A Brief Overview of Current Knowledge on the Eastward Expansion of Early Populations in Oceania: As It Pertains to Problems of East Polynesian Settlement (With Notes on the Possible Influence of Jomon Culture in Oceania)

A Brief Overview of Current Knowledge on the Eastward Expansion of Early Populations in Oceania As It Pertains to Problems of East Polynesian Settlement (With Notes on the Possible Influence of Jomon Culture in Oceania)

Yosihiko H. Sinoto

Bishop Museum

Honolulu, Hawai'i, U.S.A.

Within the vast expanse of the Pacific Ocean in an area known as Oceania exists a myriad of small inhabited islands grouped into four cultural zones; Indonesia, Melanesia, Micronesia, and Polynesia (Fig. 1). Since the advent of European explorations in the Pacific; the question of from where and how the original inhabitants of these far scattered and seemingly isolated islands came has intrigued and challenged the early explorers and the subsequent bevy of anthropologists, archaeologists, linguists, and historians.

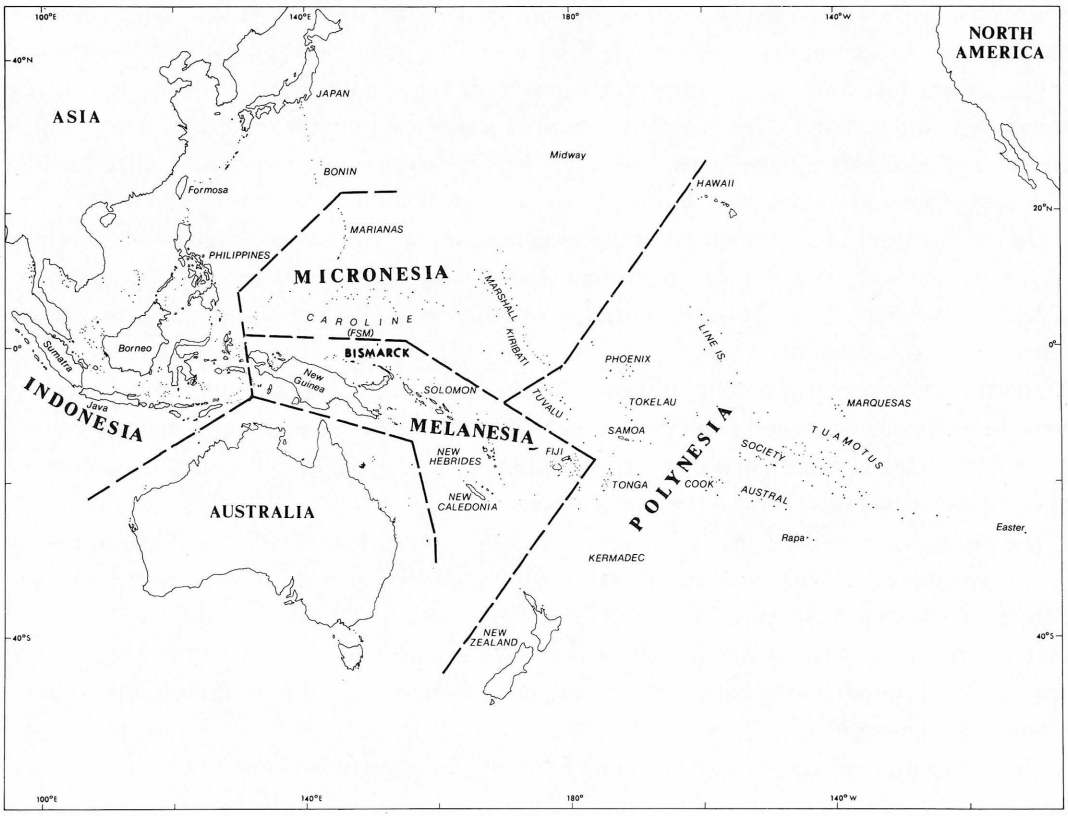

Figure 1 Pacific map with cultural divisions

Through multi-disciplinary research efforts, especially during the last few decades, human movement into and within these areas are beginning to be understood.

Man first entered Oceania from the Asian mainland or the islands of Southeast Asia during the last Ice Age. With the sea level much lower than today, some of the larger islands were separated only by shallow bodies of water. While it probably took some time to gain skills and develop oceangoing technology to cross the small bodies of open water between intervisible islands stretching from Indonesia to the Solomon Islands; by the 50th millennium B.C. the uninhabited regions of Australia, New Guinea, and some adjacent islands were accessible to these early navigators. Their descendants may be the present Papuan and Australian language speaking peoples (Green 1977).

This paper deals with the second such movement by Austronesian language speaking people from Southeast Asia who entered Oceania around B.C. 3000 and eventually occupied all of the islands of Near Oceania and Remote Oceania. Near Oceania includes the land mass of New Guinea and the string of intervisible islands through the Bismarck Archipelago to the

end of the Solomon Islands chain. Remote Oceania lies beyond the sight of land and includes the rest of the eastern portion of Melanesia and all of Polynesia.

The presently known geographical distribution of Austronesian speaking peoples encompasses Madagascar to the far west, Malaysia, Indonesia, Borneo, Philippines, Taiwan, the northern coast of New Guinea, Islands of Near Oceania, Micronesia, and Polynesia to the far east. Five to six thousand years ago, the ancestral seafarers started their eastward movement and reached Near Oceania. This eastward expansion occurred during the post glacial high stand of the sea and efficient ocean-going vessels were needed. Green (id.) pointed out two cultural developments that took place. One was the outrigger canoe with the accompanying maritime technology, which allowed the full exploitation of a new environment and the transporting of people and materials to new lands. The other was a well-developed horticultural technology with root crops and some animal husbandry.

One of the most characteristic cultural items of these people was a distinctive style of pottery decorated with finely-toothed or dentate-stamped motifs that they manufured, now referred to as "Lapita." This pottery was traded together with obsidian which was a limited resource in Near Oceania.

The first discovery of Lapita pottery was made on Watom Island, off the northeast tip of New Britain by a Catholic Missionary in 1909, but no further research was done until 1956 when Gifford and Shutler excavated a Lapita site in New Caledonia. Since then, numerous investigations of Lapita sites have been undertaken.

The non-pottery artifacts in Lapita culture include untanged stone adzes with plano-lateral, Plano-convex, oval, and rectangular cross-sections; shell adzes made from large tridacna clams; shell bracelets and pendants; shell fishhooks; tatooing chisels; and shell beads. Excavation of Lapita sites have provided data on these other items found in association with the pottery and has established the basis for grouping these materials together as a diagnostic cultural assemblage (Green id.).

The archaeological recognition of Lapita sites may be regarded as one of the most important developments in the study of Oceanic prehistory in recent years (Bellwood 1979).

Green postulated that the Lapita-culture bearing people probably established an initial homeland in Near Oceania about B.C. 1500 in the sparsely populated Bismarck and Bougainville region (Green id.). This idea prompted the implementation of an ambitious inter-institutional program led by the Australian National University in 1984 to undertake the search for the Lapita Homeland in the Bismarck Archipelago (Allen 1984, Allen et al. 1984).

Lapita pottery sites, that have been identified to date, number over fifty, and occur on the northern coast of New Guinea, Manua, Massau, New Ireland, New Britain, several small islands of the Bismarck Archipelago, Santa Cruz Islands, Vanuatu, New Caledonia, Fiji, as well as Tonga and Samoa in West Polynesia (Kirch and Hunt 1988).

The radiocarbon dates indicate a rapid eastward expansion. The earliest available Lapita date, c. B.C. 1700, is from Massau in the Bismarck Archipelago, but the date from Tonga, nearly 4,000 km to the east, follows only a century later in B.C. 1600. The majority of Lapita sites date between B.C. 1200 and B.C. 400 (Kirch and Hunt id.) .

The stratigraphic evidence from Kirch's excavations of the Massau Islands sites showed the absence of a pre-Lapita culture underlying the Lapita-bearing strata. The cultural sequence began with a sophisticated Lapita ceramic complex about 3600-2900 B. P. Kirch (1990) post-

ulates that the Lapita ceramic complex did not developed here, but rather abruptly appeared. The implication being that Lapita was not developed in Massau or in the vicinity, but was imported or introduced from somewhere more distant.

The accidental discovery of Lapita potsherds from Western Samoa in the early 1970's presented the possibility of finding more Lapita sites in other parts of Samoa. The Samoa Lapita was discovered under 3 feet of coral deposit in 6 feet of sea water during dredging activities at Mulifanua Harbor in Upolu, Western Samoa (Green 1974). Since then no other Lapita sites have been reported from either American or Western Samoa.

The percentage of Lapita-ware with intricate designs in the total pottery assemblage ranges from only 1% in some areas up to almost 30% in others. The remaining are undecorated. In addition to dentate-stamp decoration; simple incision, applique, and rim-notching techniques are employed. The variety of forms range from shallow plates to round pots.

The Lapita settlements were found along the coastal areas of the large islands and on small off-shore islands. They practiced horticulture and were skillful at preparing living plants for long-distance voyages. The alteration of land for horticultural purposes was already in evidence. They were also exploiting marine resources as a very important part of their daily diet. Very limited hook-and-line fishing was practiced.

Archaeological evidence indicate the development of an internal exchange network maintained by two-way voyages over short distances of up to 600 km. The outcome of such voyaging practices eventually developed into the long distance voyaging characterized by larger ocean-going vessels and the capability to colonize unoccupied small islands much further away (Green id.) . Recent sourcing analysis of obsidian from sites in Massau, New Ireland, and New Britain has shown that the material originates from Willaumez Peninsula on New Britain. This indicates that the long distance exchange network already existed during the pre-Lapita period in Western Melanesia (Allen 1984, and Kirch and Hunt id.).

The investigations undertaken on Lapita sites yielded a tremendous body of knowledge regarding this unique and complex culture. With Lapita pottery as an effective cultural indicator, a general understanding of the settlement of East Melanesian and West Polynesian island groups has been achieved. However, there are still more questions than answers, especially dealing with the ultimate origin of Lapita culture (Spriggs 1984) as well as the earlier sequence of events in West Melanesia.

This useful cultural indicator, decorated Lapita pottery, disappeared through-out Oceania by about B.C. 500 for still unknown reasons. The subsequent disappearance of plainware pottery by A.D. 300-500 in Tonga and Samoa is also still unexplained. The descendants of the first inhabitants of Tonga and Samoa settled for nearly 1,000 years in the region. During that time, Lapita types of ornaments such as shell rings disappeared, but special adze kits were developed in Samoa (Green and Davidson 1968, Green 1971). Such adze kits were eventually carried to East Polynesia. In Fiji, two subsequent pottery cultures followed the Lapita, however, with no influence on either Tonga or Samoa so that the currently recognized cultural boundary between Melanesia and Polynesia may have been established, at the earliest, around this time (Green id.).

EAST POLYNESIA

After nearly 1000 years in the Tonga and Samoa areas, the proto-Polynesian language and Lapita culture of the original settlers had gradually changed into distinctive Polynesian form(s) (Davidon 1988). Then something motivated these islanders to migrate eastward again.

Irwin (1984 id.) argues that pausing 1000 years in West Polynesia is inconsistent with what can be justifiably claimed for the colonization pattern of Lapita culture. They would have continued steadily beyond the area of West Polynesia. He states that the absence of early sites in East Polynesia can be explained in terms of insufficient archaeological fieldwork and sampling error, and the fact that the Lapita could be expected to rapidly turn aceramic. So far there is no evidence to support Irwin's argument and if the sampling error explanation holds true, it may be quite a while before any evidence appears.

Pottery culture in all likelihood did not accompany this eastward migration, other than some pottery in use that were carried along and probably reached some of the East Polynesian islands (Sinoto 1983). To date no evidence of pottery manufacture has been found through-out East Polynesia. To trace cultural movements and establish cultural sequences in the absence of pottery have been no easy task for archaeologists studying East Polynesia.

To present, there have been only seventeen undecorated potsherds reported from East Polynesia, 2 sherds from Uahuka, 4 sherds from Nukuhiva (Sinoto 1979), and also 6 sherds from Nukuhiva (Suggs 1961), and 2 sherds from Hivaoa (Kirch et al. 1988). The majority of these, fourteen, have been found in the Marquesas. The three others were found in the Southern Cook Islands; 1 from Atiu (Sinoto et al, 1987) and 2 from Mauke (Walter, 1990). All of these sherds contain quartz minerals which were sourced from Fiji or other parts of Melanesia (Dickinson and Shutler, Jr. 1974, Dickinson 1988 and ms) indicating that all of the above mentioned sherds originated from non-locally manufactured pottery. It further implies that, as far as we know today, pottery was never manufactured in East Polynesia.

Why pottery culture disappeared in West Polynesia is not known and we probably will never fully understand what happened. One reasonable hypothesis is that the Polynesians' main staple was root crops and cooking such foods using earth-ovens was easier and more efficient than using pottery. Consequently, pottery which was also more labor-intensive to produce was no longer necessary.

The occurrence of such significant changes have been documented at the Urasoko Site on Miyako Island in the southern Ryukyu group. This site belongs to the Late Prehistoric Period of the South Ryukyu Islands. About 2500 years ago, the inhabitants moved from the low hills near the coast to a sand dune area by the sea. The major change in their lifestyle was abandoning the use of pottery and modifying their cooking method at the same time. Numerous remains of earth-ovens with burnt coral pebbles were uncovered from the excavations (The Gusukube Town Board of Education, 1990).

Another reason why East Polynesians never manufactured pottery could be that the pottery-making techniques of West Polynesia probably could not accomodate the use of different clay materials (Irwin id. and Lauer P.K. 1974).

The colonization process starting from West Polynesia could be one of two types of migrations. "Population movement"is the movement of people into areas where they establish the culture of their homeland; and "immigration" is the movement of people into an already populated area, where they eventually adopt most features of their host culture (Rouse 1986).

Based on our present knowledge, no one disagrees with the premise that there were no non-Polynesian people occupying any of the East Polynesian islands. We must therefore consider the eastward movement as a "population movement" into East Polynesia.

Problems of the initial settlement of East Polynesian islands have been debated in recent years (Davidson 1984, Kirch 1986, Sutton 1987). One problem is the lack of diagnostic materials such as Lapita pottery to aid in interpreting the sequence of events, and the other is that the "population movement" process seemed to have taken place much more rapidly than have been anticipated. A good example is the development of the fishhook assemblage in the early Marquesan culture (Sinoto 1979). So far no similar fishhook assemblage has been discovered elsewhere. Therefore I had postulated that the Hane Site, which will be described later, was not the earliest site in the Marquesas, since some time must be allowed for the development of the fishhook assemblage. However if the adaptation and development processes took place much more rapidly than expected, ie. the development of the assemblage was an independent innovation rather than an importation from the outside, the Hane Site may turn out to be one of the earliest sites in the Marquesas. Also the Hane adze assemblage can be directly linked with the Samoan assemblage. Another problem is the extreme low probability of finding archaeological evidence of the first settlers on any given island.

A substitute for pottery is needed to aid in the understanding of the cultural movements and chronological relationships within East Polynesia. The typology of stone adzes have been used for a long time to establish regional sequences, as well as for comparative studies in Oceania and Southeast Asia (Duff 1959, 1977. Green 1971. Suggs 1961). However there was a tendency of adze types to persist for extended periods, in other words, no clear and reasonable time horizons were available to establish detailed local chronology.

FISHHOOK CHRONOLOGY

Having worked extensively with prehistoric pottery in Japan when my involvement in Hawaiian archeology started in 1954, at first I felt a bit lost embarking on a study of a culture that lacked pottery. I set out to search for an adequate substitute. The high frequency of fishhooks recovered from archaeological excavations with variations in size, types, and features motivated me to pursue typological analysis. In the field, I employed stratigraphic excavation techniques based on cultural layers rather than arbitrary levels, the method used at the time in Hawaiian archaeology. With more accurate provenience data, I found that certain forms and features of fishhooks from the Hawaiian Islands could be used for establishing a typological sequence (Sinoto 1959, 1962; Emory, Bonk and Sinoto 1959). Later studies on fishhooks from the Society Islands (Emory and Sinoto 1965, Green et al. 1967), Marquesas Islands (Suggs 1961, Sinoto 1970, 1979), and Mangareva Islands (Green ms) revealed that not only fishhook typology, but also manufacturing methods are useful for establishing chronological and regional characteristics as well as understanding the relationships among the island groups (Sinoto 1968).

Like pottery however, only certain types of fishhooks can be used as a means of interpreting the cultural and chronological relationships among the various island groups. One-piece hooks, due to their wide distribution, are useful for such research. Whereas other types

maybe completely lacking from some of the islands or in some instances the total comparative assemblage may be absent. A good example is the slender two-piece hooks used to establish a typological sequence for Hawaii. Such types have yet to be found from the Society or the Marquesas Islands.

HYPOTHESES OF EAST POLYNESIAN MIGRATIONS

There have been several hypotheses on Polynesian migrations, but the following three are especially noteworthy since they also serve to illustrate the evolution of Polynesian archeological theory:

1) Polynesian oral traditions (Buck 1938) indicated that Tahiti was the dispersal center likened to a head of an octopus from where the migratory waves dispersed like tentacles throughout other parts of East Polynesia.

2) Based on the voyage of the Kon Tiki and the origin of the sweet potato, the possibility of settling Polynesia from South America was raised (Heyerdahl 1950). However, today this hypothesis is discounted by most researchers, but some evidence, mostly indirect, suggest that there was almost certainly some contact between parts of South America and East Polynesia (Davidson i.d.). The chances were much greater that Polynesians reached South America and returned with the sweet potato.

3) The Marquesas Islands has been suggested as the center of the East Polynesian dispersal. (Emory and Sinoto ms, Sinoto 1970 and 1979). This hypothesis has recently been challenged by some archeologists.

Most current hypotheses contend that Polynesian migrations were not as simple as has been postulated by the orthodox theories (Davidson 1984, Kirch 1986, Sutton 1987).

THE MARQUESAN DISPERSAL HYPOTHESIS

Suggs (1961) who conducted the first modern archaeological survey on Nukuhiva Island in the northern Marquesas, uncovered Melanesian types of artifacts, 2 plainware potsherds, and a radiocarbon date of B.C. 124 for initial settlement from the Ha'atuatua Site. These discoveries were unexpected occurrences for East Polynesia. Suggs concluded that there may have been direct contact between Melanesia and the Marquesas.

My work in the Marquesas took place roughly a decade after Suggs'. I located a sand dune site in Hane, Uahuka Island. The excavations yielded two plainware potsherds, Melanesian types of shell artifacts--peeler/scraper and tridacna shell disks, and the adze assemblage of the Lapita plainware period. Along with these artifacts, a number of fishhooks, ornaments, tatooing needles and combs, bone and mother-of-pearl shell harpoon heads, and stone pestles and chisels were uncovered throughout the cultural deposits. I have been using the typological sequences of these artifacts with what I also proposed as "Archaic East Polynesian Culture" with diagnostic artifacts of shaped whale-tooth pendants, toggle-head harpoons, and certain types of fishhooks as the basic reference for those found elsewhere in East Polynesia (Sinoto 1983).

From the series of radiocarbon dates, A.D. 300 was selected for the initial occupation of the Hane Site, because the date is most reliable and consistent with subsequent dates. I divided the Marquesan culture history into four phases. Phase I, A.D. 300-600, Phase II, A.D. 600-1300, Phase III, A.D. 1300-1600 and Phase IV, A.D. 1600-1800 (Sinoto 1969, and 1979), and suggested that the Marquesas Islands could be the dispersal center for East Polynesia (Emory and Sinoto 1965). Later I proposed that the Southern Marquesas was likely occupied from the north during the Phase II Period, and the Northern Marquesas during Phase I or early Phase II gave influence to the Society Islands and New Zealand. The Southern Marquesas during the Phase II Period gave influence to Easter, Mangareva, Henderson, and Pitcairn Islands (Sinoto 1979). Results of recent research at the Hanamiai Site on Tahuata Island, Southern Marquesas indicated that the material culture and the radiocarbon dates fit well into the Phase II context (Rolette 1989).

Kirch (1986) argued that Suggs' charcoal sample was recovered in situ and probably dates the initial settlement for the Marquesas to be likely by the second century B.C. Also with the recent radiocarbon date of B.C. 150 from the bottom layer in Ana Pua cave site, Ua Pou (Ottino 1985), a B.C. 200 date for the Marquesas seems to be accepted by some archaeologists. However I still feel that the validity of both samples can still be questioned. Also if the initial settlement had been that early, there should be more evidence of pottery culture in the Marquesas.

CURRENT HYPOTHESES

Most of the current hypotheses contend that there were many migration waves to various island groups other than the Marquesas so that areas of initial contact was not necessarily limited to one island, but broader areas were contacted, such as from the Cook Islands area northward to Tahiti and the Marquesas, and southward to New Zealand (Davidson id. Irwin id. and Kirch id.) . The recent discovery of potsherds in the Cooks may indicate such early contacts. However, such occurrences are to be expected with the possibility of finding potsherds even in Tahiti, but such sporadic contacts, I believe, would not have had enough impact to develop an "Archaic East Polynesian Culture" which evolved into the subsequent cultures.

Another view states that insufficient research in Tahiti, Tuamotu, Easter and Cook Islands have so far missed the much earlier pottery sites.

Kirch has theorized the possibilities of the submergence of early sites in the Society and Cook Islands, so that sites such as Vaito'otia and Fa'ahia may not be the earliest sites in the Society Islands (Kirch id.). However, submergence of the early sites needs additional scrutiny. Geological surveys in East Polynesia indicate that 2-3 thousand years ago the sea level was 2-3 meters higher than the present level (Savalt 1970), An example is Mangaia in the Northern Cooks where the sea level was 1.3 meters higher than today about 5000 years ago (Yonekura et al. 1986). If this was the case, we then have to look for early sites in areas of higher elevation or more inland than the present coast. However there seems to have been regional variations of tectonic submergence that occurred along the windward coast of the Society Islands at least during the last few hundred years. This is an area where more coordinated multi-disci-

plinary efforts are needed to fully understand the past environment.

I also agree that the earliest sites in the Society (Sinoto 1988) and Marquesas Islands probably have not yet been found (Sinoto 1979). However, in view of the potential rapidity of "population movements" and the extremely low probability of encountering early contact sites, both discussed earlier, I feel that the absence of earlier sites from the current archaeological record may not simply be attributable to environmental changes such as sea-level.

INITIAL SETTLEMENT OF THE MAJOR EAST POLYNESIAN ISLAND GROUPS

Hawaiian Islands

Altough several earlier dates have been recorded, still the earliest generally accepted settlement dates for Hawai'i come from O18, the Bellows sand dune site on O'ahu. The dates range from A.D. 323-447 for Layer III, A.D. 650-757 for Layer IIa and A.D. 770-1012 for Layer II (Tuggle et al. 1978). The untanged reverse-triangular and plano-convex stone adzes as well as fishhooks which were found from the site do not necessarily coincide with the early Marquesan forms. Similar hook types were found in the later Hawaiian sites especially on O'ahu. It seems necessary to carefully reexamine and compare the material culture with other sites. The Bellows adze types are similar to those found from Vaihi Site, Raiatea, Society Islands (Semah et al. 1978) and from Nihoa (Emory 1928). The dates of the Vaihi Site is A.D. 1200 and the dates of Nihoa is A.D. 890 and A.D. 1436 (Emory et. al., id.). Although the Bellows dates are old, the material culture is not necessarily as old. Thus the sand dune site may not be as old as claimed.

If the early dates of the Bellows Site is accepted, then the Marquesan dates must also be pushed back. Although I am still not convinced of the B.C. dates for the Marquesas, I would not at all object to such dates if there were substantiating archaeological evidence.

Fishhook typological sequence established for the South Point area is still important for Hawaiian prehistory. The date of about A.D. 700, for the beginning of the Pu'u Ali'i sand dune site, may still indicate the initial settlement period for the Hawaiian Islands. The Halawa Valley site on Moloka'i Island has been placed earlier than the Pu'u Ali'i sand dune site (Kirch 1975a and b), but the rather incipient fishhook types from Halawa can be included in the South Point fishhook typology.

Recently Dye (1989) summarized the body of research on Hawaiian prehistory . He discusses some of the current research that challenge the more orthodox hypothesis of migrations from Marquesas and Tahiti.

Society Islands

For the Society Islands the chronological sequence appear to be clearer than for Hawai'i. The material culture of the Vaito'otia and Fa'ahia Sites on Huahine provides good supporting evidence of the close relationships between the early Marquesas and the Society Islands. Although, as previously stated, the two Huahine Sites may not necessary represent the earliest culture in the Society Islands (Sinoto 1988).

The Vaito'otia and Fa'ahia are both water-logged sites and are located in the northern por-

tion of Huahine Nui Island. These sites were accidentally discovered during hotel construction. For the first time in East Polynesia, parts of a large ocean-going canoe including two 23-foot long side-planks, a 12-foot long steering paddle, and a 35-foot long mast were uncovered. The artifact assemblage of stone adzes, fishhooks, pearl shell scrapers and graters, and shell and bone ornaments, are almost identical to those of the early Hane Site. The radiocarbon dates range from A.D. 700 to 1150. There could be a site of initial settlement for Vaito' otia or Fa' ahia which may be older than the available dates. Such an old site may still exist under the hotel buildings or have already been destroyed by hotel construcion (Sinoto and McCoy 1975, Sinoto 1988). Whether or not the possibility of earlier pottery-bearing sites in the Society Islands exists, the close affinity between the Marquesan and the Society Islands culture at the time of the Huahine Sites cannot be denied.

The human burials and offerings found from Motu Te Tiare, Maupiti Island shows a link between the Society Islands and the early Maori of New Zealand. These are extended prone-type of burial interments. With burial offerings of stone adzes and shaped whale-tooth pendants. The date of these Maupiti burials is about A.D. 850 (Emory and Sinoto 1964). A further link between the Society Islands and the New Zealand Maori has been established by the discovery of more shaped whale-tooth pendants, reel ornaments, and *patu*, hand weapons from the Huahine Island sites (Sinoto 1974).

Cook Islands

Interest regarding the position of the Cook Islands in the peopling of East Polynesia has recently risen not only due to the close geographical proximity, especially the Southern Cooks, to West Polynesia, but also due to the discovery of pottery and early dates which are contemporaneous with the sites on Huahine. Bellwood, following his survey of the Cook Islands, suggested that there could be direct contact from Samoa to the Cooks, because of finding early Samoan type adzes which date back to 650-900 B.P. (Bellwood 1978). These types of adzes may not have necessarily come directly to the Cooks, but via the Society Islands.

The recent discovery of a cultural assemblage from the Anaio Site on Mauke Island, Southern Cook Islands support the Society Islands route. The material culture and the chronology of Anaio are very similar to those from the Vaito'otia and Fa'ahia Sites (Walter 1987). It also includes a characteristic fishhook manufacturing technique of drilling and sawing (Sinoto and Kellum 1964) which became very common in the early Maori culture. Some evidence for early ties with the West was the discovery of two potsherds from this site (Walter 1987) and another from Atiu Island (Sinoto and Kurashina 1987). In both cases however, stratigraphic proveniences are unfortunately not clear. The Mauke sherds contained quartz minerals sourced to Fiji as temper and the Atiu sherd contained quartz mineral from an unspecified source in Melanesia (Dickinson 1987). Another important work was recently undertaken in the Pukapuka Islands (Chikamori 1989), and produced an early date of 2000 BP for the Settlement Period. I have some reservations on the tridacna shell samples which were found in burial pits and used for dating. Also the types of fishhooks belonging to this early period are questionable. More information on the analysis being currently conducted is necessary before the prehistory of Pukapuka can be better understood within the total migration context. .

New Zealand

The settlement date for New Zealand, where the first arrivals came from and where they landed, are still in debate, but in general, researchers agree that the ancestral culture was East Polynesian. Davidson divided New Zealand prehistory into three phases: 1) early settlement period from first settlement to about A.D. 1200. By the end of this period New Zealand had been thoroughly explored; 2) a middle period of Expansion and Rapid change, from A.D. 1200 to 1500. It was during this time that the human population grew significantly, and human impact on the environment really began to be felt; 3) the Traditional period from A.D. 1500 to the 18th century. By A.D. 1500 most of the characteristics of the eighteenth century Maori culture and society were already present (Davidson 1984).

The archaeological record not only shows overall cultural change in New Zealand from East Polynesian to Maori, but also recognizes a great deal of regional cultural variation. The different phases of cultural change did not occur at the same time in all regions. The first settlers may have come 1500 years to possibly 2000 years ago, but this is more speculation than evidence (Bulmer 1989). The earlier dates are suggested by the possible change of vegetation and evidence of burning at about A.D. 500 (Chester 1986) or deforestation by man in the first few hundred years A.D. (Sutton 1987), but no real evidence for human habitation sites have been found yet.

The orthodox hypothesis of migration from Tahiti via the Cook Islands has also been in debate. Some researchers contend that the dates from Maupiti and Vaito'otia do not necessarily precede the settlement of New Zealand and that they merely show the close similarity of early New Zealand culture with contemporary culture in another part of East Polynesia (Davidson id.). I do not quite agree with this statement, especially following discovery of the Anaio Site in the Southern Cooks, which strengthens the orthodox hypothesis.

The possibility of multiple origins have been attributed to the marked differences of early adze assemblages in different areas within New Zealand. Such differences may not be due to regional and or functional variations, but rather due to multiple outside influences (Sutton id.). Stone adzes and other tools from Pitcairn Island show that close similarity with those of New Zealand suggest one such contact (Davidson id.).

New Zealand like other island groups, also still suffers from the paucity of data that permit a clear definition of time horizons and relationships to outside areas to determine the initial settlement.

Easter Island

The initial settlement problem of Easter Island is also yet unanswered. However, the culture of Easter Island was definitely Polynesian. The oldest date of A.D. 380 was obtained from a charcoal sample found on the original ground surface underlying the dirt which was deposited when the Poike Ditch was dug. However, there is no direct association with human activities (Smith 1961). The date of A.D. 690 from the first phase of *ahu* construction at Tahai is comparable to the earliest habitation sites (McCoy 1979). Metric traits of stone adzes, length and cutting edge ratio correspond to that of Hane, Maupiti, Vaito'otia, and early Samoan adzes, indicating close relationship to the Marquesas. Here again the initial settlement area is extremely difficult to locate.

Archaeological work on Easter Island has so far emphasized study of *ahu* and *moai*. More

intensive excavations of habitation and associated sites, following Ayres' (1975) and McCoy's (1973 and 1976) pioneering attempts to establish a material culture sequence are necessary.

ISOLATED ISLANDS

A number of remote isolated ialands exist in East Polynesia. They range from severely eroded volcanic remnants to emerged reef or "makatea" islands. That the most marginal of these islands show signs of human activity is a testament to the intensive navigational exploitation of the Pacific by early Polynesians.

Henderson Island

Henderson Island has been known as a uninhabited raised coral atoll since its Spanish discovery in 1606 (Markham 1904). However excavations of two sites revealed that Polynesians had occupied the island earlier. Fishhook typology and coral files indicate close affinity with the early Marquesas. The radio-carbon date from a charcoal sample taken from the bottom layer of the HEN1 Site ranges-from A.D. 1000 to 1395, and the upper layer sample ranges A.D. 1280-1640 showing a possible occupation span of some 600 years (Sinoto 1983).

The Polynesian inhabitants left the island most likely due to the lack of freshwater, just prior of the Spanish arrival. How the settlers survived for a relatively long time under such marginal conditions, provides a valuable model for the process of colonizing such isolated islands and utilizing limited locally available resources. Basalt adzes, pearl shell fishhooks and Hawaii/Marquesas-type porites coral files changed to fossilized tridacna shell adzes and fishhook made from locally available, poor quality Isognomon sp. shell (Sinoto 1983).

CONCLUSION

Brief overviews such as this are useful in pointing out the deficiencies and gaps in current data and field work. Archaeological approaches to field work as well as the subsequent interpretation of the results require further refinement before some of the major problems, such as the East Polynesian homeland and other inter-island relationships, can be resolved.

A currently frequent archaeological tendency in East Polynesia is a reliance on radiocarbon dates with an emphasis on earlier dates without much substantive evidence. Although there is much discussion on various migration origins and routes, an important point from my perspective is that still some of the best or most reliable interpretations emerge from a judicious application of the combined analyses of chronometric and material cultural data. The continued coordination of multi-disciplinary approaches, which I did not elaborate here, must also be further emphasized in the future.

Notes on the Possible Influence of Jomon Culture in Oceania

In closing, I would like to briefly re-introduce the cord-marked potsherds found by José Garanger (1971 and 1972) from Vanuatu (New Hebrides). Upon receiving a copy of his manuscript, I was very excited when I saw the photograph of the sherds (Fig. 2). I asked him if it was possible to send me some sherds for examination which he kindly did. There was no doubt that the decorations were genuine rolled cord-marks or *Jomon*, including *Yoriitomon* or a method of applying rolled impression using a cord-wrapped dowel. An article by Chosuke Serizawa (1972) discusing these sherds did not stimulate much archaeological interest in

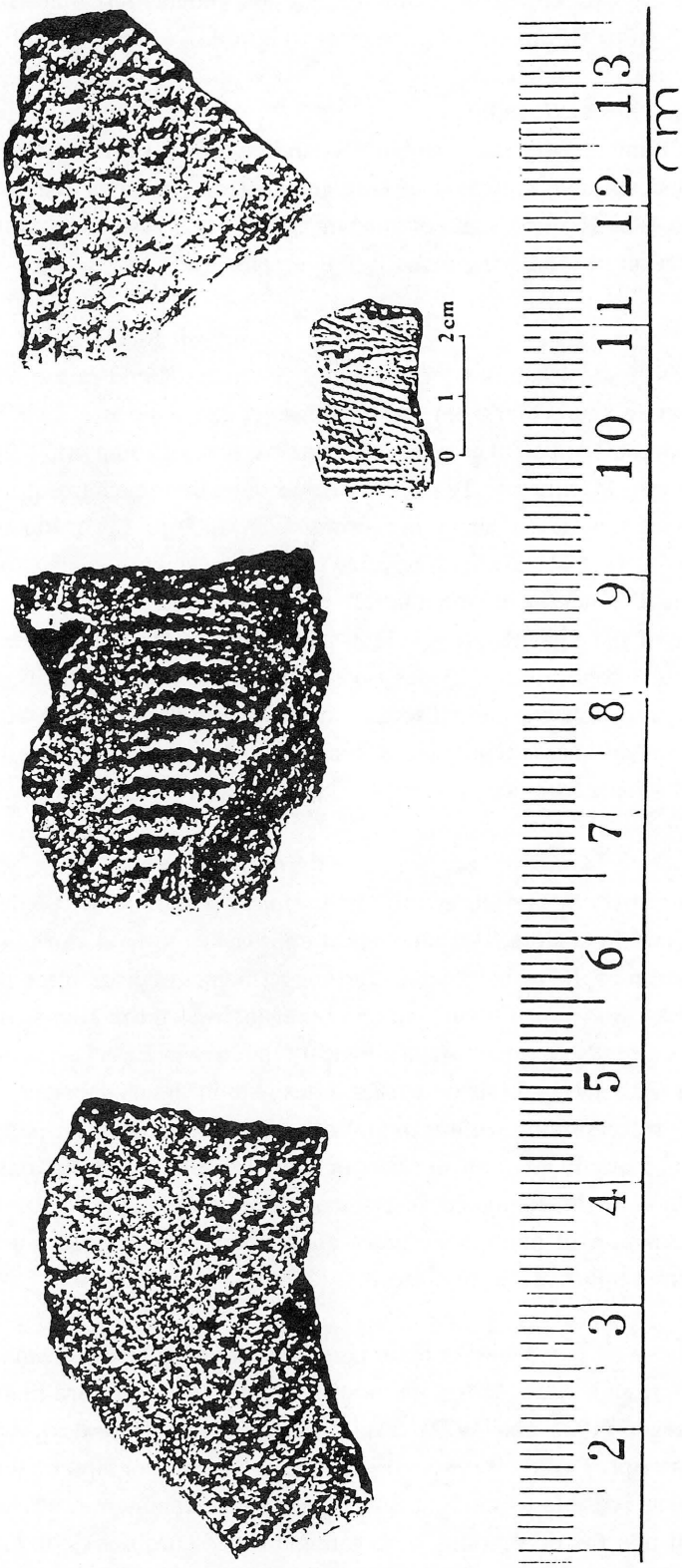

Figure 2 Jomon decorated potsherds from the surface of Mele Plain, Efate Island, Vanuatu. They were found by José Granger in 1967-68.

Japan. Serizawa described the sherds from the photographs and stated that identical decorations can be seen on *Entokaso* C and D Types of Japanese pottery that date from about B.C. 3000.

These sherds, classified by Garanger as paddle-impressed pottery, were surface collected from a garden in Mele Plain on Efate Island, Vanuatu. Garanger studied two pottery-bearing sites on the island. The significant site was Mangasi on the northeastern shore. The early type of Mangasi-ware has incised, band relief, and applied-relief decorations. These types of pottery, dating from c. B.C. 600-500 were not found from other areas of Vanuatu.

The cord-marked pottery did not appear in any of his excavated sites and consequently, he was unable to place them in the chronology of Vanuatu prehistory. Garanger concluded that the pottery culture disappeared at about the 17th century A.D.

Especially due to the recent interest on Mongoloid expansion or Jomon people's expansion (Brace et al. 1990, Katayama 1990) into central Oceania, I would like to reiterate the potential significance of these few sherds found to date and the necessity for further laboratory analyses of the sherds as well as additional field work.

Prof. Masakazu Yoshizaki from the University of Hokkaido, commented to me during the symposium that the significance of the Vanuatu sherds is not only in the genuine cord-marks, but that they exhibit the distinctively Jomon trait of the presence of consistent groupings of different cord-marks. After the symposium Prof. Yoshizaki agreed to undertake detailed examinations if the actual sherds can be made available. He may be able to determine whether or not the pottery was manufactured in Japan or not. Nevertheless, further fieldwork needs to be undertaken to recover more such sherds, especially *in situ.*

At my request, Dr. Garanger sent the sherds to Prof. Yoshizaki in December 1990 and also agreed that if an expedition was organized he will act as field guide.

Another discovery of *Jomon*-type pottery occurred from a site on Lau Island in the Fiji group. In this case, the decoration, *Oshigatamon*, was made by a carved roulette which was rolled on the surface of the pottery. I have only seen photographs (Smart ms.). These potsherds are curated by the Department of Prehistory, the National University of Australia, Canberra. When I visited there, I was unable to examine them since they could not be located. These sherds also bear close and careful examinations.

Bengt Anell (1955) stated that some Hawaiian fishhooks and those of the Jomon Period exhibit more than just coincidental similarity. I agree with him that certain types of hooks are very similar in morphology, although the materials are quite different. Take for example the notched and knobbed points of slender two-piece Hawaiian hooks (Emory, Bonk and Sinoto 1959). They may not be common types in the Early Jomon Period, but two-piece hook points from the Natsushima Shell Mound (Esaka 1959) are identical. The Hawaiian hooks are made of human bone and the Natsushima hooks are made of deer antler.

Whether these cord-marked pottery and fishhook types result from diffusion or independent innovation, opens up new and exciting avenues for future research.

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太平洋地域に於けるラピタ土器文化をともなう人の拡散と東ポリネシア定住に関する論説について
附記：縄文文化に類似するオセアニア出土品の存在について

篠 遠 喜 彦

広大な太平洋に散在する大小の島々に如何にして、どのような人達が、何時頃住みついたかは、早期の探検家達の考察を含めて、人類学、考古学、言語学、民族植物学等の多分野の専門家が解明につとめてきた。1960年代から各分野での集中的な調査活動によって、太平洋の四大文化図インドネシア、メラネシア、ミクロネシアそしてポリネシアの歴史的解明は急激に進んできている（図1）。

オセアニアへの最初の人の移動はアジア大陸からインドネシア、ニューギニアを経てソロモン群島の一部、オーストラリアに移住した者達によるもので、その移動は35,000～50,000年前にさかのぼるものとみられている。しかしながら、メラネシアから進出してポリネシア人の祖先となったのは、これらの人々とは別の航海にすぐれたオーストロネシア人で、年代的にもずっと後になって、今から5,000～6,000年前に東南アジアの諸島を経て移動してきた人々であろうと考えられている。ここでは、この人々によるメラネシアからポリネシアへ移動の経路をさぐることに焦点をしぼってみた。

このオースロネシア人は、現在ラピタ式土器とよばれている土器を製作し、この土器とニューギニア北部のビスマーク諸島で産出する黒曜石の交易を行って航海した。この人々の移動の経路とその年代は、このオセアニアで最古の土器を出土する遺跡によって確認することが可能である。これによって、この人々がメラネシア周辺に属する諸島から進出して、ソロモン、バヌアツ（ニューヘブリデス）、ニューカレドニアの諸島を通り、フィージー島を経て、西ポリネシアのトンガからサモアにまで達した。しかし、この移動が急速に行われたことは、ビスマーク諸島のラピタ土器が作られたと考えられる紀元前1500年とほぼ同時代のラピタ土器が、4,000Km もはなれたトンガから出土し、紀元前1,000年と年代測定されたラピタ土器がサモアから発見されたことからもいえる。ラピタ土器文化をもった人達は高度な航海術や遠洋航海に耐える丸木船製造の技術をもち、根菜農耕や漁労を主として、海洋地帯や附近の小島に集落を築いていた。ラピタ土器の起源がどこにあるかをさぐるために、ビスマーク諸島を中心にラピタ・ホームランド調査が、国立オーストラリア大学が中心となって現在も行われている。おそらくその源流はアジア大陸にまでさかのぼると思われるが、インドネシアを中心とする中間地域の調査が殆ど行われていない現在では、推測もむずかしい。ラピタ土器は細かい刺突文や貝殻文を特徴としてもっているが、トンガやサモア出土のものには、そのような文様をもつものがだんだんと少なくなって、紀元前500年には無文土器となり、紀元300～500年頃には土器文化の消滅をみるに至っている。

ラピタ土器の存在を手がかりとして、メラネシアの西から東への人の移動の時期と動向を知ることができた。しかし、トンガやサモア地域に1000年もとどまり、土器文化が失われた時代になって更に何らかの動機で東へ移動が開始されたというのが現実であるが、この東ポリネシ

ア内における人の移動の時期や足跡を知ることは大変むづかしい現状である。

何時頃から、どのような経路をたどって東ポリネシアへ人の拡散があったかについては、種々の学説がある。ヘイエルダールの南米起源説は有名であるが、現在は否定されるに至っている。エモリーと篠遠による、マルケサス諸島を東ポリネシア全域への分岐点と考える正統的学説にも、近代異論をとなえる者がでてきている。これは、正統派によって主張される一群島から一群島へと順次に飛石を渡るように移動したものではなく、むしろ一地域（群島を広く包括して）に数次にわたって外から早期の接触があったと考えられ、特にニュージーランドなどの場合、その接触が、サモア、トンガ、クック諸島、あるいはイースター島からさえあったと考えても、おかしくないという説である。私は依然として自説を強調しているが、上記のような多発的接触があったことも考えることができ、その意味ではタヒティから土器片の発見があっても、おかしくはないと云える。しかしながらこれらの接触によって東ポリネシア文化の基礎を築く程の影響力はなかったものと思われる。また、近年において各地、特にハワイの定着年代の推定がますます古くなり、そのためにマルケサスの定着年代を紀元前200年頃までさかのぼるのが妥当だと主張され始めているが、そうすると、この年代では西ポリネシアの土器文化がまだ存続していた時代であることと思い合せると、土器文化は当然東ポリネシアにも渡る機会があったと考えるべきである。今迄断片的に発見されている土器はいずれも第二次堆積遺跡からの出土で、第一次堆積の土器を包含する遺跡は未だ発見されていないと主張するものもいる。現在までにそのような遺跡が発見されていないということは、たとえ将来発見されたとしても、正統派の移動経路説には変化を及ぼすことはないと思われる。

問題は、移動の経路を立証するためのきめてとなる程の土器文化が、東ポリネシアには存在しなかったことであろう。また、各群島の中で、未だに最古と断定できるような遺跡の発見のないことから、拡散経路と年代についての結論が出せないでいる。現在までにマルケサスやクック諸島から少数発見されている土器片に含まれていた石英片が、いずれもフィージー島及びそれ以西を原産とするものと断定されたことからしても、それらが現地で作られたものでない伝来土器であることは確かである。型式分類及び編年において、土器にかわる手だてとして石斧の型式が使われているが、往々にして一定の型式が長期にわたり持続することから個々の年代ないし文化的推移をこまかく分類することがむづかしく、土器のように適用できない。これにひきかえ、篠遠の始めた釣針による型式分類及び編年が有効であるが、問題は比較の対象たるべき釣針自体が作られなかった地域とか、判定に重要な特定の型式が地域によっては作られなかった場合など、土器の如く確定的結論を出すまでにはいたっていない。釣針の製作方法にも地域性と年代による違いがあるので、これらを合せてみることによって、よりよい比較研究が可能となると思われる。

東ポリネシアへの定着ということは、無人島への移住であったから、人々によって伝えられたホームランド文化の延長があったと考えてよいであろう。しかし自然環境や資源の違いに適応した独自の文化を築き上げてきたことも事実である。このホームランド文化から新しいものへ適応による変化が、意外にも短期間に行われたために、ホームランド文化が殆どそのまま伝承されたと考えられるような遺跡は、極めて少数であるうえに、発見の確率はきわめて少ないと考えてよい。したがって、ひろく各研究分野からの調査結果を総合的に検討して、東ポリネシアへの移動経路をたどってゆく方法が妥当なものとされている。しかし考古学的には、何といっても各群島に於ける物質文化の細かい型式編年の確立が必要であって、この編年と年代測定値とを比較、照合してゆくのが古い方法論であるかもしれないが、今後の仕事の一つの課題として強調されてよいであろう。

最近しばしばいわれているモンゴロイドの太平洋への拡散、ポリネシア人との関係等が問題になり始めているが、現在ヴァヌアツとよばれる（旧ニューヘブリデス）諸島からの縄文のあ

る土器片、フィジー島ラウ一群島よりの押型文土器、ハワイの釣針と日本の縄文時代の釣針の類似などについてここで検討してみたい。

佛考古学者ホゼー・ガランヂェー博士が1970年代　ヴァヌアツ諸島、マライタ島のメレ高原で表面採集した遺物の中に転がして施文した縄文や羽状縄文が施された土器のあるのを博士の論文の図面で見た時には大変驚いたものである（図２）。早速博士に実物を送ってもらい、調べてみたところまぎれもない縄文であった。この土器については芹沢長介氏が考古学ノートに記述され、縄文前期大洞ＣとＤ式に似ていると書いている。私は、再度この縄文土器の重要性をとりあげて、詳しい調査を提案したいと考えている。幸いに、北海道大学の吉崎昌一氏やガランヂェー博士の御協力を得て、現在土器そのものの分析調査が吉崎氏の研究室で行われている。これにより、土器が日本で作られたものか、日本以外で作られたものなのかが解明される。また、現地を訪れてこれらの土器が文化層位の中で発見できるような遺跡の捜索を行う場合には、博士が直接案内して下さるとのお手紙を頂いている。

1960年代、フィジー島の南にあるラウー諸島のカンバラ島遺跡の仮報告書の中に、縄文押型文と酷似した土器の写真がのっていた。実物は国立オーストラリア大学に保管されているので、大学を訪れた折にみたいと思ったが、短期の滞在中には収納庫から取出すことができなかった。これらの土器もこの機会に再検討すべきである。

次に、以前にも述べたことがあるが、日本の縄文時代とハワイの釣針との型式上の酷示である。ベングト・アネル氏が“南海の漁法”の中で、両者の類似は偶然以上であると述べているが、私にもそう思われる。よい例としては、ハワイ早期の組合せ釣針と縄文早期の夏島貝塚出土の釣針をあげることができる。材料は異なるが型式はよく似ており、これを単に、偶発的に両地域で発達したものと解釈してしまってもよいのであろうか。勿論、年代の差とか、伝播経路等種々問題となる点はあるであろうが、オセアニアでの縄文土器の遺跡とともに、一つの重要な課題として取上げる国際的な共同研究をすすめたいものである。