

Cultural Contacts between Micronesia and Melanesia

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Introduction

Linguists have grouped the indigenous Micronesian languages into three major types: non-Oceanic Austronesian (spoken in the Marianas and Palau), Nuclear Micronesian (spoken in the Carolines, Marshalls and Gilberts) and Polynesian (spoken in Nukuoro and Kapingamarangi)¹ (Fig. 1). Among these, Nuclear Micronesian has been shown to be closely related to the languages of the southeast Solomons and northern Vanuatu. Also, there are certain archaeological artefacts which indicate contacts between Micronesia and Melanesia. I would like to summarize the evidence of prehistoric contacts between the regions and reveal the intricate nature of the contacts.

In this paper, Micronesia refers to the area where Nuclear Micronesian is spoken, particularly the Caroline Islands. It is not possible yet to demonstrate the nature of the cultural contacts between Micronesia and Melanesia — when, how often, which direction, etc. Therefore, as a starting point, I have tentatively classified the possible contacts into two groups: early and late. Evidence for possible contacts within each period will be demonstrated using various data.

¹ Yapese language has been classified in neither of these. However, its position in Oceanic language and some linguistic relationship with Admiralties has been indicated by Ross recently (Ross 1996).

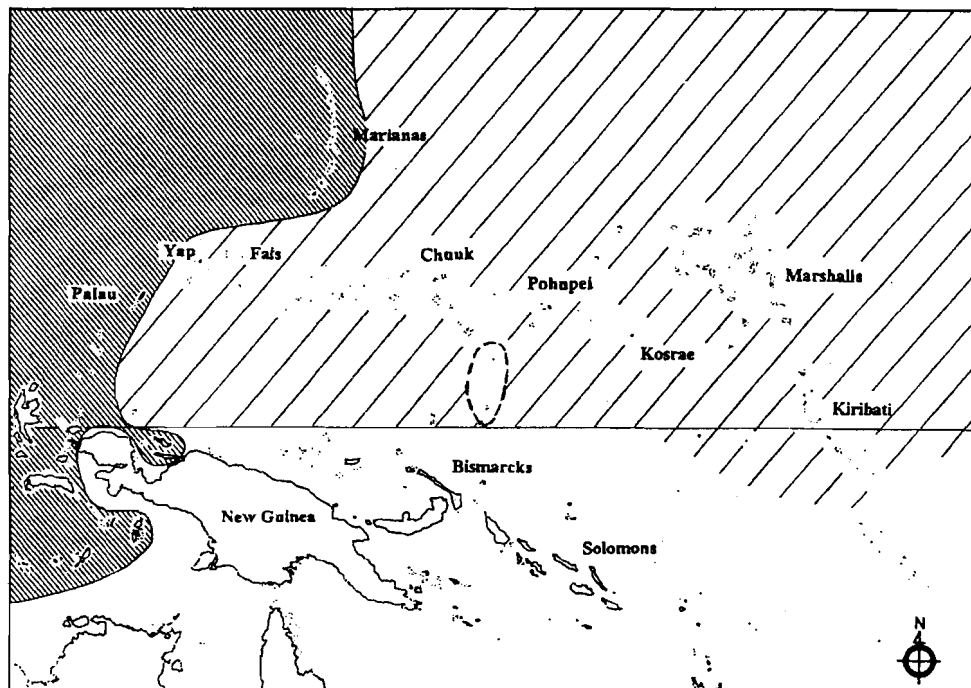


Figure 1
Linguistic groupings in Micronesia.

Early Movement from Melanesia to Micronesia

Linguistic Evidence

Early population movement from Melanesia to Micronesia is well demonstrated by linguistic evidence. The external relationships of the Micronesian languages have been examined in the larger framework of Oceanic linguistic relationships. There are three major hypotheses regarding the linguistic linkage of the Micronesian languages with Melanesian languages.

The first is the relationship with northern Vanuatu, which has been indicated by Grace (1955; 1964) and Pawley (1972). The second is the relationship with San Cristobal and Malaita in the south-east Solomon Islands shown by Blust (1984). The third is with Admiralty Islands proposed by Smythe (1970). All of these models indicate that Nuclear Micronesian separated from Melanesian several thousands years ago.

Within Nuclear Micronesian, the following internal subgrouping hypothesis has been proposed by Jackson (1986). Trukic and Ponapean are closely related. This subgroup is closely tied to Marshallese, and more distantly to the language of Kiribati and more distantly with Kosrae. These relationships do not match well with geographic distance. The maintenance of the continuum could be due to the frequent contacts amongst the speakers as was indicated by Rehg (1995: 315).

Archaeological Evidence

Present archaeological evidence indicates that Micronesian islands have been inhabited only during the last 2000 years². This is more than a millennium shorter than the length suggested by the linguistic studies. Nonetheless the archaeological evidence of pottery and dog may support the linguistic studies.

Pottery has been found in all the volcanic islands of Micronesia: Chuuk, Pohnpei and Kosrae. The dates associated with this pottery are as early as 2000 years ago³. Because of an absence of clay, the art of pottery making was unlikely to survive in the coral islands, such as the Marshalls and Gilberts. Therefore, if a pottery making tradition came into Micronesia from Melanesia, it came directly with the settlers of Kosrae, Pohnpei and Chuuk.

The general resemblance between eastern Micronesian pottery and the late Lapita plain tradition in Melanesia has been interpreted as indicating the population movements from Melanesia to Micronesia. The traits cited as evidence of this include the globular pot form and the notched rim (Athens 1990). Despite general resemblances, there are several points which should be remembered.

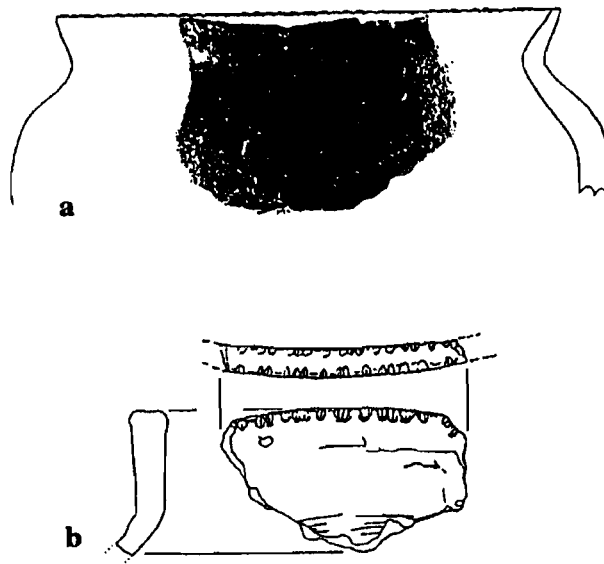
First, potsherds which exhibit these features are relatively few. Only one notched rim sherd was found at Chuuk (Fig. 2a; Shutler *et al.* 1984), and none was found at Kosrae (Athens 1995). Pohnpei alone had high (35 %) ratio of notched rim sherds (Fig. 2b; Athens 1990).

Second, the use of the paddle-and-anvil technique was extensively used in Lapita plain pottery making. However, this technique is not reported from Micronesia except for the use of anvil, recognized by Ayres in Pohnpei pottery (Ayres 1990: 190).

² It should be noted that the Marianas were settled c.3500 years ago, while Palau, where the language is also non-Oceanic Austronesian, was settled at the same time as the Carolines.

³ Ayres extended the beginning of pottery making in Pohnpei to "at least A.D. 1 and presumably back to 500-1000B.C." (Ayres 1990: 190).

Figure 2
Notched rim sherds
excavated from
Micronesia.
a: from Fefan, Chuuk,
ca. 2000BP (Shutler
et al. 1994).
b: from Pohnpei, ca.
1500-1200BP (Ayres
1993).



Despite these uncertainties, there is a strong similarity between later potsherds (AD 500-800) reported from Pohnpei (Ayres 1990: 192-3) and the plain or incised sherds reported from Erueti in Vanuatu (Garanger 1972: Figure 17-19). Similarity in pot shape and in notched rim could indicate shared ideas. We need to know whether notched rims are presented in the earliest Pohnpei pottery. This is because the technology of pottery making does change according to environmental conditions (Intoh 1989; 1990). Also, it is not yet clear if the human dispersal to Pohnpei was from a single source (Intoh in press).

Citing indirect evidence of supposedly human-caused forest burning in Pohnpei prior to 2000 B.P., Ayres extends the initial settlement of Pohnpei to between pre-500B.C. to A.D.1 (Ayres 1990: 189). Although Ayres assumed that pottery was made during this "Settlement and Adaptive Integration Phase", there are no securely dated potsherds before 2000 B.P. Since pottery was the only trait cited as an indications of the direction of migration, a definite conclusion is unwarranted at this time.

There is also the possibility of a small group migrating from the west in this earliest period. Particularly, the early presence of Asian rat, *Rattus rattus*, in *Fais* (Intoh 1994; 1996), Pohnpei (Ayres *et al.* 1981) and Nukuoro (Davidson 1971) cannot be explained without contacts with western islands. I have discussed on this matter elsewhere (Intoh in press) and will not pursue it further here.

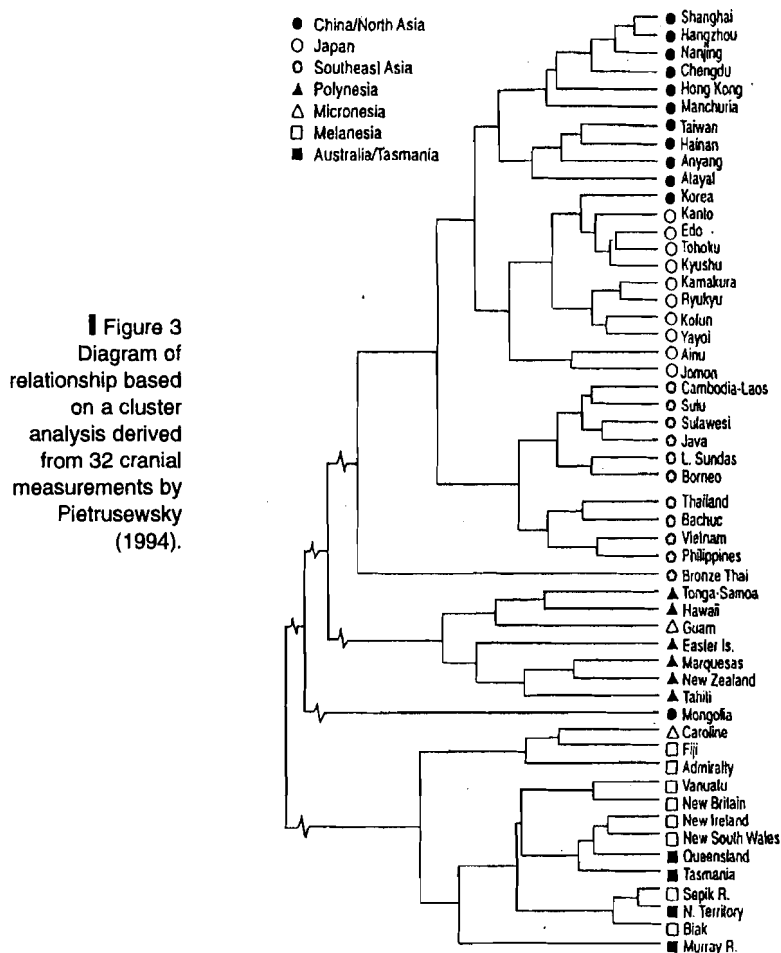
The early presence of dog is another fact indicating contact between Micronesia and Melanesia. Excavated dog remains have been reported from Chuuk (Shutler *et al.* 1984), Pohnpei (Athens 1990) and Kosrae (Athens 1995) around 2000BP. Dog bone were found in the Marshall islands, dated to around 1000 B.P. (see Weisler this volume). Considering the absence of prehistoric dogs in western Micronesia (except for Fais island), dogs could have been brought from Melanesia by the early settling population. The existence of dog on Fais island in the central Caroline islands around 1800 B.P. should be regarded with caution (Intoh 1996). The close cultural relationship of Fais with Yap may indicate the possibility that dog also existed on Yap but has not been found archaeologically⁴.

Physical Anthropology

Pietrusewsky's recent work using cranial measurements presents a supporting figure for the above linguistic model (Pietrusewsky 1994). A total of 24 male skeletons from Caroline Islands (one from Kosrae, six from Pohnpei and seven from Chuuk) were used in the analysis. The diagram of relationship based on a cluster analysis of 32 cranial measurements shows that the Carolines cluster in the Melanesian and Australian group (Fig. 3). Within the group, the Carolines clusters with Fiji and next with the Admiralties (It is interesting to note that the Marianas do not cluster with the Carolines but with the Polynesian group which is closest to the Southeast Asian series). These roughly indicate that there were a significant population movement from Melanesia to Micronesia.

A recent genetic study provides additional data indicating the relationship between Micronesia and Melanesia. O'Shaughnessy *et al.* (1990) found certain Melanesian a-globin haplotypes throughout Micronesia with higher frequencies toward the south-east. On the other hand, several common genetic markers have been found in Micronesia that are absent from Polynesia. This suggests that Micronesians are a distinct hybrid of island South-east Asian and Melanesian gene pools (Serjeantson and Hill 1989: 291). A possibility of earlier movement from western Micronesia to Eastern Micronesia still persists with this evidence.

⁴ The recent palaeoecological research on Yap revealed that the human impact on the island took place about 3300 BP (Dodson and Intoh, in press).



Later Cultural Contacts between Melanesia and Micronesia

Linguistic Evidence

Two Polynesian-speaking populations dispersed to Nukuoro and Kapingamarangi around A.D.1000-1300 (Davidson 1971; 1992; Leach and Ward 1981). The settlements have been made from the east, Tuvalu Islands, according to the linguistic analyses

(Pawley 1967; Bayard 1976; Howard 1981). Although these Polynesian Outliers seemed to have no relation to Melanesia, a possible link may be indicated by archaeological evidence as will be shown below.

Archaeological Evidence

Terebra/Mitra shell adze

The most visible archaeological evidence for late contact between Micronesia and Melanesia is a shell adze made of *Terebra*/*Mitra* shell⁵. This tool has a round cutting edge on the body whorl of *Terebra maculata* (Fig. 4a) or *Mitra* sp. (Fig. 4b). The back of the adze (hafted side) was shaped by chipping and grinding away nearly one side of the shell. The cutting edge was then formed by beveling from the widest portion of the shell toward the anterior end.

Among the archaeological samples reported, some variation in bevel angle is recognized, high or low. Otherwise, no significant difference in adze form has been detected between *Terebra* and *Mitra* adzes. Perhaps, selection of *Terebra* or *Mitra* as an adze source could have been the result of the availability of these two genera⁶. The majority of the *Terebra*/*Mitra* adzes collected in Micronesia are made of *Terebra maculata* while more *Mitra* sp. shells were used in Vanuatu. In this paper, both are called *Terebra* adze.

Ethnographic literature describing *Terebra* shell adzes as well as archaeologically reported specimens from Micronesia are plentiful. This implies that the *Terebra* adze has been a component of the Micronesian shell tool complex for a considerable length of time (cf. Kirch *et al.* 1991: 160).

The results of a literature survey of both Micronesian and Melanesian archaeological samples are shown in Table 1. This clearly indicates that the use of the *Terebra* adze in Micronesia began relatively late, around AD1000-1200. The range of the dates is almost the same or even later compared with that of the Melanesian archaeological samples. Among the Melanesian samples, it is not yet known when the *Terebra* adze appeared in the cultural sequence of Mussau, Admiralties. Until this is established, the currently available data indicate that the use of the *Terebra* adze began almost simultaneously in Micronesia and in Melanesia.

⁵ The term shell adze is used here, although some researchers call this type of shell tool a shell gouge based on the form of round cutting edge.

⁶ *Terebra maculata* lives in coral-line sands in the infralittoral zone while *Mitra mitra* is limited to rocky or coral habitats although some live on coral-line sands or mud, too (Feinberg 1980).

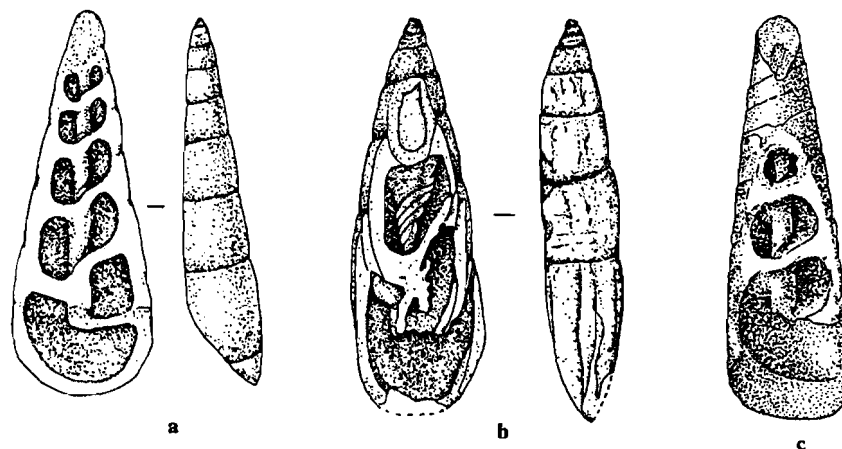


Figure 4

Terebra/Mitra sp. shell adzes.

a: *Terebra maculata* shell adze collected from Chukienu shell-midden, Chuuk (Takayama and Intoh 1980).

b: *Mitra* sp. shell adze excavated from Chukienu shell midden, Chuuk (Takayama and Intoh 1980).

c: *Terebra* sp. shell adze with a chisel end, excavated from Nukuoro (Davidson 1971).

The use of *Terebra* shell for adze making is distinctive and could have been invented in Melanesia or Micronesia, since no specimen has been found from Polynesia, the Philippines nor Indonesia. The use of *Terebra* for tools is not, however, restricted to Melanesia and Micronesia. In Polynesia, the tip portion of a *Terebra* shell was filed flat to form a bevel and was used as a chisel. The *Terebra* chisel was used in the Society islands by around A.D. 800 (Sinoto and McCoy 1975: 159). This date is earlier than the appearance of the *Terebra* adze, at least in Micronesia.

Considering the distribution pattern of the *Terebra* adze in Micronesia and Melanesia, it is plausible that Polynesian outliers had a roll in spreading the idea. Among the outliers, Nukuoro is the only island where both adze and chisel made of *Terebra* shell were recovered. Two interesting specimens were excavated from Nukuoro. These had both types combined: an adze end on the aperture and a chisel end at the tip of the spire (Fig. 4c; Davidson 1971: 53-54). This indicates, at least, two different ideas of making use of *Terebra* shell had once co-existed on Nukuoro Atoll.

Pearl shell trolling lure shank

Other archaeological evidence indicating cultural contacts between Melanesia and Micronesia includes a trolling lure shank with a peculiar head shape. This has a unique

Area	Island Group	Island/Site	Archaeological evidence	Reference
Micronesia	Marianas	Tinian	sub-surface	Thompson 1932 (rep. 1971)
		Guam/Pagat	surface and sub-surface	Craib 1986
		Pagan	none	Egami and Saito 1973
	Yap	Boldanig	AD1600	Gifford and Gifford 1959
		Rungruw	surface	Intoh and Leach 1985
		Ngulu Atoll	none	Intoh 1981
	Palau	Babeldaob	surface	Osborne 1979
		Kayangel	AD1650	Takayama <i>et al.</i> 1980
		Angaur	surface	Takayama <i>et al.</i> 1980
	Central Carolines	Ulithi	surface	Craib 1980
		Fais	surface	Intoh 1994
		Lamotrek	AD1200-	Fulimura and Aikire 1984
Truk	Fefan	none	Shutler <i>et al.</i> 1994	
	Fauba	AD1600-	Takayama and Seki 1973	
	Chukienu	AD1500-	Takayama and Intoh 1978	
	Tonaachaw Mortlocks	AD1300- surface	Kino and Parker 1984 Takayama and Intoh 1980	
Pohnpei	Nan Madol	AD1000-1500	Ayres 1990:191	
	Ant atoll Nukuoro Kapingamarangi	surface AD 1200? - none	Ayres <i>et al.</i> 1981 Davidson 1971; 1992 Lesch and Ward 1981	
Kosrae Marshalls Kiribati	Lelu	pre AD1400 surface none	Cordy 1993 Welsler <i>Pers.com.</i> Takayama	
	Melanesia	Santa Cruz	Vanikoro	late prehistoric- early historic
Nendo			AD1200-1485	McCoy and Cleohorn 1988
Tikopia Anuta			none none	Kirch and Yen 1982 Kirch and Rosendahl 1973
Vanuatu		Efate Mele, Mangaasi, Lelep Fila	AD1000-1200 AD 860-1135	Garanger 1972 Shutler and shutler 1966; shuder 1971
		New Caledonia Admiralties	Mussau	none (500BC-AD1500)? -

Table 1
Archaeological evidence of Terebra shell adze in Oceania.

head knob jetting forward for line attachment (Fig. 5). Such a lure type is known from ethnographic collections from the Solomon islands (Beasley 1928: pl. 55, 56; Bell, *et al.* 1986: Fig. 4. 2-4). The lure was made of mother of pearl (*Pinctada* sp.). The tradition of making this type of trolling lure seems to go back to about 2500 B.P. and is associated with Lapita-related assemblages, reported from Tikopia, Taumako, Watom

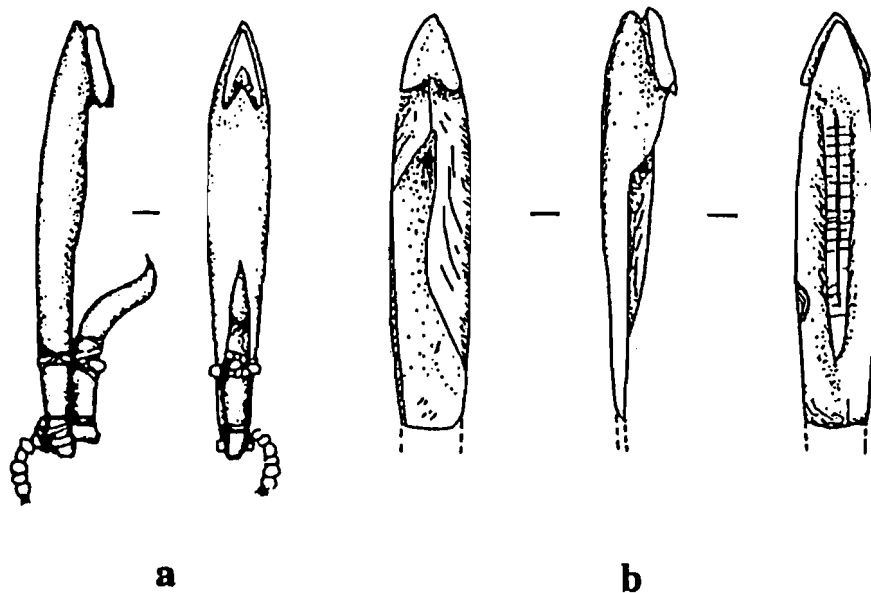


Figure 5
 Pearl shell trolling lure with a head knob jutting forward for line attachment.
 a: ethnographic specimen from Solomon islands (Bell, *et al.* 1986).
 b: excavated specimen from Fais island (Intoh 1996).

(Kirch and Yen 1982: 243-244) and Reef Santa Cruz (McCoy and Cleghorn 1988: 110). All the archaeological samples were made of *Trochus* shell and the shape of the knob is a little different from the ethnographic material. However, the idea of having a head knob jutting forward is the same and distinctive. It is not clear how, when, and where *Trochus* was replaced by pearl shell to make this type of lure.

Several archaeological specimens of trolling lures of this type have been found in Micronesia: the Marshalls, Pohnpei, Kosrae and Fais. All of these are made of mother of pearl shell. The earliest date associated with these lures are: AD 450-750 at Fais (Intoh 1994: 90-91) and AD 700 in the Marshalls (Rosendahl 1987). The specimens from Pohnpei and Kosrae were found at Nan Madol and Lele, respectively (Annell 1955: 150).

These samples well indicate some exchange of the idea and/or transportation of this peculiar trolling lure from around the Solomons to eastern and central Micronesia. The Fais specimen may not have been derived from the Marshalls, but directly from the Solomons, based on similar carvings on the back face (Fig. 5b). This may indicate that there were sporadic cultural contacts in the area (see Intoh 1996).

Ethnographic Evidence

Back-strap loom

Weaving on a back-strap loom has been practiced in central and eastern Caroline islands, Nukuoro and Kapingamarangi in Micronesia, and Mussau, Santa Cruz and a number of Polynesian Outliers in Melanesia (Fig. 6). This is a sophisticated technological complex and unlikely to have been invented in Oceania independently from Southeast Asia where a similar technology has also been practiced (Roth 1950). In fact, the back-strap loom used in both areas employs almost identical parts and methods of weaving.

It is not easy to determine when this cultural component was introduced into Oceania, since direct evidence of weaving is hard to find in archaeological contexts. However, linguistic study indicates that true loom weaving goes back to 6000 B.P. or earlier in Proto-Austronesian (Blust 1995: 492). This does not necessarily mean, however, that this tradition was brought into Oceania and persisted only in the above mentioned area for several thousand years as was suggested by Blust (1995: 494).

Differences in the terms associated with the weaving in Truk (Chuuk) and Kapingamarangi were noted by Buck (1971); however, comparison between Trukese and Emira/Mussau failed to find apparent similarities (K. Rehg, Pers. Comm.). We have to await further linguistic studies on various terms of loom parts and weaving techniques before speculating how this cultural complex was brought to the area: Melanesia to Micronesia, or vice versa, or both.

Kite fishing

This is a distinctive fishing technique practiced in the Caroline islands (outer islands of Palau, central Caroline islands and Chuuk) and northern Melanesia (north-eastern coast and off shore islands of New Guinea, Admiralty islands, Solomon islands, Trobriand islands and others, Annell 1955). The kite was made of a large leaf such as breadfruit, banana, taro or sago palm. A line was attached to the kite that was flown in such a way as to trail the hook along the water's surface. An interesting feature of this technique is that some of the "hooks" are made of spider web. This method is suitable for catching needlefish (Belonidae) swimming near the surface of the shallow water.

The distribution area of kite fishing is similar to that of back-strap weaving but a little wider in Melanesia and a little narrower in Micronesia (Fig. 7). A similar fishing technique has been found in island Indonesia, such as Banda, Ceram, Flores, western Java and some other islands. Considering this distribution, we think this cultural trait was invented in Indonesia and thence dispersed into Oceania. However, Yabu'uchi, who studied the various aspects of kite fishing technique indicated that the region around the

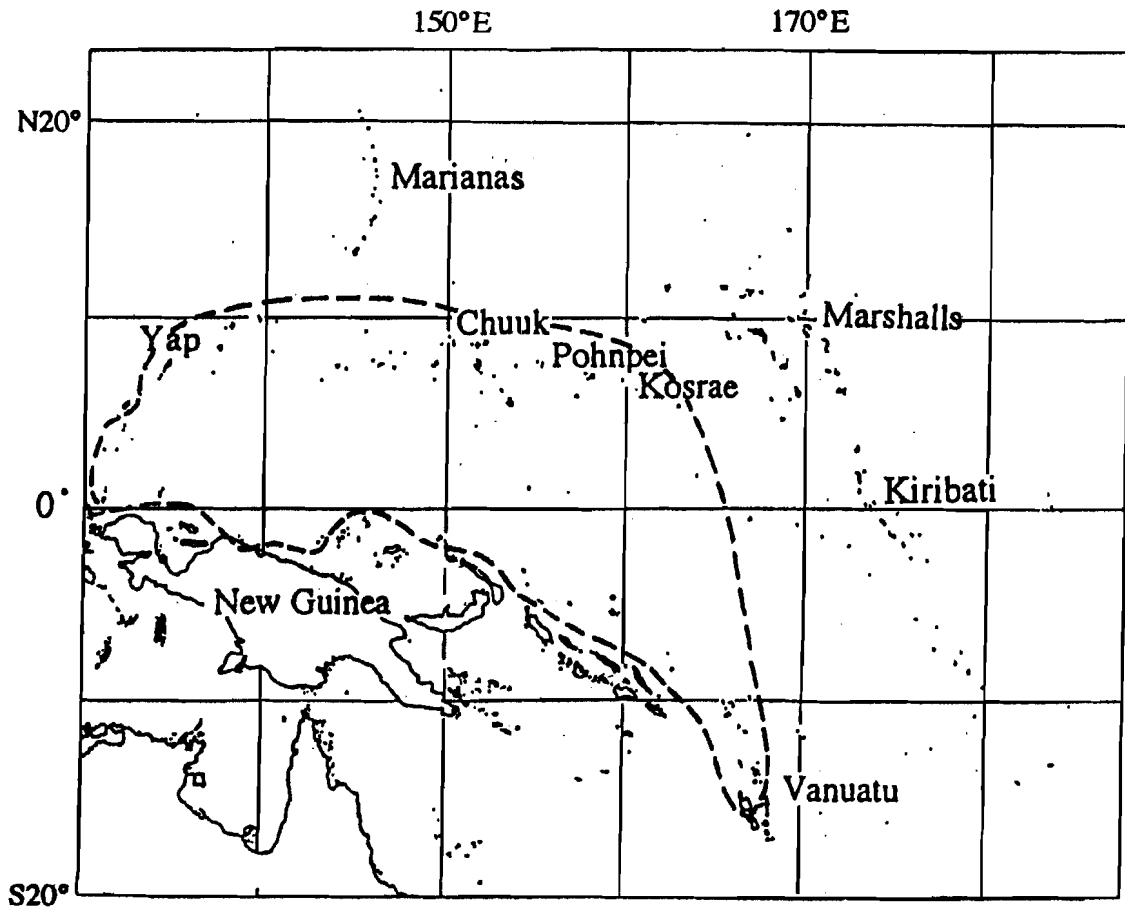


Figure 6
Map showing the distribution area of back-strap loom
in Micronesia and Melanesia
(based on Roth 1950 and Nevermann 1938).

Admiralties, St. Mathias, Huon, Siassi, and Massim in northern Melanesia has kept the widest variation in technology and thus could have been the “birthplace” of this method (Yabu’uchi 1978: 349).

This example, too, indicates that a cultural trait which had been invented in Oceania has been shared amongst the people in north Melanesia and south Micronesia. These cultural contacts must have been possible due to well-developed voyaging skills.

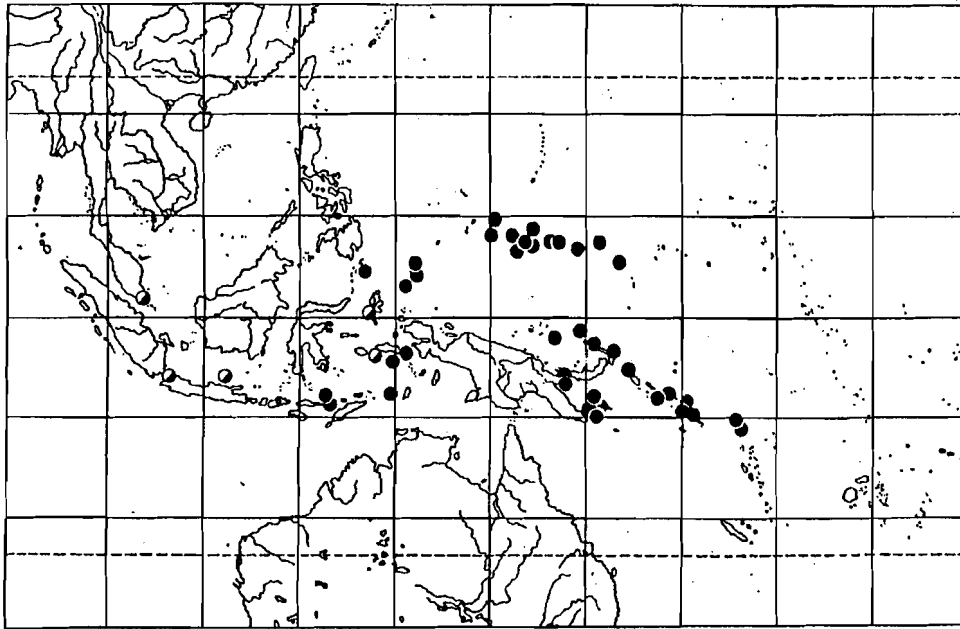


Figure 7
Map showing the distribution of kite fishings in Micronesia and Melanesia
(after Annell 1955).

Conclusion

It has become evident that there have been occasional contacts between Melanesia and Micronesia in the last 2000 years. Early population movement from Melanesia to Micronesia probably occurred around 2000 years ago. The dispersal routes could have been several, considering the variation in associated pottery.

The contacts between Micronesia and Melanesia did not end after initial settlement of Micronesia. A number of archaeological and ethnographic observations indicate the existence of subsequent inter-regional contacts. Particularly the area extending from northern Melanesia to the Caroline Islands seems to have been a zone of active contacts throughout the last 2000 years. Although the nature of such contacts is not well understood yet, it may be necessary to look at the two regions as a single broad zone of cultural and population exchange.

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