sigma) indicates contemporaneity with early Phung Nguyen and Non Pa Wai. The closest parallels to the pottery decoration strongly suggest links with communities down the Red and Mekong rivers.

The same may be said of Dadunzu, located north of Shangnapang in Yuanmou county (Yunnan Provincial Museum 1977). This settlement covers 0.5 ha and excavation in an area of nearly 500 m² has revealed 15 house plans and 27 burials in the cemetery. Houses were orientated on a north-south or an east-west axis, and superpositions indicate some length of settlement, the subsistence base of which included rice cultivation and the raising of domestic stock. Adults were buried in an extended position and infants were interred in jars. There was no preferred grave orientation and the infant jar burials were not regularly placed in association with adult burials. Once again, the pottery was decorated with infilled incised bands and the single radiocarbon date of 3210±90 bp (1549-1414 BC) falls within the chronological range for this tradition to the south.

It is, therefore, suggested that the widespread distribution of dentate stamped pottery, new configuration of inland settlements of rice cultivators and inhumation burial rite in permanent cemeteries could reflect a Neolithic wave of advance into Southeast Asia via the main river systems. According to present evidence, this took place during the third millennium BC, but many sites were not occupied until the second millennium and large lowland tracts, such as the Khorat Basin, remained without human settlement into the first millennium. But other alternatives must also be subjected to future research. Recent excavations at Nong Nor in the Bang Pakong Valley, for example, has revealed a mid-third-millennium BC coastal occupation site dominated by marine food remains, and without any evidence for the remains of rice (Higham *et al.* 1995). O'Reilly (1995) has shown that the material culture from this context is in many respects virtually identical with that from early Khok Phanom Di, and has argued that this represents a local development. If this is the case, then the burnished and incised pottery at the latter could hardly reflect an

intrusive movement of rice cultivators. Much remains to be investigated.

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