The Pre-Sa Huynh-Kalanay Pottery of Taiwan and Southeast Asia[1]

Wilhelm G. Solheim II [2]

Introduction

I have been living and working much of the time since September 1997 in the Philippines, where I am a Visiting Professor at the Archaeological Studies Program (ASP) of the University of the Philippines (UP). Due to long-standing budgetary problems, the University Library of the UP is very weak on archaeological publications. The ASP library is much better, primarily because I donated my own library to the ASP. My library was quite good for Southeast Asia, in which I include Taiwan for prehistoric periods up to the last several hundred years when considerable numbers of Chinese from China moved to Taiwan. Unfortunately, I had to start cutting down on the coverage of Southeast Asian archaeology from the early 1980s due to the great increase in the number of trained archaeologists in many of the Southeast Asian countries and a drastic increase in the amount of publication on their research; I just did not have time to keep up with it. Since my retirement in 1991, my library has become quite weak so, except for the Philippines, I am not well acquainted with much of the recent research and publication. As a result, what I cover in this paper is probably lacking on the recent research.

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[2]Faculty consultant at the Archaeological Studies Program, University of the Philippines Diliman, wsolheimii@yahoo.com

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Having read some of the recent general books on Southeast Asian archaeology and at least scanned numerous of the papers published in the proceeding issues of the *Bulletin of the Indo-Pacific Prehistory Association*, I do not believe that what I present here is in any great error. In fact, my knowledge of the much earlier publications on Mainland Southeast Asian archaeology (from 1920s to 1960) may have given me an advantage over some others, as it appears that many of the younger archaeologists are not acquainted with much of the early publication on Mainland Southeast Asian sites. Though the archaeology of those days was very lacking in what today is considered scientific method, there are still reports available that include areas with little or no recent coverage. They are very useful for wide area distribution studies of common artefacts, but not much for the sorts of problems present day archaeologists find of interest and importance.

My archaeological experience has been primarily with earthenware pottery. From Mainland Southeast Asia—in which I include South China up to the Tang Dynasty when many northern Chinese fled from the north to go south—pottery has been recovered in archaeological sites possibly going back 13,000 years and more. Sites in South China excavated by MacNeish and his Chinese colleagues (Chen 1999:83; MacNeish 1998:53-54; Yuan 1998:82; Zhang 1998:83) have pottery dated back to as early as about 12,000 BC. These dates are controversial to many; however, they do not bother me. They do not, however, involve Taiwan or much of the rest of Southeast Asia and certainly not Island Southeast Asia. In any case, most of my interpretation of wide area relationships in Southeast Asia and neighbouring areas has developed from my research on earthenware pottery.

I fully believe that the great majority of the early pottery found so far in Island Southeast Asia and the Pacific Islands had origins in the Mainland Southeast Asian Hoabinhian. This includes the Lapita pottery of Melanesia, the early pottery of Micronesia, the very little pottery that has been recovered in the Marquesas of Polynesia, and the Sa Huynh-Kalanay pottery. I do believe that some of the early pottery in Micronesia and Melanesia owes its ancestry to voyagers moving south from Japan (Solheim 1964a, 1968). I also believe that these voyagers were a part of what I have called the Nusantao Maritime Trade and Communications Network with their origins ultimately in Island and Coastal Mainland Southeast Asia (Solheim 2006).

Earliest Pottery from Mainland Southeast Asia

Probably the earliest dated pottery from Southeast Asia that is generally accepted by most archaeologists is from middle Hoabinhian sites in Viet Nam; however, I do not have the dates. It is not cord marked. Ha Van Tan (1984-1985:135) concerning early sherds from upper levels of Hoabinhian sites had this to say about the pottery:

> "These were made by hand without wheel turning, and shaped by a paddle wrapped with vine or bark, not twisted cord. They are, therefore, not true cord-marked pottery. Some scholars have suggested cord-marked pottery to be the earliest type in Southeast Asia, dating from the Hoabinhian, but we now know that the genuine cord-marked pottery with imprints of two- or three-strand twisted cords only appear later. Another variety of paddle-impressed manufacture had paddles wrapped or woven over with basketry, but this had not been reported from Hoabinhian sites to my knowledge and is from southeastern Viet Nam rather than in the north (Fontaine and Davidson 1980:76; 81. Pls. II-VI, Davidson 1975:96, N.24, Fontaine 1977:93). Bacsonian pottery, similar to late Hoabinhian, includes cord- or basket-marked and carved-paddle pottery (Boriskovskii 1968:251-252, Fig. 27)."

The dating of this pottery may be about the end of the Late Pleistocene or even earlier. This appears to be very similar to the earliest pottery recovered from the South China sites. Pamela Vandiver (1998:76-77) has reported that

> "Pottery vessels produced in Japan, China, and the Russian Far East during the time period from 10,000 to 13,000 BP show a remarkable similarity in manufacturing technique — small 1 to 2 cm preformed, circular to oval, slabs were pressed together in multiple layers, 2 to 4 mm thick, to form the vessel walls. Such wide geographical patterning of ceramic construction, narrow range of variability, and use of a forming technique no longer found in ceramic manufacture, together, suggest the following: (1) a common ceramic techno-complex, (2) the existence of technology transfer of sharing, and (3) long distance communication and interaction on a scale heretofore unsupported by direct observation of the technological style of a particular aspect of material culture."

For the South China sites

> "Ceramics appeared in the Neolithic I period, characterised by flowerpot-shaped vessels with smooth or grass-wiped and/or paddled surfaces and limited decoration (Hill 1995 [Chen 1999:83]). For the China pottery mentioned by Vandiver this must be the Xian Wiped described by MacNeish *et al.* (1998:24). They said "Some of the sherds, although originally called Xian Plain, were found on closer examination to have surfaces that had been both wiped and jabbed before being often smoothed over... These early sherds, all designated Xian Slab Ware, had large quartz temper, were poorly fired, and were formed in ascending tiers of rectangular slabs joined together to form flowerpot-shaped or deep hemispherical vessels. Decoration was by notching lips and punctuating from the inside out to form exterior nodes. Xian Wiped and Xian Wiped and Jabbled are the basic types defining the earliest Ceramic phase at Xian Ren Dong, and they may prove to be China's earliest ceramic types" (MacNeish *et al*. 1998:47, Fig. 18).

Cord-marked and basket-marked pottery show up soon after this earliest South China pottery, as does net-marked, plain, incised, burnished, and with appliqué. All of these varieties are latter present in Spirit Cave in Thailand by about 8400 BP (uncorrected; Gorman 1970:96-101, Pl. V; Solheim 1998:70, 2006).

The First Pottery in Taiwan and Island Southeast Asia

The earliest pottery in Island Southeast Asia is similar to this changed early mainland pottery, such as plain, and cord, or basket marked. This earliest pottery varies a bit from location to location, some places with only plain sherds recovered, others including several varieties of bound-paddle impressed. This pottery is not well dated but could be as early as the fifth millennium BC. It could be that soon after this earliest pottery, several new additions were added. The most common, and widespread, are red slipping and then small lime inlayed impressed circles. At some sites, varieties of impressed bound-paddle and simple carved-paddle were associated and a variety of incised and impressed patterns as well. These sherds with incised or impressed patterns always

made up a very small percentage of the pottery recovered with the plain or impressed bound-paddle the common pottery.

It had long been felt that the earliest pottery in Island Southeast Asia was that of the Corded Ware Culture of Taiwan which had been found in bottom layers both in the south at Fengpitou and in the north at Tapengkeng. While there are no ^{14}C dates for this culture, it was earlier than the following Yuanshan Culture which started at about 2000 BC. (Chang *et al*. 1969:213). The latter part of this culture at Fengpitou included some pottery that Chang named Fine Red Ware which he provisionally dated to about 2400-1900 BC (Chang *et al*. 1969:124). The common Corded Ware had varieties of basket- and cord-marked surfaces and possibly impressions from a net-wrapped paddle and the Fine Red Ware had rare carved-paddle impressions as well (Chang *et al*. 1969:81, 94, Pls. 17, 25, 84E, and G). Red slipping was not common and was applied "... after smoothing and before the cord impression..." (Chang *et al*. 1969:59).

There is almost certainly earlier pottery in the Philippines, Indonesia and possibly even in Micronesia than so far dated in Taiwan, but the dating of this pottery in all cases, as far as I know, is either questionable or controversial. I have heard that an excavation in the mountains of one of the western high islands of Micronesia has come up with dates as early as 4000 BC. I do not know that this has been published or whether there is early pottery as well.

I will not go into the dating of early pottery in the Cagayan Valley of Northern Luzon as it is very complicated, with many dates. I hope that the paper by our host, Tsang Cheng-hwa, will include the latest information about the dating of early pottery in the Cagayan Valley. A controversial calibrated date of 3938 BC ±220 for Dimolit (Bronson and White 1992:478; Peterson 1974) on the east coast of Northern Luzon will soon be checked out by Peter Bellwood. About 30 percent of the pottery from this site was red slipped. From the north coast of Masbate in the Visayan Islands of the Central Philippines, Bay-Petersen (1982, 1982-1983:81-83) reported a Buff Ware that is similar to the plane ware at what she calls the contemporaneous site of Dimolit. Bronson and White (1992:478) gave the calibrated date for Bagumbayan, the Masbate site, as 4282 BC ±100.

Several varieties of the early pottery are present in west coast Palawan sites; however, the earliest sites have no dates. The well-known

Tabon sites do not have the earliest pottery. This has been recovered from sites to the north of the Tabon caves. This pottery includes cord-marking, carved-paddle impressed with simple patterns, and rare incising (Fox 1970:62), and Fox considers the sites to be late Neolithic dated "... at least 1000 to 1500 BC and probably earlier". I have been making preliminary testing of an impressive rock shelter inland from the sites where Fox recovered this earlier pottery and I have recovered red-slipped pottery with early style incising and impressed decoration. I suspect it will go back before 2000 BC; however, we have found no good material for dating as yet.

The earliest pottery with accepted dating in Island Southeast Asia included paddle-impressed with basket- and cord-marked, plain and rarely burnished surfaces (Datan and Bellwood 1991:394, 1993:100; Fox 1970:1008, Fig. 31b-c, Pl. XVI except lower left; Glover 1986:67; B. Harrisson 1967; Solheim 1982:38, 45).

Some sites in Borneo have pottery earlier than the accepted dates from the Philippines. Gua Sirih is a moderate sized cave inland from Kuching, Sarawak. I had excavated there in 1959 as sort of a gift from Tom Harrisson and recovered considerable amounts of pottery with good, visible stratigraphy. Harrisson visited only once during the excavation. From an upper level, a Chinese coin of rather late date was recovered and I collected a good charcoal sample from a moderate level. Harrisson had this dated and it gave a date of only 425±150 (M-1029). Harrisson, not realising that further back in the cave, there were much deeper cord- and basket-marked pottery as well as red-slipped and early type impressed and incised decoration with lime inlay toward the front (Solheim *et al*. 1959, 1982:38-39), felt the site was all quite recent. We also found a modeled head of an animal that had broken off a larger earthenware object (Solheim *et al*. 1959: Pl. IX).

Ipoi Datan and Peter Bellwood (1991) excavated there again and recovered cord- and basket-marked pottery, as I had (Solheim 1982). They, however, were able to date the wrapped-paddle impressed sherds at 2334 BC cal. (Bellwood *et al*. 1992:163, 176; Beavitt *et al*. 1996:29). They felt that a reasonable beginning date for pottery at Gua Sireh is 5000 years ago. [I suspect that the first cord-marked pottery reported from the site of Gua Bungho, Sarawak (Harrisson and Tweedie 1951) may be as early as the cord-marked pottery of Gua Sireh.] "The 1989 excavation yielded only two red-slipped sherds and only one with incised and stamped circle

decoration" (Datan and Bellwood 1991:394-395). No mention was made of what level these sherds came from or their association. With this early date not fitting Bellwood's reconstruction of the spread of Austronesian speaking people, he felt it was associated with people speaking one of the Austro-Asiatic languages. For me, this is just further confirmation of earlier pottery than that reported from Taiwan, made by people speaking a Malayo-Polynesian language. Obviously, we do not know what language they spoke. Recently, I have heard that my notes, photos, and the collections of my 1959 excavation have been found. I had an Asian Public Intellectuals grant to work on this material in 2004. The report on this exciting material is moving along.

In Sabah, northern tip of Borneo, Bellwood (1989:136) has reported from Bukit Tengkorat "...the other Early Phase pottery from the site (Figure 3) is mostly plain or red-slipped without any other decoration apart from occasional incision or punctation (including small circles). Cord-marking and carved paddle impression is absent, and vessels generally have thin bodies and fairly short rims. Not surprisingly, they are paralleled quite precisely in the Early Atas Phase assemblage at Agop Atas, Madai (MADI, c. 2750 cal BP, Bellwood 1988:178-9) and in the early pottery assemblage from the rock shelter of Leang Tuwo Mane'e in the Talaud Islands (c. 4500 cal BP to c. 2000 BP; Bellwood 1980: Figure 19). These assemblages all fit quite comfortably within a Neolithic tradition of plain or red-slipped pottery reported through the Philippines and around the shores of the Sulawesi Sea" (Bellwood 1985:222-7). Later, Bellwood (1997:224) revised this dating for Bukit Tengkorak saying; "The lower layer in this shelter, dated between 1000 and 300 BC, yielded red-slipped pottery with plain or incised pedestals... The upper layer in Bukit Tengkorak, also pre-Metal, produced more floridly decorated pottery with much incision, rim notching, cord marking, and paddle impression."

In 1998, however, Stephan Chia (n.d.) presented a paper at the Singapore Symposium on Pre-modern Southeast Asian Earthenware in which he suggested dating for pottery at this site on charcoal as early as 4340 BC. This pottery from Bukit Tengkorak in Eastern Sabah (Figs. 7d-f, 9a-b, and d-j) has impressed designs similar to the small circle and associated decoration of the early pottery found elsewhere. The earliest pottery found by Chia (n.d.) was red slipped and plain. Obsidian from a Lapita source in northwestern Melanesia was reported by Bellwood (1997:224) indicating continuing contact—not necessarily direct—between Melanesia and Sabah. Bellwood (1997:227) goes on to say: "Both phases at

Bukit Tengkorak are rich in fish bones and these, plus the obsidian, pottery stoves (used ethnographically by sea nomads in the Sabah-Sulu region), and shell ornament manufacture indicate that the Bukit Tengkorak people were adept seafarers—and perhaps traders."

This site is not far from the Sanga Sanga Rock Shelter in Zamboanga, Philippines with a questionable calibrated date for its early pottery of 5522 BC (Bronson and White 1992:478; Spoehr 1973). In a re-excavation of Sanga Sanga Rock Shelter, Ronquillo *et al*. (1993) reported early style pottery at a similar date. The calibrated dates given by Bronson and White (1992:478) for the earliest pottery in Indonesia are: Ulu Leang 1 -3132 BC, Leuwillang-3047 BC, and Uai Bobo 2-2160 BC.

Ian Glover recovered some of the early style pottery in eastern Timor and dated the horizon in which this was found between 4500 and 3700 years ago (Glover 1986:186, 212). "I have suggested that the two main prehistoric events in Timor revealed by the excavations were the introduction of pottery together with several introduced foreign, perhaps domesticated animals, starting about 4500 years ago" (Glover 1986:204).

Varieties of Surface Decoration

I have mentioned several times above the presence of red-slipping and impressed circles in the early pre-Sa Huynh Kalanay Pottery.

> "Soon after this plain pottery entered Island Southeast Asia, red-slipping, with the addition of small stamp impressed elements such as circles, often inlaid with lime such as these from Gua Sirih, Sarawak (Pl. IIa; Solheim *et al*. 1959; Pl, VIIb, c, e), joined the plain surfaces at some sites. In the Marianas Islands where this was first reported (Pl. Ib; Spoehr 1957: Fig. 56; Pellett and Spoehr 1961), it was named Marianas Red. I had connected this with movements of the Nusantao when I hypothesised that "... shell and stone tool tradition was carried into the western Pacific (Melanesia and northwestern Micronesia) by an early Nusantao people, probably well before 4000 BP, and that possibly at around 4,000 BP, a red-slipped and plain pottery, some with lime filled, impressed circles often with punctation in the centre, was added to the shell and stone tool tradition in some areas through further contact with the Nusantao of eastern Island Southeast Asia" [Solheim 1976(a); 1976b; 2006].

While the red-slipping and impressed circles inlayed with lime are early, they are not definitive as such as small impressed circles, and possibly lime inlay, continued for a long time in some areas. When I was first defining the Sa Huynh-Kalanay Pottery Tradition in a paper presented in 1961 (Solheim 1967:17) I included impressed circles inlayed with lime. By 1964, I had realised that there was something unusual about this combination. At that time, I (Solheim 1964b:199) said that the use of small impressed circles in various patterns was unusual, some of these patterns including the lime inlay on red-slipped pottery. I finished this brief discussion saying "Although we know of only two or three sherds showing this use of impressed circles, their association with other pottery of the Sa-Huynh-Kalanay tradition makes it logical to consider this as a decorative form belonging to the tradition." We can now see that while the impressed circles are a part of the Sa Huynh-Kalanay Pottery Tradition, they were in use with the lime inlay for a long time before the tradition could be recognised. (I have hyphenated the name of this tradition in different ways at different times. I now use "Sa Huynh" as two words as done in Viet Nam.)

This combination of red-slipping and impressed circles inlayed with lime has been found over a very wide area in Island Southeast Asia and into the Pacific. Listing general areas where it is early in the sequence of early sites we see it in: Taiwan, the Batanes Islands about halfway between Taiwan and Luzon in the Philippines just north of Borneo, in Borneo, Sulawesi Indonesia, in the Marianas Islands of Micronesia, and with Lapita pottery in Melanesia. I have presented the details of this distribution (Solheim 2006).

Richard Shutler, Jr. presented a paper at a colloquium in 1996 entitled "The relationship of red-slipped and lime-impressed pottery of the Southern Philippines to that of Micronesia and the Lapita of Oceania," published in 1999. I was not acquainted with this paper until Shutler sent me a copy early this year with many other publications as well. At the time he presented this paper, he suggested the possibility that this pottery decoration may have started at the site of Sanga Sanga in the far Southern Philippines. He presented this in his summary (1999:527) and the primarily eastern Island Southeast Asia, Micronesia, and Melanesia distributions of this decoration. Peter Bellwood (1997:961) also summarises the wide distribution of the red-slipped pottery and ends this discussion by saying "Since the 1970s I have favored the view that this cultural complex can be equated with the expansion of Austronesian

communities from Taiwan through Southeast Asia, a process which, in terms of current ^{14}C profiles, occurred mainly around and after 4000-3500 BP (with the possibility that dates closer to 4500 BP will eventually be established for the Philippines)."

The many sites in Island Southeast Asia, Micronesia, and Melanesia that have the red-slipped pottery with, at times, lime inlay in small impressed circles and occasionally in incised decoration also have a number of different associated decorations that vary from area to area. While these other decorations vary from site to site, many of them are found in several of the widespread areas. I will only list these here as the details are presented in my book (Solheim 2006).

"Straight incised lines or lines made by punctations or short dashes often form borders of 'V' patterns in varying modes." These have been found in Taiwan, northern Luzon, southern Mindanao, and Masbate in the Philippines, in Sarawak, Sulawesi in Indonesia, and in several islands in the Marianas of Micronesia. "Rectangular or other patterns may be emphasised by punctations." This is noted from several islands in the Marianas, northern Luzon, Masbate, and Sulawesi. I am sure that this is found at many other locations. "Short straight lines are present in vertical or diagonal patterns made with a multiple toothed tool (comb impressed or dentate stamp..." from Marianas and Masbate. "Triangular patterns are often hachured and/or with small circles or semi-circles at their apex, triangles varying to joined, curved, open at bottom to straight lines with circle at one end" from Taiwan, northern Luzon, Sulawesi, the Marianas, and Masbate. "Rather rare, but found at Gallumpang and Ulu Wae on western central and southern Sulawesi and in the Marianas Islands ... are impressed half circles in varying patterns, often in two pairs of opposed horizontal rows alternating the openings between rows so that they form interlocking half circles or in interlocking, horizontal 'S's. Also, several of the above patterns are often found on rims or immediately below them" from northern Luzon, Sarawak, Sulawesi, and Marianas.

The dates for the early levels of sites with this pottery run from the 2nd to the 6th millennium BC. The 2nd millennium dates are rare, the 3rd are more common, the 4th are common, the 5th are uncommon, and the 6th are very rare. I find the 6th millennium dates as hard to believe, the 5th as possible, and from the 4th to the 2nd as acceptable. The acceptability, of course, depends on the site itself. All of these dates after the 4th millennium are probably a bit too late to be directly connected

with the Late Hoabinhian pottery from coastal Viet Nam. For the plain and wrapped-paddle pottery of Southeast Asia, however, these types if dated from the 4th millennium BC or earlier could have been made by Late Hoabinhian potters. The only archaeological culture following the Hoabinhian and Bacsonian Cultures in Viet Nam that *may not* have pottery developed out of one or both of these two cultures is the Da But followed by the Quynh Van Culture, both of which had pottery quite distinct from all the other Vietnamese Neolithic cultures. This pottery was primarily very large vessels with straight sides and rounded or pointed bottoms (Solheim 1980:13), similar to the common forms of the early Korean and Jomon pottery of Japan. This could be associated with the Hoabinhian-type sites with Hoabinhian stone tools reported in Japan (Solheim 1994a, 2006).

The Probable Origin of the Pre-Sa Huynh-Kalanay Pottery

Sites in the Hong Kong area along the coast and in southern Viet Nam have been reported with red-slipped pottery and impressed small circles. These sites also have pottery with several of the other elements of pottery decoration associated with the red-slipped and impressed small circles of Island Southeast Asia. As the sites in Viet Nam with this pottery were excavated and reported long before ^{14}C dating, there is no reliable dating for them. It can only be said that they are Neolithic and so likely to be before 2000 BC. Sites in the Hong Kong area have dates and a site up the coast a short distance in China was excavated long before carbon dating but its pottery is very similar to that from the dated sites in Hong Kong.

Edmond Saurin (1940:85; Pls. 23/10-11, 24/7-9, 25/3-7; 86-89 and Fig. P.88, Pl. XXX) reported cord-marked pottery, small impressed circles, and comb impressed lines (dentate stamp) from several areas in North Annam, Viet Nam, He noted red slipping (87), and though he did not mention it, the sherd pictured in Plate XXX No. 6 looks as though the diagonal lines may have been inlayed with lime.

He footnoted similar elements of decoration from several other sites in Viet Nam and Cambodia. One of these, reported by Madeliene Colani (1928:29, Pl. UV-11), told of a sherd decorated with small, impressed, double circles bordered by straight lines. From this site, there were sherds with basket impressions and one with a band of alternating 'V's bordered by straight lines (Colani 1928:Pl. UV-14, and 19). These

were from a cave site that when it was in use by those who deposited the sherds, it was close to the shore of the Bay of Tonkin and a marine shell midden was a part of the site. This site is now about 20 kilometres from the shore (Colani 1928:23).

Colani (1940:179 Fig. 2, Pls. LVI top, LIX, and LX) reported a design she saw in Viet Nam and Laos early in the 20th century that was the same as one of the somewhat complex pottery designs found widely on the early Island Southeast Asian pottery. She illustrated jewelry from these ethnographic situations decorated with hachured triangles and a small circle at the top. This was said to be a symbol of the sun. She also reported this same design from ancient Sin-la on an early historic earthenware jar (Pl. LXe).

Raphael Maglioni (1975), a Catholic priest stationed in or near Hong Kong from 1928 until his death in 1953 (a few months before the reorganisation of the Far Eastern Prehistory Association at the 8th Pacific Science Congress in Manila where I would have met him), made surface collections from archaeological sites in eastern Kwangtung, near the coast. One of these sites from which he defined the Son Culture he considered as an early Neolithic site and gave a guess estimate date of 4000-3000 BC (Maglioni 1975:36).

> "The pottery from this site he divided into two general types: a coarse cord-marked pottery with comb-incised or roulette patterns over the cord-markings (32-33 Fig. 6 top, these simple patterns included hachured triangles) and a fine incised pottery including incised elements of small circles in lines, small concentric circles, hachured triangle, alternating short diagonal lines in bands on foot-rims and other patterns. Some of this pottery had painted decoration on the foot rims (32-36 Figs. 6 bottom, 7-8). ... The diffusion of Son material, which is found only along the sea, suggests a very early immigration of Neolithic people (Maglioni 1975:36)" (Solheim 2003).

"The incisions are very shallow, of fine, regular and delicate work, and seem to have been made with sharp points, combs, and shells, only on the rims and shoulders of the vessels. There are several kinds of lines, incised or imprinted, straight, curved and wavy, continuous and dotted, sometimes alternated with small circles, or arranged into triangular or other geometrical figures, with a great variety of designs, showing an

advanced artistic taste (Fig. 6, above). In many fragments the paste, though originally black, is yellow at the surface; this seems to be produced by a pigment washed on (before baking)" (Maglioni 1975:32). The black 'fragments of paste' is, of course the result of carbon in the clay body that was not oxidised during firing. The pigment washed on to produce a ''vivid red colour'' was the red slipping that is so important in the early Island Southeast Asian pottery.

William Meacham in his introduction to this book attempted to equate the many cultures defined by Maglioni with the archaeological cultures established in Hong Kong. He stated that "The relationship between Maglioni's Hoifung finds and material from Hong Kong is even more problematic. The exception is Son which correlates in both pottery and stone assemblages so clearly with the pre-geometric culture known stratigraphically from Tung Kwu and Chung Hom Wan, as well as at Sham Wan" (Meacham 1975:12).

> "Even without the aid of stratigraphy revealed by excavation, Maglioni was able to reconstruct a culture sequence which, in its basic outline, still stands today. Indeed, it would be more than thirty years after the first published account of this chronology that his proposed 'First Neolithic' culture (Son) was demonstrated stratigraphically to precede the others. The pre-geometric levels recently excavated at Sham Wan on Lamma have yielded material almost identical to that of Son.
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> In addition to establishing a relative chronology for the area, Maglioni was able to estimate with remarkable accuracy ages of the prehistoric cultures. He put Son in the period 4000-3000 BC, a time frame entirely consistent with current evidence" (Meacham 1975:11).

The chronology of the Hong Kong Archaeological sites is based primarily on pottery. The earliest occupation of the Hong Kong area was that of the Painted Pottery Culture. On the basis of a considerable number of ^{14}C dates Meacham (1994:268) gives a weighted average for the Painted Pottery Culture of around 4000-3700 BC. "What is still totally lacking is any evidence on the period 4500-4000 BC which probably witnessed the early development of painted pottery in this region" (Meacham and Contributors 1994:269).

The painted pottery has rarely been found totally separated from

the following early chalky ware pottery, which equates with Maglioni's Son. It has been found without overlap in Sham Wan Tsuen East Valley (Meacham and Contributors 1994:237, 239, Fig. 8.12) and one or two other sites. Most of the painted patterns are quite indistinct and some appear to have some of the designs found done by incising and impressing in the chalky ware pottery. While the pottery of the two cultures is clearly distinct, I suspect that there was a bit of an overlap in time of the two cultures, and together they constitute what for Hong Kong is called the Middle Neolithic. The site from which the chalky ware pottery was well defined produced the Sham Wan phase of the Middle Neolithic of Hong Kong. "Chalky Ware in Assemblage F" is how this Son-like pottery is referred to in the Sham Wan Site and is best reported in the published site report (Tsui and Meacham 1978:142-149). Good illustrations of the relevant Chalky Ware plain and incised decoration from sites on Chek Lap Kok Island can be found in the work of Meacham and Contributors (1994:154 Fig. 5.30, 144 and 145 Fig. 5.19 and 5.20). Usually, the incised decoration is found on the ring feet of vessels but whole vessel KLW 16, illustrated in Figure 5.20 has a typical Southeast Asian horizontal panel incised on the shoulder including lines of impressed, small circles bordered by straight lines and one line of the paired impressed half circles in opposed horizontal rows alternating the openings between rows so that they form interlocking half circles. Meacham (1994:269) dates the Sham Wan phase to 3600-3300 BC based on several carbon dates.

The Sites

The sites reported from Viet Nam were on sand dunes near the coast when in use, but now are well inland. This would indicate that these sites were in use during the climatic optimum with higher sea level of about 5000-3000 BC. Rather than summarising, I quote extensively from an earlier report of mine on sites in Taiwan and near Hong Kong (2000:278):

> Tsang Cheng-hwa (1992) has recently reported on his extensive excavations on the Penghu Islands... off the west coast of southern Taiwan. These would be a logical stepping stone between the south coast of China and Taiwan. The earliest dating for the Dapenkeng on the islands, however, is around 5000 BP, following the lowering of sea levels after the Middle Holocene Transgression. During the Middle Holocene Transgression very little of these islands would have been

above sea level. It appears likely that the first Dapenkeng settlements on Taiwan were earlier than this and in the southwestern coastal area of Taiwan.

Tsang reports that the artefacts and dates of the Dapenkeng Culture on Taiwan and the islands are much the same as those from the sand dune sites on the opposite Fujian and Guangdong coasts, suggesting that the most likely source of the Dapenkeng Culture is in that area: 'By 7000 years BP or later, these cultures, characterised by cord-marked, basket-marked, shell-edge-impressed and painted coarse sandy pottery, chipped pebble tools, and roughly polished axes and adzes were formed on the southeastern coast of China' (1992:269). Tsang further writes that the finds from these coastal sites, on shell mounds and sand dunes, indicate that fishing, hunting, and gathering were the most important economic activities, with some cultivation added to these. [I should mention that crenellate shell-edge impressed pottery was recovered from several of the early pottery sites in Island Southeast Asia, like those from Sulawesi (Mulvaney and Soejono 1970:Pl. VIb and VIII).]

Tung Wan Tsai is a site of this sort in Hong Kong. 'The variation in the cultural deposits reflects the potential range from ... use of the site as a minimal short-term encampment to a longer-term base camp by maritime adapted peoples under changing circumstances' (Rogers *et al*. 1995). Concerning the material culture of the people using this site, Roger *et al*. (1995:150) continues, 'A maritime adapted toolkit will be filtered to suit a mobile lifestyle where numerous possessions would be a burden, with a resulting material culture that is small, multi-purpose and easily transportable.'

The pattern of this site has been found at numerous sites in Hong Kong: 'scattered and isolated deposits, often small and exhibiting a high degree of maritime dependence; a conservative material culture of unmodified or minimally modified pebbles and a tradition of continuing coarse ceramic types; and a lack of structural or midden features. This pattern is found on sandbar sites dating from the mid Neolithic onwards' (Rogers *et al*. 1995:150). Starting in late Bronze Age

> times and continuing well into the Han dynasty, Tung Wan Tsai's '... evidence points to the casual and temporary structures characteristic of a mobile boat-based population...' (Rogers *et al*. 1995:151).

How Did This Pottery Reach Such a Wide Area in such a Short Time?

I believe that I have shown a reasonable likelihood that the Pre-Sa Huynh-Kalanay Pottery of Island Southeast Asia had its beginnings along the coast of Mainland Southeast Asia. No one area of this long expanse can be pinpointed as the specific homeland. I suspect that there was no specific original location but that much of this coastal area saw this development over a period of a few generations. I turn to my Nusantao Maritime Trade and Communication Network for the development of this pottery style and spread.

I have suggested elsewhere (first in 1972:528) that the patterns and elements of decoration of the Sa Huynh-Kalanay Pottery Tradition were also used on bronzes, stone carving, basketry, mats, cloth, tattooing, bark cloth, woodcarving, among others. The organic materials on which these decorations were used only remain in exceptional waterlogged sites, of which extremely few have been excavated in Southeast Asia. As a result, we have only seen it in prehistoric situations on the bronzes (Dongson), stone-carving (stone burial jars and sarcophagi), and pottery. Ethnographically, these decorations have been reported in many different mediums. These decorations were undoubtedly used for hundreds or even thousands of years in Mainland Southeast Asia on pottery and the other mediums before they show up in Island Southeast Asia and Micronesia on the pottery, stone carvings, or bronzes. On the mainland, and later in the islands, these decorations were no doubt interacting and evolving together. When I first thought of this relationship between pottery decoration and decoration on other mediums, I did not suggest a name for it (1972:530). D. Fraser (1974) suggested the term "Old Sinitic Complex" (OSC) for the pre-Shang art of China. Recognising the difference between this art style and the art style of Southeast Asia, I suggested the title "Old Southeast Asian Complex" (OSEAC) for what I have been discussing above (Solheim 1979:195; 1984-1985:85; 2002).

Many of the elements of designs using and organisation of this early pottery decoration continued into the Sa Huynh-Kalanay Pottery Tradition and the Lapita Pottery Tradition. "The explanation for these

patterns (of the OSEAC) on the Sa-Huynh-Kalanay pottery is logical, in the above interpretation: the patterns are simply a part of the culture(s) making the pottery and it became the fashion to put these patterns on pottery but never in a closely defined and rigid way" (Solheim 1972:529).

I have felt that there probably had been a pre-pottery movement of Pre-Austronesian (?) speakers into northwestern Melanesia. This would have been sometime during the 6th millennium BC, or possibly earlier, and would have brought with it much if the style and contents of the OSEAC as used on organic materials. Thus, when the Nusantao Maritime Trading Network expanded into this same area bringing with it the Pre-Sa Huynh-Kalanay Pottery technology sometime in the late 5th or the 4th millennium BC, it would have found a related art style already present among a relatively sparse population.

The dating in Northwestern Melanesia is earlier than in Southeast Asia for considerable use of shell for ornaments and artefacts, including the Tridacna shell adze. There appears to be movement of this shell technology back into Island Southeast Asia and in a few areas Mainland Southeast Asia well previous to 3000 BC. If the people bringing this shell technology back into Southeast Asia were not pre-Austronesian speakers but spoke some variety of the earlier Melanesian or New Guinea languages, there should have been some indication of this in the developing Malayo-Polynesian languages later.

By my hypothesis, these maritime people bringing back the shell technology to Island Southeast Asia would have been the first maritime explorers coming from southern coastal Viet Nam into northwestern Melanesia but not leaving an easily discernable trail. The primary focus of their economy would have been on the sea, and while they were knowledgeable about horticulture and arboriculture, they made little use for these, as it was so easy to live off the sea. While they expanded and explored to the east rapidly they did not develop a population explosion. When they got out to northwestern Melanesia, they ran out of sources of stone for their tools that they were used to so the shell tools and technology were developed in place of the stone. While they were becoming acquainted with shell, they also developed shell ornaments as well. They would have been living mostly on their boats and not have made any major settlements on land that could be easily discovered. They did not burn their bridges behind them but continued their contacts back to the west so that the shell technology that they were developing in

Melanesia they brought back with them to be recovered at cave sites along the coasts where they traveled.

Concerning the early Lapita colonisers, Kirch (1995:267)remarked that "... it is the sophisticated shell-working industry which stands out along with pottery among their technological repertoire. Thus, in our efforts to seek ancestral connections for the Bismarck Lapita population, it seems reasonable to accord this shell industry considerable attention, along with the ceramics." As indicated above, I would hypothesise that this shell technology was developed by the pre-pottery Nusantao people who had been living in this area for many generations.

Duyong Cave, one of the Tabon Caves of west coast Palawan, Philippines， produced a Neolithic burial with four Tridacna shell adzes and two different types of shell ornaments as well as other types of shell tools. No pottery was associated (Evangelista 1963:54, Pl. Ia; Fox 1970:61-64, Fig. 19, Pl. 8). The calibrated ^{14}C date for the burial is 3675-3015 BC and for a nearby fire hearth that also had shell debris associated is 4575-4425 BC (Bronson and White 1992:487, 500). Fox also reported other locations with Tridacna shell adzes apparently without pottery, and a variety of shell ornaments are common in "Late Neolithic" and Metal Age sites over most of Southeast Asia. I visited a museum in the capitol of Fujian, People's Republic of China in 1987 and saw there on exhibit an unpublished Tridacna shell adze that had been recovered from an excavation on a small island off shore in the China Sea nearby. It is the only shell adze that I know of having been recovered in the PRC. At that time, the Chinese had no dating for that site. Cultural Phase III from the site of O-Luan-Pi at the southern tip of Taiwan has also produced numerous shell artefacts and ornaments (Li 1983). Cultural Phase I was the earliest to have some shell tools. This has been dated to around 3000 BC (Li 1983).

If this possible pre-Austronesian movement into northwestern Melanesia and then continuing contact back into Island Southeast Asia is correct, then the expansion of the Nusantao Maritime Trading and Communication Network met up with earlier Austronesian speakers when it expanded east into Melanesia around 1500 BC. It is quite likely that the individual elements, the designs, and the organisation of the designs were, at least to some extent, present in northwestern Melanesia, eastern Indonesia, and southern Mindanao before pottery manufacture was brought in by the Nusantao Maritime traders.

There is further indication of pre-pottery Nusantao maritime traders in Melanesia. Patrick Kirch (1995:268) has stated that

> "The archaeological sequences from late Pleistocene and early Holocene cave and rockshelter sites in New Britain and New Ireland (Allen and Gosden, eds., 1991) have demonstrated that a long-distance obsidian exchange network already existed in this region prior to the Lapita intrusion. The implication is that the initial Lapita colonisers in the Bismarcks were already fundamentally entwined in an exchange economy... Very likely, these Lapita people incorporated an already existing regional exchange in obsidian (and other materials?) as they expanded their own network(s)."

Possibly there were much earlier beginnings of a Southeast Asian Maritime Trading Network than 6th millennium BC.

Probably many of the readers of this paper are not acquainted with my most recent definition of the Nusantao Maritime Trading and Communication Network. I quote my latest definition (n.d.):

> "I have defined, redefined and discussed several times the Nusantao Maritime Trade and Communications Network (1975a-b, 1976a, 1981, 1984-1985, 1992, 1994b, 1996, 1997, 1999, 2000). Amongst other things I added 'Communication' to the title (Solheim 1994b). Also, I originally referred to the people as the Nusantao and included many different varieties of maritime orientation as defining these people. When I use the title 'Nusantao Maritime Trade and Communication Network' I am referring only to a portion of the Nusantao people, such as those involved in maritime trade. There are no clear boundaries between the many different maritime orientations of these people as some of them often change for a time from one orientation to another and at times are involved in two or more of these orientations. As an example a common situation is men being away from their homes for several months fishing, and then trading the dried or smoked fish for money or other materials, but their spouses and children remain at home and tend to the farming. Always the maritime part of this is the unifying element of 'Nusantao.'"

I am suggesting that at least one of the explanations for the apparent rapid movement of both the pre-Sa Huynh-Kalanay pottery and the Sa-Huynh-Kalanay and Lapita Pottery Traditions in eastern Indonesia and Melanesia was that the Nusantao Maritime people had a long seafaring acquaintance with the areas and widespread small sites before they brought in the knowledge of pottery manufacture.

Conclusion

Typical Pre-Sa Huynh-Kalanay pottery appear to me to be extremely rare in Taiwan. Bellwood (1997:215) appeared to associate the Yuan-shan Culture with the ancestry of the Austronesian (Malayo-Polynesian) movement of people for Taiwan south through the Philippines and from Mindanao moving east into Melanesia and Polynesia and west into Indonesia. He included with his little illustration of Yuan-shan artefacts his Plate 30 from Chang *et al*. (1969). Though he makes no reference to them in the text, the only sherds in that Plate 30 that are typical of the Pre-Sa Huynh-Kalanay Pottery are D, E, G, and J. The primary Yuan-shan site produced a great quantity of potsherds. Chang illustrated the sherds of Bellwood's Plate 30, and a few other sherds that can also be considered as Pre-Sa Huynh-Kalanay pottery as well, because they were the only ones from the site like these. In other words, they must have been intrusive in that site, not typical of the site. I do not recall red-slipped pottery being present in Taiwan, other than possibly at O-Luan-Pi.

Kirch (1995:282-283) agreed with Bellwood's model of Austronesian expansion. In his four page (282-285) coverage of Taiwan prehistoric archaeology, he nowhere mentions pottery. He felt (285) that O-Luan-Pi is "... of great potential significance in relation to early Austronesian dispersals..." particularly its Cultural Phase III. I have always felt that this phase was a good example for contact from the northern Philippines to Taiwan.

I, therefore, feel that the typical Pre-Sa Huynh-Kalanay Pottery was not only little represented but also not important to Taiwan cultures. The early pottery from Ta-p'en-k'eng (Bellwood 1997:212 Fig. 7.4) has no resemblance in form or decoration to the Pre-Sa Huynh-Kalanay Pottery that I have presented in this paper. It is a question whether the people bringing the original TPK pottery spoke a pre- or proto-Austronesian language.

I close with a quote from our host, Tsang Cheng-hwa (1992:287). While Tsang is referring in this quote to statements made by Bellwood in his earlier book (1979), I see no indication that Bellwood has changed what Tsang is referring to in his Revised Edition (1997).

> "Based on the current archaeological evidence mentioned above, I do not agree with Bellwood that 'Taiwan is a potentially vital area for the transmission of cultural innovations from the Asian mainland into the islands' (1979:207), if he chooses to 'emphasise the importance of the Corded Ware-Yuan-shan cultural tradition' (1979:207). Since the homeland of this tradition was most likely on the coast of the mainland between Fukien and Vietnam, as I mentioned previously, I would postulate that the Austronesian languages and cultures were probably transmitted into insular Southeast Asia and the Pacific Islands along the eastern coast of the Southeast Asian mainland rather than through the island of Taiwan."

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