

# Comb and Appliqué

## Typological Studies of Two Ceramic Traditions during the Last Thousand Years in the Eastern Papua New Guinea

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### Abstract

This paper analyzes the transformational process of two pottery-making traditions during the last thousand years in the eastern Papua New Guinea by applying the typological method. This paper consists of three sections. First, after summarizing the results of the previous studies, I address two purposes. One is to clarify when and how the shallow-bowl specialized culture spread out in this region. The other purpose is to reconstruct the pottery chronology without relying on prehistoric trade theory. Secondly, the typological analyses of prehistoric potteries in four areas are shown respectively. Lastly, I establish the pottery chronology consisting of three archaeological horizons and explain the emergence of the shallow-bowl specialized culture. Considering the “imitation” techniques that modern potters adopt, referring to the result of on-going ethnoarchaeological survey in East Cape, I can conclude that the Horizon B should be a transformational key to produce the modern pottery culture in this region. Future investigations will be necessary regarding whether the timing of change in the pottery chronology corresponds with the beginning date of *Kula* ring based on radiocarbon determinations.

## I . Introduction

### I.1. Massim Prehistory and Melanesian Archaeology

Modern pottery manufactures of Papua New Guinea are well known in the world because of their unique designs and shapes. In comparison to Southeast Asian modern pottery manufactures, which produce simple and practical ceramics, those in Papua New Guinea have much greater varieties in form and decoration respectively (cf. May and Tuckson 2000 [1982]). The varieties involve several regional groups, in which the same features about pottery making are shared across large area. Massim, the eastern part of New Guinea mainland and many scattered Islands (Fig.1), is one of such regional groups. In this region, the groups of similar shallow bowl-shape pottery are produced (Fig.1: 1-9). Massim potters, who are only women, can make many forms of shallow bowls separately in the same areas (Fig.21, 22). In this context, such shallow bowl can be used as cooking pot, water jug, water container, and dish for serving foods. In addition, there are two production processes in the northern and southern Massim (Tab.1) attested according to main decoration techniques (Negishi 2007a):

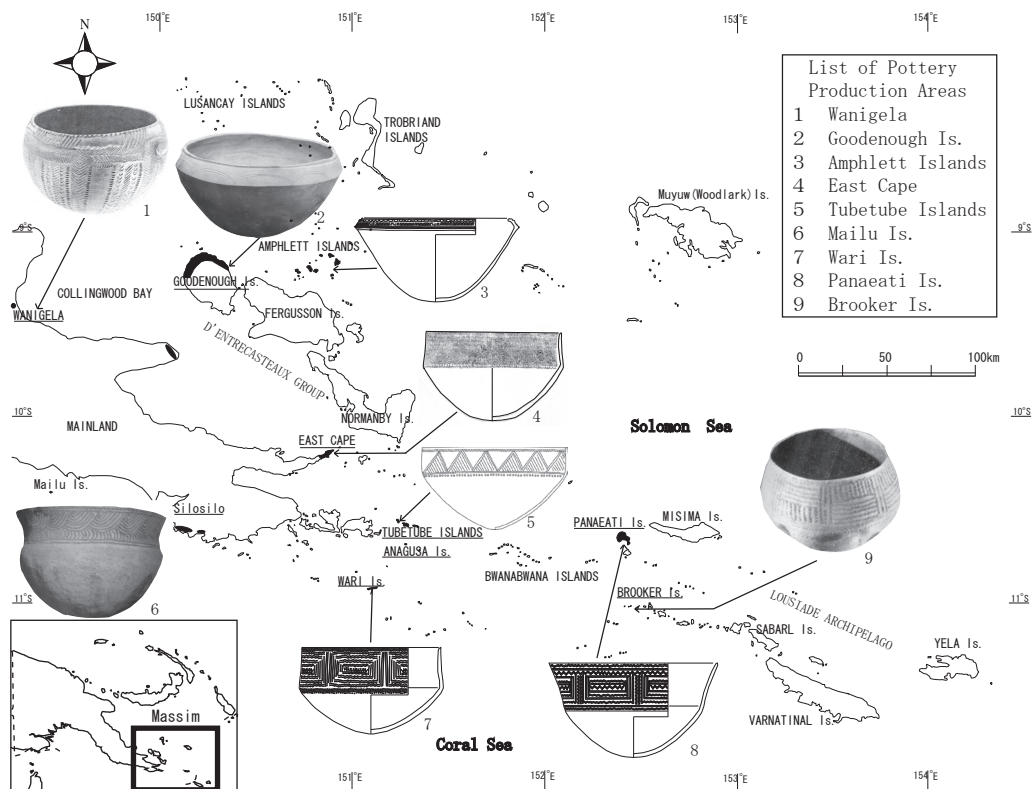
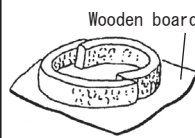



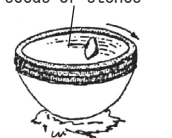

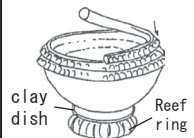

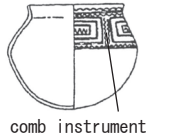


Fig.1 Pottery production areas of Massim and the typical types of pottery

Tab.1 Two pottery building processes in the Massim(modified Pétrequin et.al 1999)

ex. Amphlett Islands					
Northern Part	combine the two clay boards to make rim	lift to from the walls to make it circular cylinder-like form	paddle to make a round bottom	inner : scraping outer : decoration	interior: burnishing exterior: decoration
					
	Wooden board		Paddle	bamboo instrument	seeds or stones
ex. Panaeati Island					
Southern Part	build the clay rolls from the bottom	continue to build the clay rolls and shape it bowl-like form	interior&exterior : scraping by a shell and burnishing	exterior: decoration by combs	
					
		clay dish	Reef ring		comb instrument

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- Appliqué-decorated tradition (Northern part): Pottery built from the rim, and non-spiral coiling. Paddle and anvil are used.
- Comb-incised tradition<sup>i</sup> (Southern part): Pottery built from the bottom, and spiral coiling. Paddle and anvil are not used.

In other word, a single ceramic form is built in two different ways in the same region. Because such a situation does not seem to be common in a region of Melanesia, this similarity should be regarded as a regional specific feature reflecting a prehistoric tradition as Petrequin *et al.* (1999) and Ross (1996) suggested.

When and how this similarity was formed in Massim? Or how long can these two traditions be traced back in the Massim prehistory from the modern ethnography? This paper aims to answer to these questions. It seems that, though this subject is only about a local prehistory, it, at the same time, can lead to clarifying a new dimension of Post-Lapita studies in Oceania. The three important advantages will undeniably support this study for the Melanesian archaeology:

- Massim is thought to be a cultural crossroad connecting the northern and southern coastal areas of New Guinea mainland. This feature might have been formed since prehistoric time (cf. wide distribution of Red-slipped pottery)
- Many ethnographical records which are useful for interpreting prehistoric pottery have been collected since 19<sup>th</sup> century. Besides, the ones about traditional trades are well known as anthropological subjects (e.g. *Kula*, *Mailu*, *Kune* etc.), and pottery is one of their trading items.
- Some comparable archaeological finds in the Massim have been already published, but little are known in other areas of Papua New Guinea.

In spite of these advantages, we can point out a problem entailed in the Massim archaeology: the lack of archaeological pottery chronology. Since prehistoric trading network has been discussed as the most indispensable subjects in Melanesian archaeology (cf. Kirch 1991; Lilley 1988), it is not surprising that reconstructing or modeling of trading routes has been the main purpose of pottery studies so far in the Massim<sup>ii</sup> (Allen 1984; Bickler 1997; Lauer 1972, 1974; Irwin 1991). There seems to be a general precondition that the archaeological periodization must be consistent with the complexity of trade in the previous study (Allen 1985). As shown by a series of achievements in the studies of Lapita pottery, the combination of the pottery analysis and trade theory can be successful, but both of them are to be carried out separately. For instance, Glenn Summerhayes (2000) succeeded to propose the “Lapita interaction” model from one region, West New Britain in Papua New Guinea, by combining the pottery assemblages with the chemical analysis of ceramic minerals and matrix. One of his goals was to understand “the role of production and distribution in

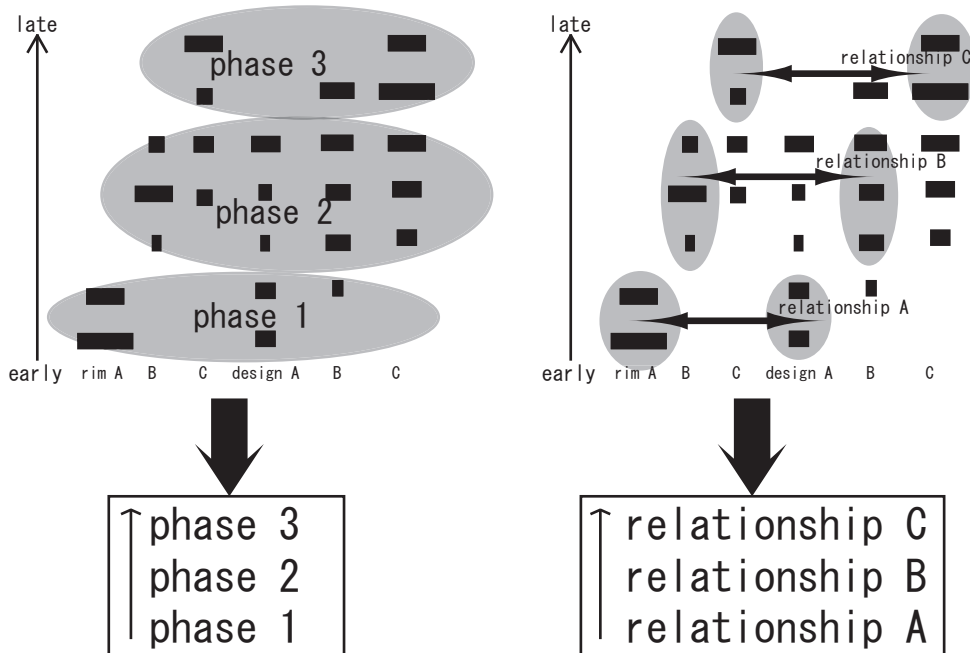


Fig.2 Two different interpretations of a seriation graph

explaining regional similarities of pottery” (2000:231). Thus, to reconstruct the reliable chronology of Post-Lapita pottery in Massim, especially based upon pottery sequence in the regional scale, and exclusively not relying on trade theory, is another goal in this paper. This pottery chronology can be a basic time scale to discuss the emergence of shallow-bowl specialized culture in Massim.

Firstly, regional pottery chronologies of four areas (Collingwood Bay, D’Entrecasteaux groups, Mailu and Muyuw islands) and their typological sequences are proposed respectively (II.1-4, III.1). Secondly, ethnographic implications on modern pottery manufactures are discussed (III.2). Finally, combining the archaeological and ethnographic information, an interpretation for the Massim prehistoric pottery culture during the last thousand years is proposed (III.3).

## I.2. Methods

Most of the previous studies analyzed Post-Lapita pottery using a “seriation” method, regarding the statistical data on the pottery attributes as the most important evidences. A common limitation of this method is known that, the typological sequence can be reconstructed only as a relative tendency, not as a series of archaeological “type”. It could be concluded that such “seriation” sequence is represented as the holistic trend among some phases (Fig.2: left). This limitation is probably associated with above-mentioned problem with which Melanesian archaeology is facing. That is, we cannot compare one site’s pottery chronology with



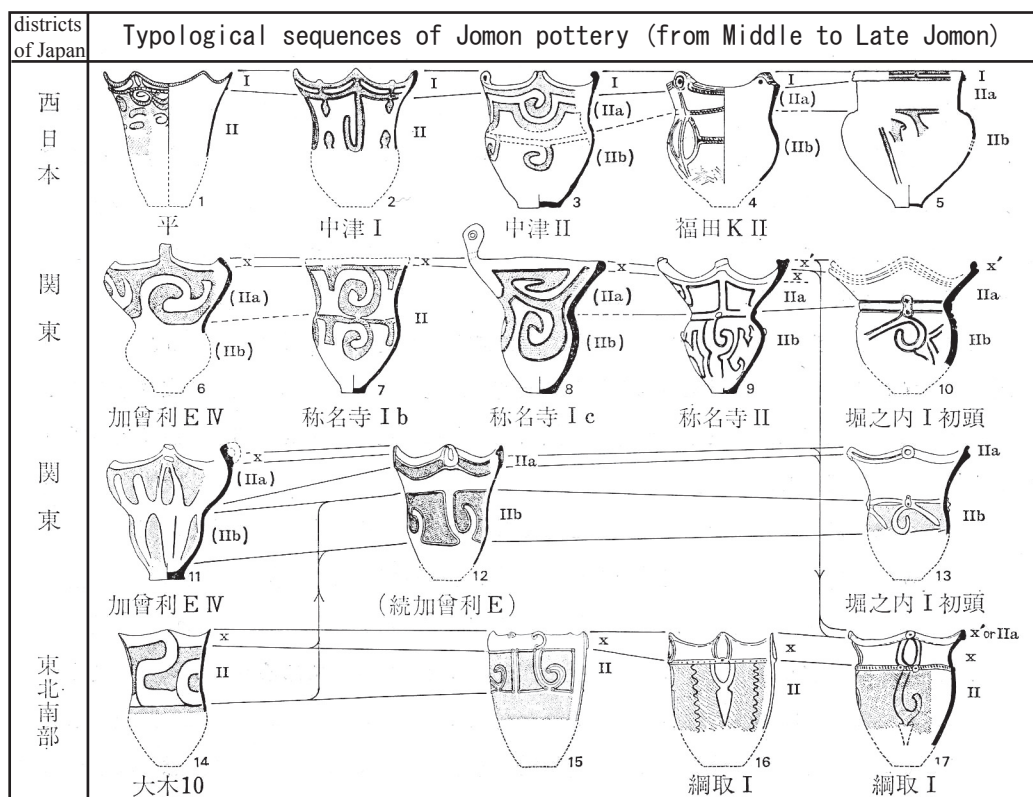


Fig.3 An example of design band analysis for Jomon pottery (modified Imamura 1983)

that of another site, without radiocarbon determinations.

Now looking at the features of modern or prehistoric Papuan pottery culture closely, however, “seriation” method is not enough to analyze their various designs and shapes. If typical design and shape are observed in a specific area in Papua New Guinea, however, we can easily recognize the local variations of them in its neighboring areas (May and Tuckson *ibid*). Although it is possible to sum up these variations all for “seriation” analysis, the basic ceramic patterns of that area still eludes us. Besides, there is no guarantee that basic design and shape will always change gradually. Instead, it is possible that they could change rapidly or evolutionary.

Therefore, a potentially more useful method for Papuan pottery could be typological method (Ishimura 2002:79), which is used frequently in East Asian archaeology. In this method, picking out a typical relationship between a design and shape, we can reconstruct the typological sequence as series of archaeological “type” (Fig.2: right). Actually, Papuan relief decorations (Rainu style; II.1.1) were once compared to Middle Jomon pottery in Japan (Joyce 1912), which was famous for its complicated decorations. This analytical process is similar to Mathew Spriggs’ method to analyze Lapita pottery: “logical sequence”

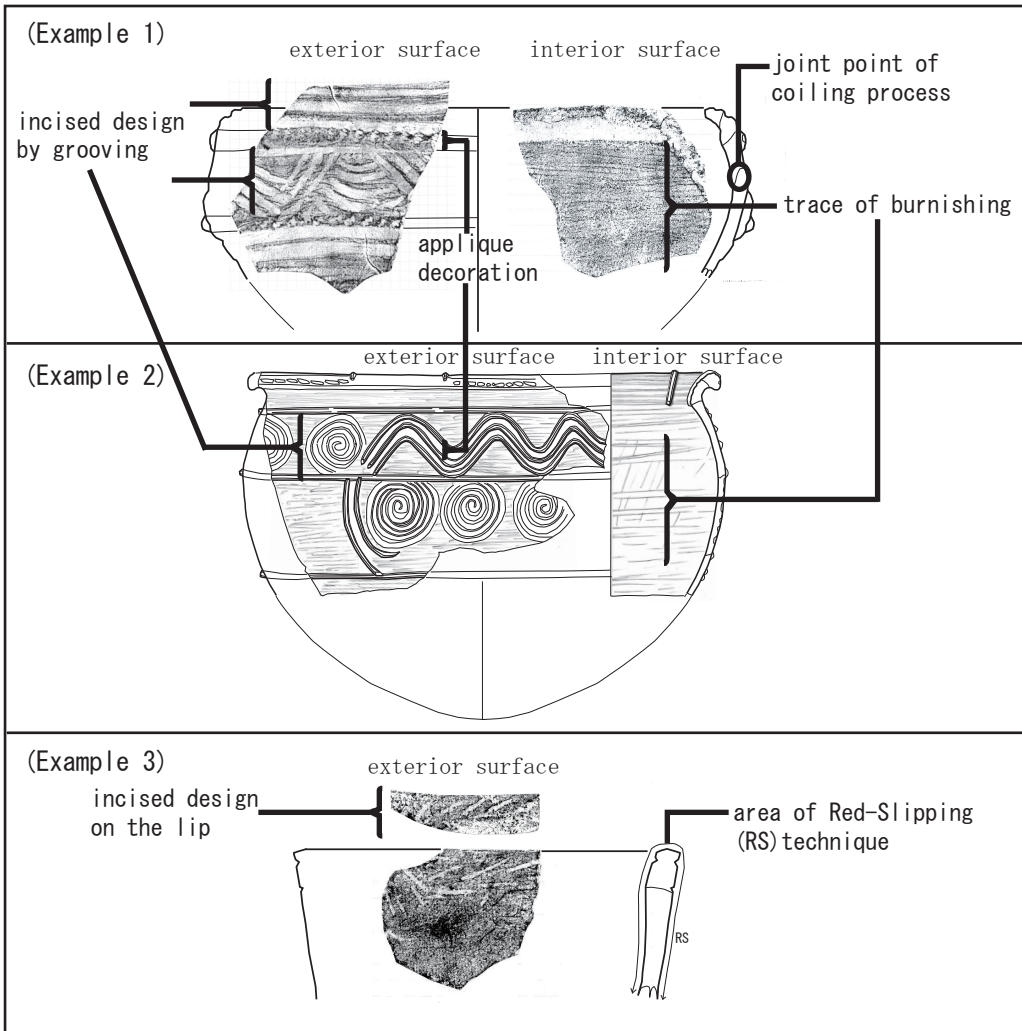


Fig.4. interpretation of the scale drawing

(1990: 84). Its final conclusion about archaeological periodization should be consistent with the result of “seriation” method (Fig.2: phase 1-3), but we can explain how a specific transformation occurred more concretely using typological method (e.g. Lapita face design). Positively evaluating such effectiveness, typological method is selectively used in this paper mainly.

In addition, using this method, we can show the parallel relationships among some regions without radiocarbon dates. For instance, especially in Jomon pottery analysis, “decoration band” (Monyoutai in Japanese) analysis has been effective for such purposes (Imamura 1983; Fig.3). This is a logical concept to explain the relationship between ceramic shape and design together, but in an actual pottery surface, appears as a horizontal decoration area. Looking at the horizontal series of pottery in Fig.3, we can understand that a

single “decoration band” (represented as “I” or “IIa” etc.) continues in the whole sequence, and is sometimes shared among some regions (Fig.3: 10.13.17). Actually, based upon the oral evidences by modern Massim potters, we can observe the similar term with this logical concept (III.1; Fig.20). And this is not archaeological analysis, but a similar decoration system was observed in the carving process of traditional canoe production in the Massim (Scoditti 1997). Anyway, because the further complicated explanations of this method are applied in the Jomon pottery studies (Imamura *ibid*), I use only its basic idea in this paper to illustrate the typological sequences (e.g. Fig.9, 10, 12, 16, 17).

In chapter II, some ceramic shards already reported by the original authors are re-reported, and others are reported for the first time. Because a set of ceramics found in a specific context should be regarded as the most important unit in my typological analysis, I need to select the typical ceramics from the original collections referring to each context of original reports, and show them as the scale drawings each by each. Because such scale drawings are made in East Asian archaeological style, how to interpret them is shown in Example 1-3 of Fig.4<sup>iii</sup>. Among them, ink rubbings (Example 1 and 3) are mainly used to illustrate the pottery decorations instead of design drawings (Example 2).

## II. Typological Analysis

First, I describe the collections found at archaeological sites belonging to Appliqué-decorated tradition (II.1, 2) followed by the description of that found in sites belonging to Comb-incised tradition (II.3, 4).

### II.1. Collingwood Bay (Wanigela)

#### II.1.1. Definition of Rainu style

Rainu is one of the villages in the Wanigela area of Wanigela-cape vogel region, the coastal area of Collingwood bay (Fig.1:1). The archaeological sites in Rainu village have been reported by anthropologists since the beginning of 20<sup>th</sup> century<sup>iv</sup>. Many burial pots which shared the similar features have been collected in the Massim (Fig. 5; Negishi 2007a: Fig.9). In the 1970's, Brian Egolff (1979) excavated some Mound sites in Rainu and Oresan village and found the good complex composed of the same style pottery. Referring to his conclusion, these Mound sites are dated about AD 1000 to AD 1500. Considering the above-mentioned situations, I call this prehistoric ceramic style as “Rainu”, taken from the name of the original site. Although no archaeologist has dubbed this style before<sup>v</sup>, this can be the name of a specific cultural complex at the same time. The chronological position of Rainu period comparing to other regions will be discussed in chapter III.

As the first step, Rainu style needs to be clearly defined. Because most of the burial pot collections have complete shapes and body decorations, the examination of these specimens should provide classification standard (Fig.5, 6). Here I summarize the ceramic features of each phase typologically, on the basis of rim

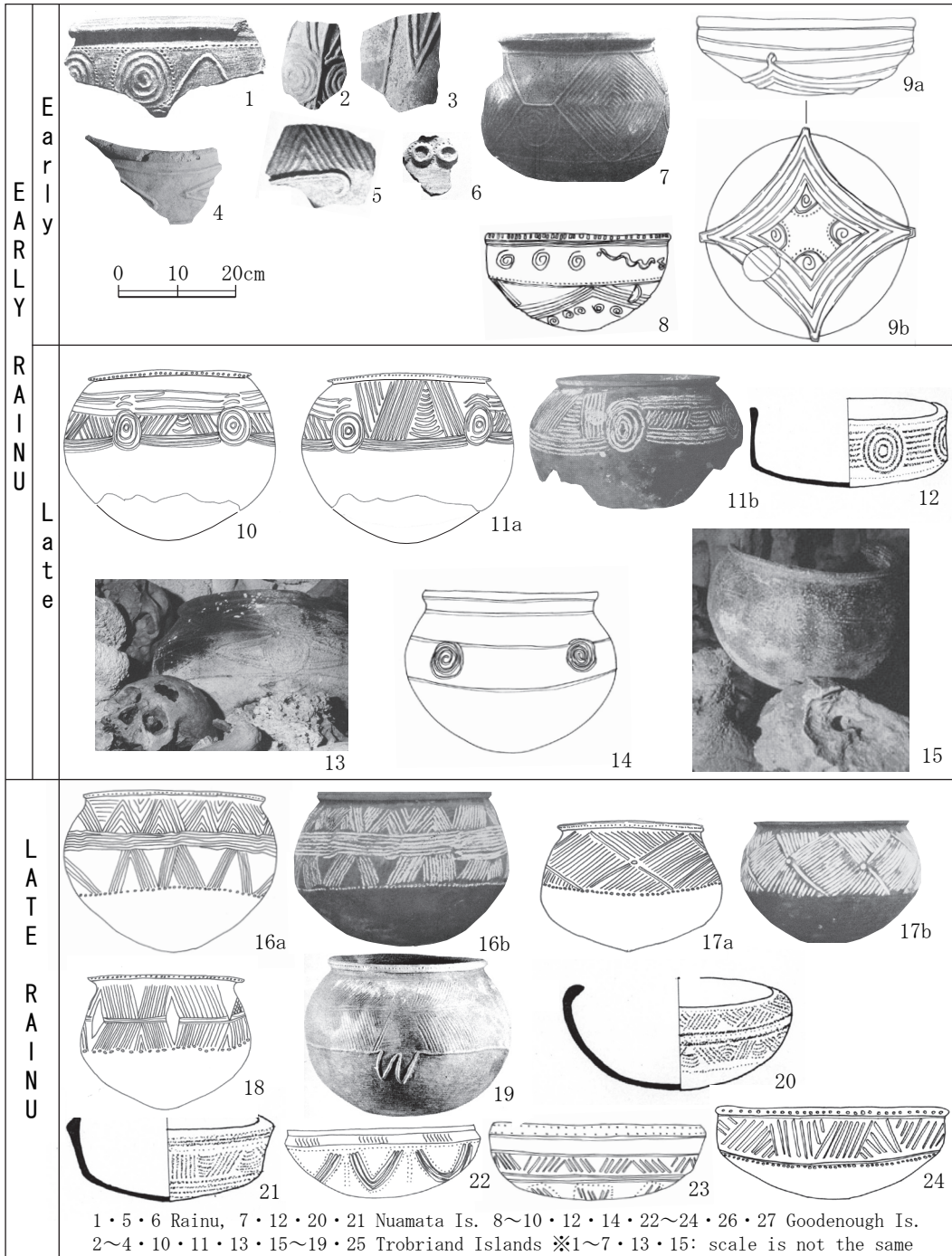


Fig.5 Rainu type burial pot collections found in Massim (modified Negishi2007)

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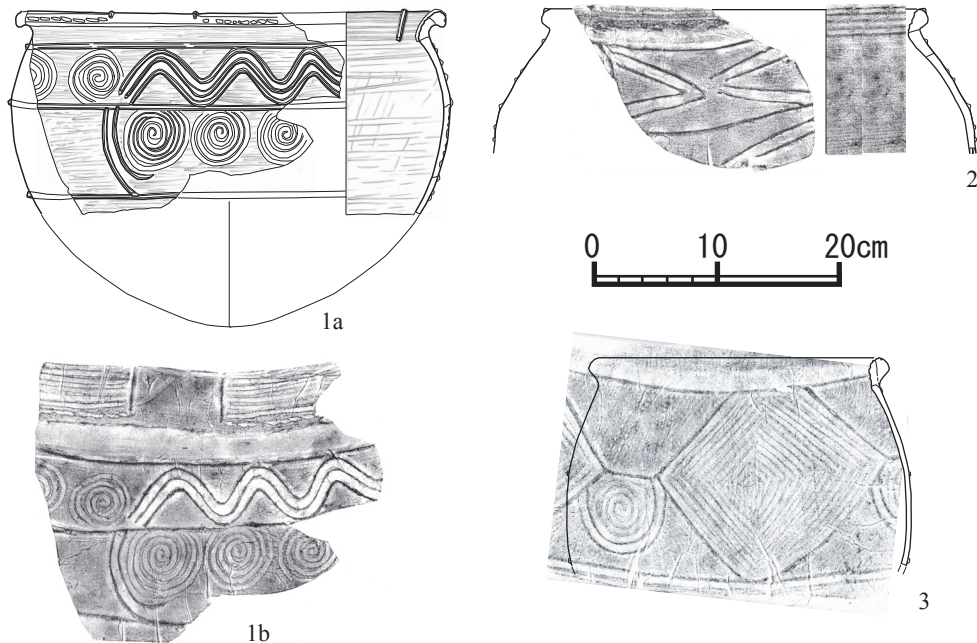


Fig 6 Early Rainu pottery

forms and body decorations (Negishi *ibid*).

### Early Rainu

This group includes pottery on which scroll or circular motif designs are attested as the body decorations. The body forms are mainly globular jar, but shallow bowl is also included. This group can be divided into two phases by some differences.

- Early phase (Fig.5: 1-9; Fig.6: 1-3)

*Rim forms:* thick everted rim (Fig.5:1.7 ; Fig.6: 1-3)

*Body decorations:* Wavy relief decorations and grooved scroll designs are main motifs (Fig.5:1-6, 8-9; Fig.6;1). Decoration area is separated into two bands and extends inside of the rim.

- Late phase(Fig.5: 10-15)

*Rim forms:* Thin rim is everted a little (Fig.5: 10-15), and sometimes punctuated (Fig.5:10-11).

*Body decorations:* Wavy relief decorations are rarely used, grooved chevrons filled with arcs (GCA) are main motifs. Decoration area is comparably shortened, and rarely separated into two bands.

### Late Rainu

This group includes pottery in which geometric designs are attested as the body decorations. The body



shapes are globular jar and shallow bowl. Because this group is rich in variety, I cannot divide it into some phases typologically.

*Rim forms:* Thin rolls of clay are applied to the rim, and punctuated (Fig.5: 16-19, 24).

*Body decorations:* Geometric designs by grooving or incising are main motifs (Fig.5: 16-24), but grooved arcs are also included (Fig.5: 20). Decoration area extends to the lower part of the body, and the boundary of decoration area is represented by a punctuated line (Fig.5: 16-18, 20, 24).

### II.1.2. Classification of Rainu phase by site layers

As the second step, I need to confirm the Rainu chronology by comparing to the results of excavation (Egolff *ibid*). While the detailed grouping of the ceramics was already reported by Egolff, I want to define two cultural complexes based on site layers to reconstruct the Rainu typological sequence. Among these Mounds which he excavated, I selected a pottery collection found from Mound C as one example. Because the percentages of some unique groups of pottery are apparently different layer to layer in this Mound (*ibid*: Fig.17, 18), and the cultural layers of Mound C was dated earlier than that of Mound B and D (*ibid*: Tab.11), Mound C would be a good example to describe the features of Rainu period<sup>vi</sup>. I chose the typical group of pottery found in Zone III and IV of Mound C, and illustrate each features in the scale drawings (Fig.7, 8).

#### **Zone IV complex** (Late phase of Early Rainu; Fig.7)

GCA are main motifs, drawn on the upper part of the body (Fig.7: 2, 7-8, 12), or on the lip (Fig.7: 4), or on the whole of the body (Fig.7: 3). Incised arcs are sometimes drawn independently (Fig.7: 6, 9). Relief designs are rarely used, only as demarcation motifs (Fig.7: 2-3). Shallow bowls (Fig.7: 1, 4) and globular pots (Fig.7: 2, 5-6) are popular forms. Decorated large lugs (Fig.7: 1) and handles (Fig.7: 6) are characteristic elements of this complex. A large shard from Zone IVA indicates that at least 12 double lugs could be attached to a single vessel (Fig.9: h; Egolff *ibid*: Plate 10e).

Considering the above-mentioned features, I can evaluate this complex as Late phase of Early Rainu.

#### **Zone III complex** (Late Rainu; Fig.8)

GCA are the same feature as Zone IV complex, but numbers of chevrons are increased and width of decoration area is expanded (Fig.8: 1-3, 5, 7-9). Punctuated horizontal bands are applied on the rim (Fig.8: 1, 5, 7). These complicated designs are not seen on shallow bowls. The combination of grooved horizontal lines and rows of punctuation are main motifs of bowls (Fig.8:10-14).

Straight-walled pots (Fig.8: 1-4), globular jars (Fig.8:5-9), and shallow bowls (Fig.8:10-14) are major forms of this complex. These ceramic form types could be related to variation of designs. Briefly speaking,

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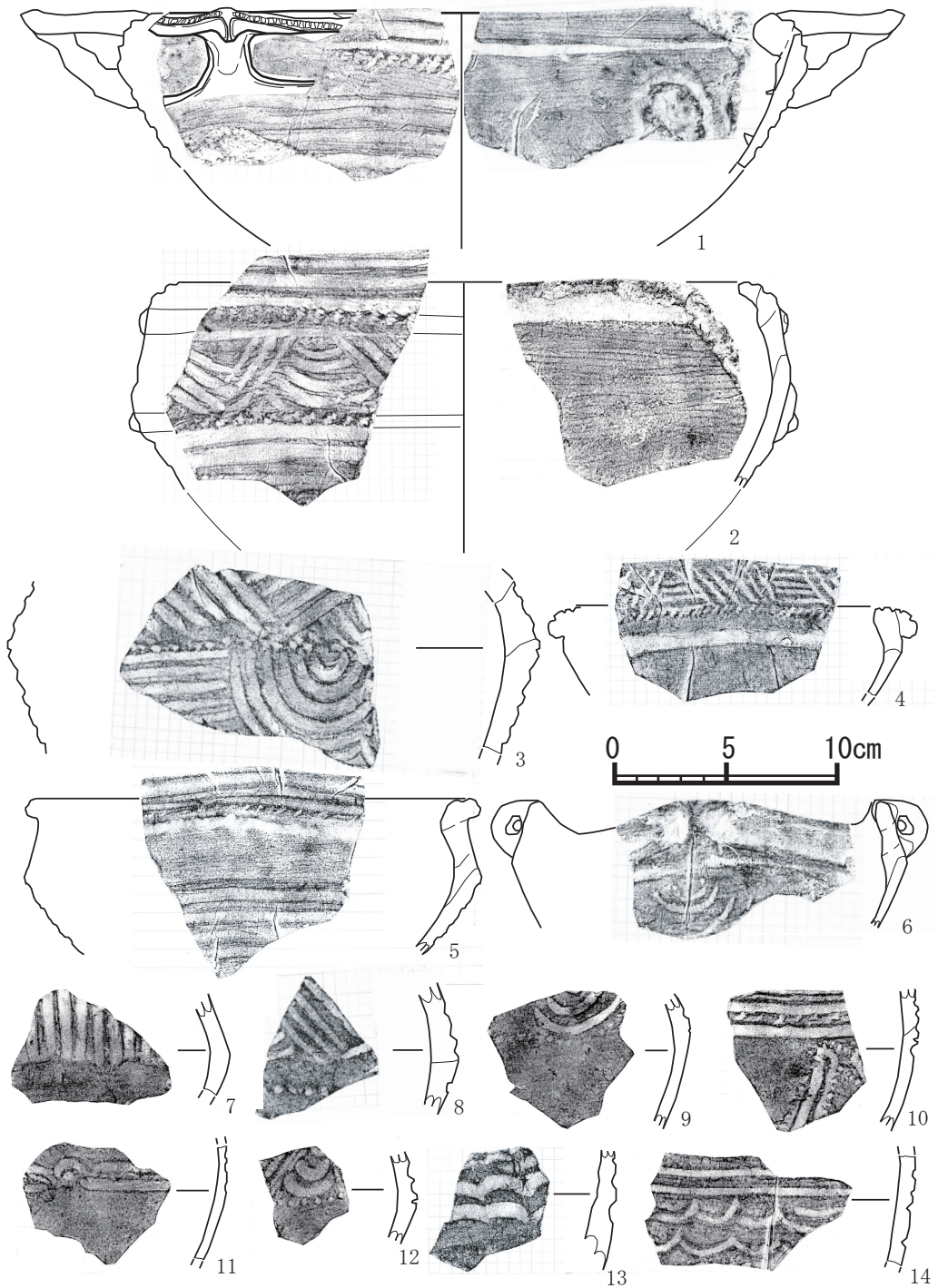


Fig.7 Potshards found in Zone IV of Mound C (Egolff 1979)

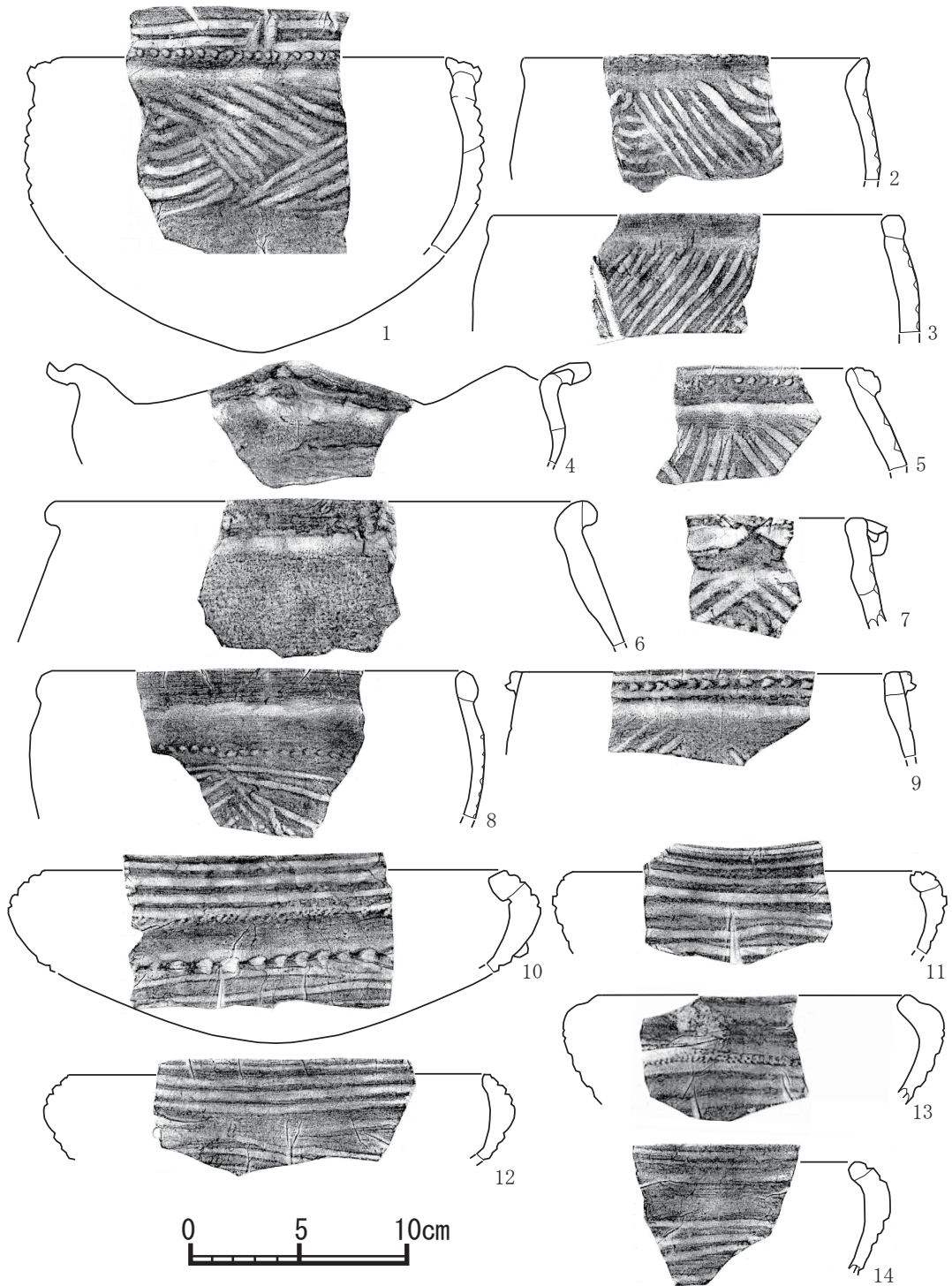


Fig.8 Potshards found in Zone III of Mound C (Egolff 1979)



complicated designs are drawn on pots and jars, simple designs on bowls.

Because GCA could be rudimentary element, I can evaluate this complex as Late Rainu. Actually, this design could only survive on the hemispherical bowls (Egolff *ibid*: Plate.9. “Group V”). This group is only found in more or less upper layers of this site (upper zones of Mound C, Mound B and D).

### II.1.3. Typological sequence of Rainu phase

Reconstructing the typological sequence of Rainu style from the viewpoint of “decoration band” is the final step of this chapter. As I mentioned before (I.2), decoration band is the logical concept that makes it possible to explain the typological sequence through some archaeological periods. The structure of Rainu design is complicated and should be subdivided into some distinctive bands similar to middle Jomon pottery (Fig.4; Joyce *ibid*). But I selected one of them to make it easy to be understood. That is, drastic transformation of a single decoration element could be the main factor to cause the gradual change of body shape (Fig.10). I suggest reconstructing model typologically as follows (Fig.9, 10).

#### Early phase of Early Rainu

Decoration area is separated into two bands by three horizontal relief (Fig.10: a). Wavy relief on the upper band and grooved scroll designs on the lower band seem to form a combination, but each of them actually applied independently. Because of this wide decoration area, the form of this phase requires globular jar in shape (Fig.9: a). Wide decoration area is also kept on the whole body of shallow bowl (Fig.9: f). The same designs as seen on jar are drawn on the lower part of the body.

I can conclude that the decoration band of this phase needs a wide decoration area composed of two bands, and is shared with jar and bowl together.

#### Late phase of Early Rainu

Decoration area is shortened to one band, with the appearance of GCA drawn (Fig.10: b). In other words, two bands of early phase are combined together, and scroll designs of early phase change to arcs on this phase. Wavy relief designs of early phase survive only as two demarcation lines. GCA are sometimes simplified and copied on the lip of bowls (Fig.9: c). Because of this narrow decoration area, the form of this phase does not require jar shape. It is natural that jars change to bowl-like shapes without everted rim of early phase (Fig.9: b). Narrow decoration area is also shared with shallow bowl (Fig.9: g, h), and arcs<sup>vii</sup> are sometimes found under the rim (Fig.9: h).

The decoration band of this phase appears on narrow decoration area, and is shared between jars and bowls.

#### Late Rainu

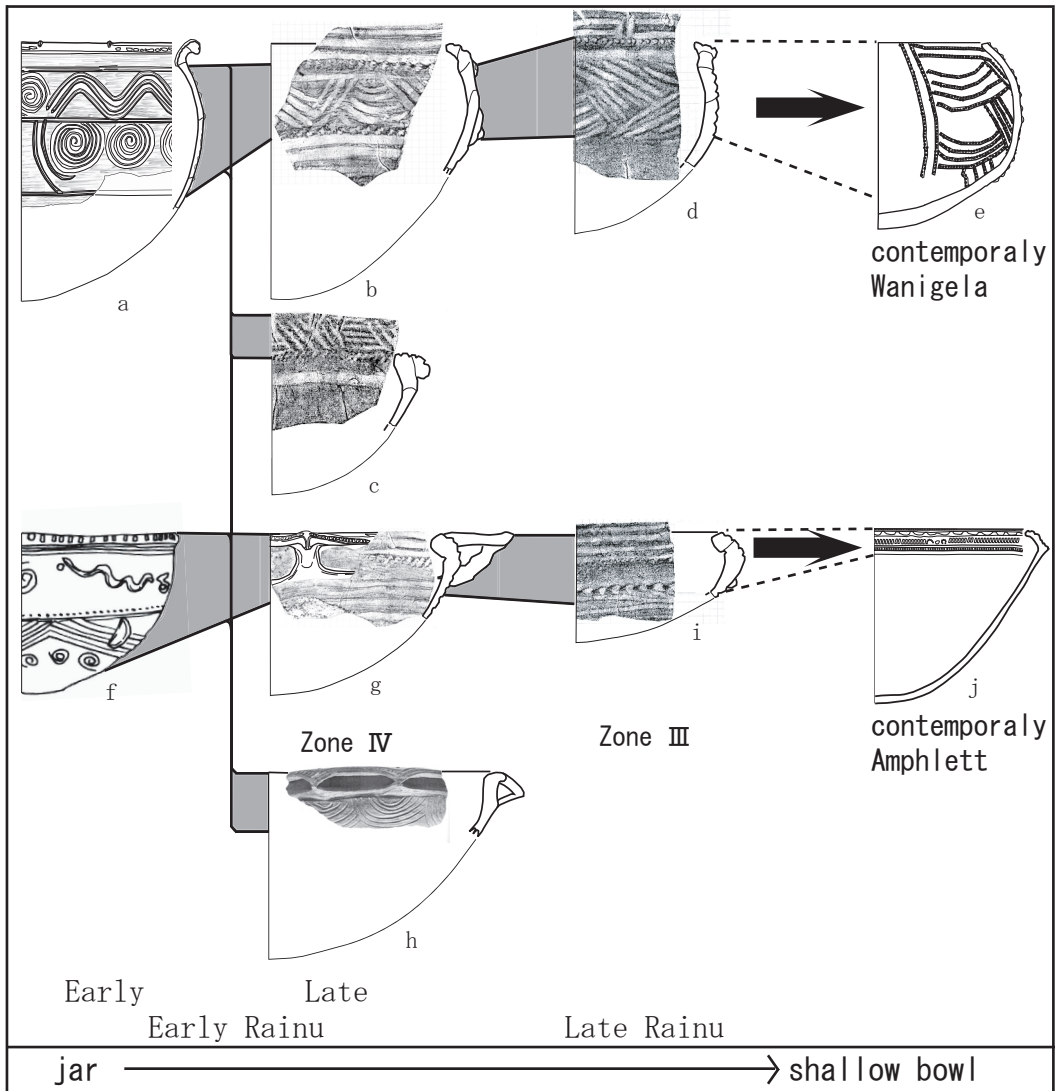


Fig.9 Typological sequence of Rainu Pottery

Decoration area is extended with the similar design combination (GCA) to the former phase (Fig.10: d). But each unit of this combination is relatively widened, resulting from the increase of the grooved lines.

The other grooved horizontal lines survived only on the lip (Fig.9: d). There is no need to divide the decoration area by horizontal lines. Because of this wide decoration area, the body shape of this phase needs to be straight-walled one. On the other hand, only the simple designs are drawn on bowls (Fig.9: i). Handles and lugs on the rim of the former phase (Fig.9: g, h) are disappeared completely. And body height is shortened, inverted rim is firmly established on bowls.

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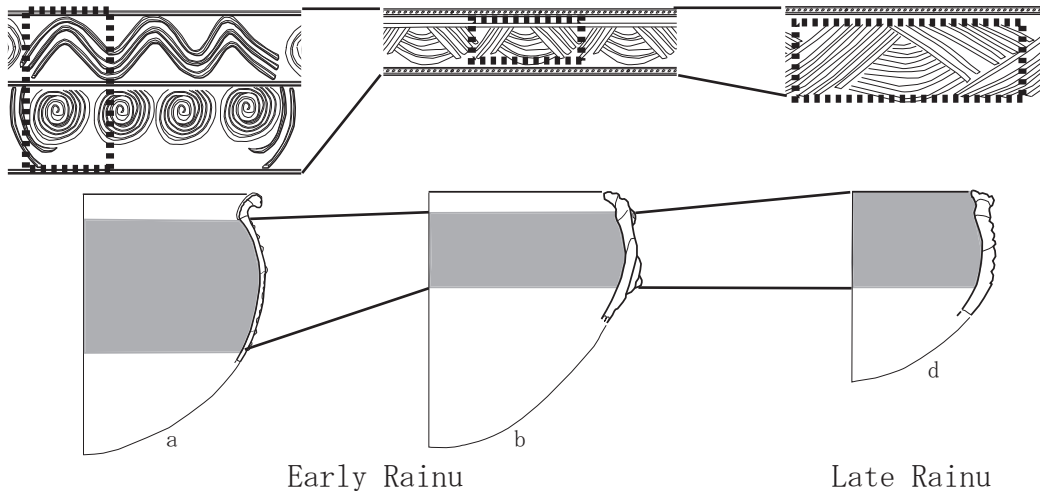


Fig.10 Decoration band structure on Rainu period (e.g.typological change of Rainu jar)

The decoration band of this phase appears on wide decoration area, but design itself is different between jars and bowls. It could be concluded that they are separately produced.

On the whole, the typological sequence of Rainu period can be summarized as two series (Fig.9). One of them is a series of jar, the transformation process of one design combination (wavy relief and scroll designs). In this sequence, a globular jar becomes straight-walled jar, and body decoration becomes more complicated (a→d). The other series is of bowl. In this sequence, an everted shallow bowl becomes inverted-short, and body decoration becomes simpler (f→i). I assume that the former persisted to contemporary Wanigela tradition (Fig.9: e) and the latter to contemporary Amphlett tradition (Fig.9:j). They originated the same tradition (Early Rainu), but separated into two series drastically (Late Rainu) and these series could persist until Modern age. The perspective of decoration band proves that Late Rainu might be the turning point in the whole sequence.

The gradual replacement of straight-walled jar by globular jar was already pointed out by Egolff (*ibid*), but only the seriation analysis could not illustrate two series of typological sequence and drastic change on Late Rainu. While Lauer (1971) and Egolff (*ibid*) argued the possibility that pot trading route to Trobriand Islands was changed from mainland to Amphlett Islands around AD 1500, I can point out another interpretation of this transition using the typology: Rainu style might change to Wanigela in the mainland, and Amphlett in some Islands. In addition, I can explain the relationship between early and late phase of Early Rainu typologically. While Egolff was confused that early phase pottery of Early Rainu (“Group F”) was found very little in every layer of Mound sites (*ibid*: 86), I conclude such situation is natural because it should be earlier than the construction of the Mound sites.

## II.2. D'Entrecasteaux Group and Amphlett Islands

### II.2.1 Definition of archaeological periods

The D'Entrecasteaux group is composed of three major Islands: Goodenough, Fergusson, and Normanby (Fig.1). Among them, pottery manufacture is known in northwest part of Goodenough Island (Fig.1: 2), and in a village of Normanby. Amphlett Islands (Fig.1: 3) are located on the northeast to D'Entrecasteaux Group. They are composed of many small Islands, and pottery manufacture is observed in some Islands among them, esp. Gumawana Island as a typical pottery-production area. In any case, it should be noted that Appliqué-decorated traditional pottery is produced.

Peter K. Lauer carried out an archaeological and ethnoarchaeological survey in Goodenough Island and Amphlett Islands mainly, and he classified three groups of potteries which were collected on some sites" surface: "Pre-historic", "Historic", and "Contemporary" pottery (1974). Since Lauer himself (1971) and Egolff (1978) already pointed out the possible trading route between mainland and these areas in Rainu period, these groups should be renamed to make it easy to be compared to Collingwood Bay area. I show the corresponding plan referring to Rainu chronology (II.1) as follows:

- "Pre-historic" → Early and Late Rainu, and their subsequent period (Pre-Amphlett)
- "Historic" → Early Amphlett
- "Contemporary" → Late Amphlett

It is easy to identify Early and Late Amphlett<sup>viii</sup>, because they apparently belong to the same style, as Lauer described (*ibid* 1974: 159-90). I separated Early and Late Rainu on the basis of their definition (II.1.1) from "Pre-historic" Group. Pre-Amphlett is defined as a middle period between Late Rainu and Early Amphlett (Negishi *ibid*).

### II.2.2. Pottery features of three periods

Because many potsherds are collected by Lauer, I selected the typical groups to be shown found in Goodenough Island based on his classification (*ibid*). That is, "PR1, 2, 14" for Early and Late Rainu (Fig.11), "PR16, 17" for Pre-Amphlett (Fig.11), and "R1B" for Early Amphlett (Fig.13)<sup>ix</sup>. There seems to be much more variations in Pre-Amphlett style ("PR18-22"), but I omit them in this paper because they are too fragmentary to be shown as the scale drawings. In addition, because the restored widths in their drawings are different from the ones in the original report (*ibid*: 206-7), I restore them as carinated jars instead of shallow bowls.

#### Early and Late Rainu (Fig.11:1-5)

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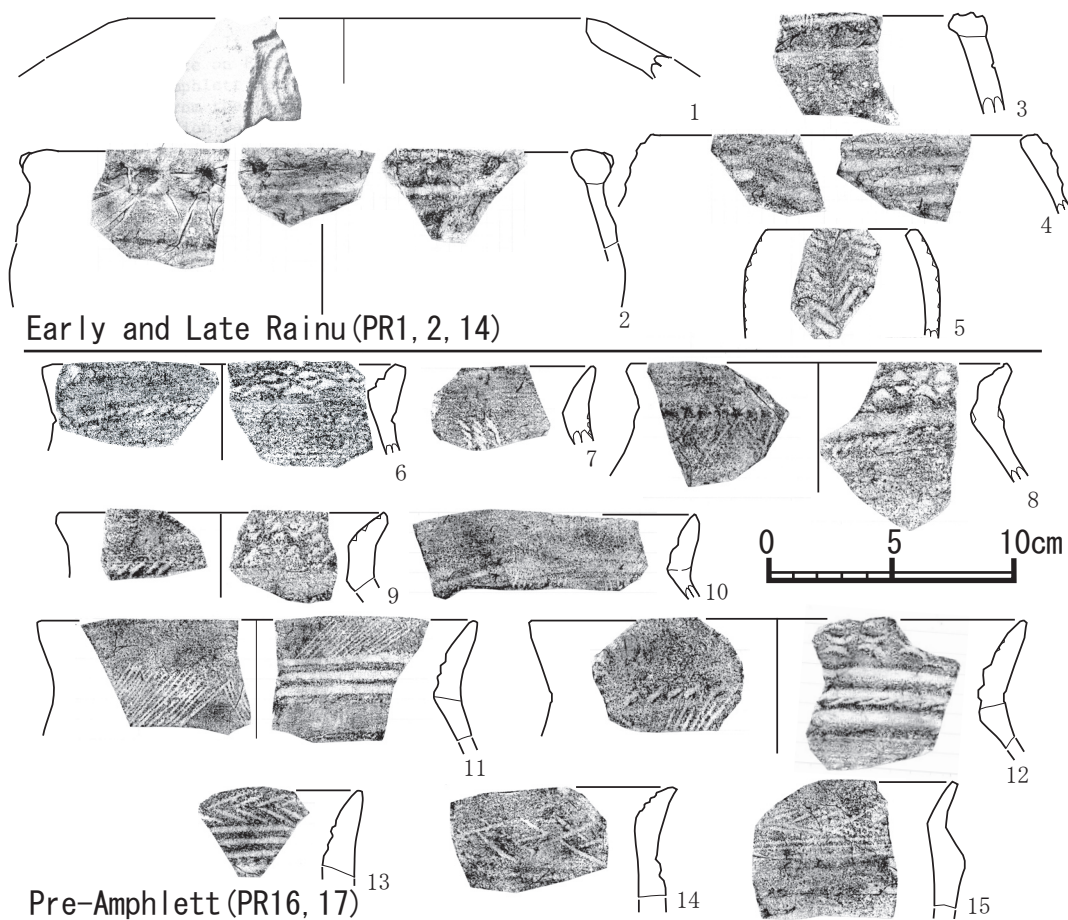


Fig.11 Potshards found in Goodenough Island (Lauer 1974)

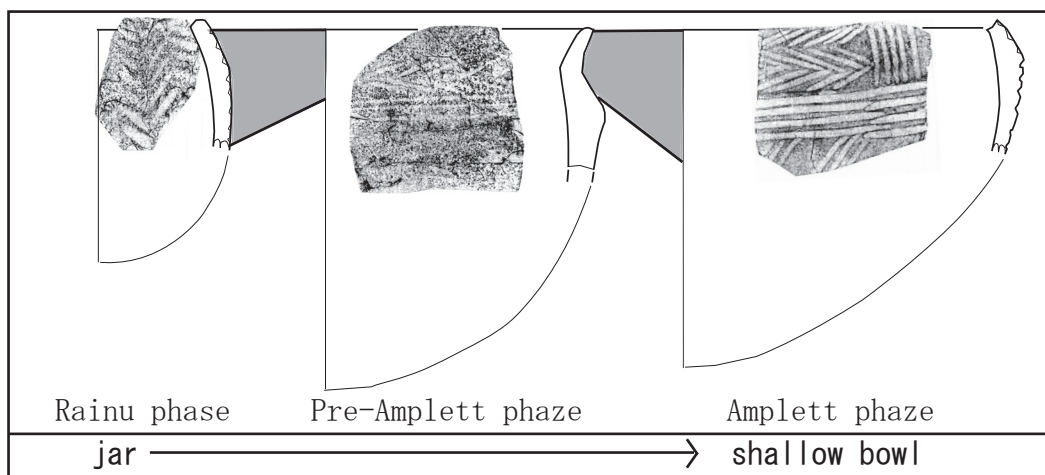


Fig.12 Typological sequence of ceramic shape and herring boned incision design

The combination of wavy relief and grooved scroll designs (Fig.11:1) and thick rims (Fig.11:1-3) are the features of Early Rainu. Nubbins on the rim (Fig.11: 2) are rarely found in Rainu Mound sites, but are found in Layer D of Mailu 3 Trench (Fig.14: 10). Body forms are basically globular jars as same as the ones from Collingwood Bay area, but everted rims are rarely observed in this period of this region. The group with grooved chevrons under the rim might belong to Late Rainu (Fig.11: 4, 5). herring boned incisions (HBI) seem to have appeared in this period (Fig.11: 5).

#### **Pre-Amphlett (Fig.11:6-15)**

Carinated shallow jars are common forms of this period (Fig.11: 6-12). In their exterior surface, the combination of stippled and incised designs are drawn under the necks of their bodies. In their interior surface, crescent-impressed and incised chevrons are drawn. Exceptionally, combination of incised chevrons and grooved horizontal designs are drawn on one case (Fig.11: 11). The pottery with HBI under the rim is another group (Fig.11: 13-15).

On the whole, the decoration band of this period should be narrow one (Fig.12), and be put under the rim on both exterior and interior surface. But there is a group which does not have decoration area on its interior surface.

#### **Early Amphlett (Fig.13:1-15)**

Distinct rules in pottery form might have existed in this period. That is, every pottery should be shallow bowl with inverted rim. Decoration band of this period would be widened in contrast to Pre-Amphlett period (Fig.12). Among the body decorations, HBI (Fig.13: 1, 3) would apparently continue from Pre-Amphlett. The combination of stippling, grooving, incising, and applying is the basic design pattern, but there seems to be some varieties. Depending on the angle of rim to the body and body decorations, I can subdivide them to two or three groups, but the difference is smaller than surface collections identified as the same period found in Amphlett Islands.

Lauer (*ibid*:173) pointed out that three-fold classification would emerge from Late Amphlett pottery found in Amphlett Islands using the potters' terms in local language: 1) *Nokuno*, 2) *Nofaewa / Vaegatoina*, and 3) the others (Fig.21), and his classification would be true of Early Amphlett period. Now if I apply this classification to the collection found in Goodenough island (Fig.13), 1) *Nokuno* (Fig.13: 4-7), 2) *Nofaewa / Vaegatoina* (Fig.13: 1-3, 8-11), and 3) the others (Fig.13: 12-15) might be picked out from them.

### **II.3. Mailu Island**

#### **II.3.1. Definition of archaeological periods**

Mailu is a small island located on the coastal area of Amazon bay, southeastern part of mainland (Fig.1:



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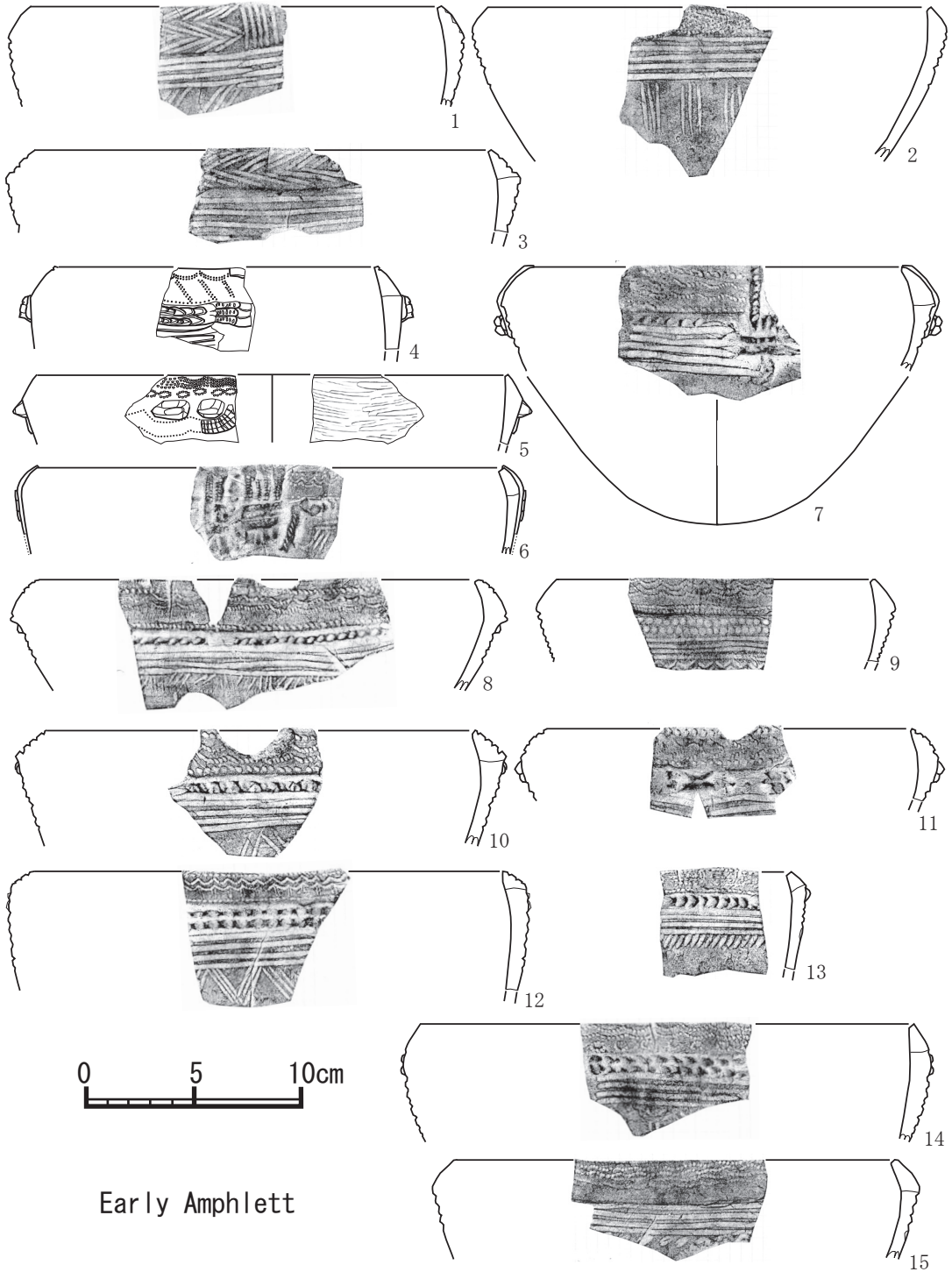


Fig.13 Potsherds found in Goodenough Island (Lauer 1974)

6). This island have been known for many years because it was a center of Traditional trade, called *Mailu*. And it has been a pottery-making center under the Comb-incised tradition in its neighboring area, Geoffrey Irwin carried out some trench excavations on this island, and classified the three archaeological periods by pottery analysis (Irwin 1985). That is, “Early”, “Mayli”, and “Mailu” periods. Fortunately these periods were established as pottery cultures intentionally (*ibid*: 158-62), so typological sequence can be reconstructed based on these periods. But among these periods, I prefer to use the period designation, Red-slipped pottery (RSP), instead of “Early period”, because RSP can be a horizon name found broadly in southern coastal area of mainland (Allen 1972; Bickler 1997; Bulmer 1999). However, RSP and other pottery dated earlier than AD 1000 are beyond the scope of this paper.

### II.3.2. Classification of phases by site layers

I selected Mailu 3 trench as one example to observe the typological sequence from RSP to Mailu period, depending on Irwin’s description (*ibid*: 110, 113-5). But unfortunately, he did not identify which layer corresponded to which cultural period each by each. To reconstruct the typological sequence in detail, these periods needs to be subdivided by site layers as far as possible. I selected the typical groups of pottery collections layer by layer, and illustrate each feature in the scale drawings (Fig.14, 15). In result, I establish four complexes based on site layers and some ceramic elements (designs and shapes) followed by Irwin’s classification terms (Exp. Late Mailu Period; Fig.1: 6);

#### Layer E-D Complex (RSP Period, Fig.14: 1-10)

Jars with everted rim (Fig.14: 3, 4, 7-9) and straight-walled vessel (Fig.14: 1, 2, 6, 7) are the main form of this complex. Simple designs by single line incision (SLI) are sometimes drawn on the upper part of the body (Fig.14: 1, 2, 6-8). Nubbins are also decoration element (Fig.14: 10). Not all the pottery are red-slipped on the interior and exterior surface (Fig.14: 3, 4, 7, 10 ; *ibid*: 108). The feature of this complex is that red-slipping technique and straight-walled vessel form coexist. Irwin pointed out a decisive ceramic break between RSP and subsequent periods (*ibid*: 162), but this feature can be continued to Layer C Complex (Fig.14: 13).

#### Layer C Complex (Early Mayli, Fig.14: 11-19)

SLI (Fig.14: 11, 13-16) and ribbon punctuated appliqué (RPA; Fig.14: 12, 17-19) coexist on this complex. They are drawn or applied separately, but basic design motif (parallel and vertical lines) is shared on them. Straight-walled or inverted bowl is the form of SLI pottery, and carinated shallow bowl of RPA pottery. Inverted bowl red-slipped on the interior surface (Fig.14: 13) can be a clue to explain the relationship with RSP period.



**Layer B Complex** (Late Mayli, Fig.15: 1-11)

Double line incision (DLI; Fig.15: 1-3, 7, 9-11) and puncture mark line (PML; Fig.15: 4, 5) coexist on this complex. They are drawn separately, but the latter seems to be minority. RPA is rarely applied (Fig.15: 1). Design motif is complicated more than Layer C Complex, but some common design elements can be pointed out (e.g.  $\wedge$  pattern). There is a variety of body forms (straight-walled, inverted, and carinated bowl), but they are almost the same. PML is apt to be drawn on the carinated bowl. Red-slipping technique may disappear on this complex, if not, could be a minority.

**Layer A Complex** (Early Mailu, Fig.15: 12-17)

DLI (Fig.15: 12-19) is only the decoration element on this complex. Design motif changes to geometric pattern. Body form becomes round-curved bowl. On the whole, every element of pottery can be standardized.

**II.3.3. Typological sequence from Red-slipped pottery to Mailu period**

The purpose of this section is the same as II.1.3, but it can be concluded that the feature of this design band is apparently different from Rainu style. Mailu decoration band structure is solid and can be traced back to Early Mayli. That is, body shape and design are replaced one after another actually, but the position of body decoration area would not be affected by minor change of any element<sup>xi</sup>. There are two simple rules about it (Fig.17: d-g):

- Decoration area must be on the upper part of the body, and its division be located at middle(curving point of shape).
- Decoration area must be sandwiched between two horizontal lines. Any design instrument will do to draw them.

These rules about such decoration band can be observed on contemporary Comb-incised tradition as well (Fig.20). Based on these rules, I can illustrate two series of typological sequence from RSP to Mailu period as follows (Fig.16, 17):

**Red-slipped pottery (RSP)**

Straight-walled vessel with SLI constitutes the main form of this phase (Fig.16: d). Decoration area is narrow, on the lip and under the rim. This type could persist to Early Mayli (Fig.16: e). Little information is known about the emergence of RPA, because I cannot find any potsherd which has appliqué from Layer D-E of Mailu 3 Trench. But on the other hand, it is difficult to evaluate that RPA suddenly appears on Early Mayli at present<sup>xii</sup>. So I choose a ceramic type which has shell-impressed design on wavy relief (Fig.16: a) as an ancestral design of RPA from another Trench (Selai excavation; *ibid*: 112). Its everted rim is common element

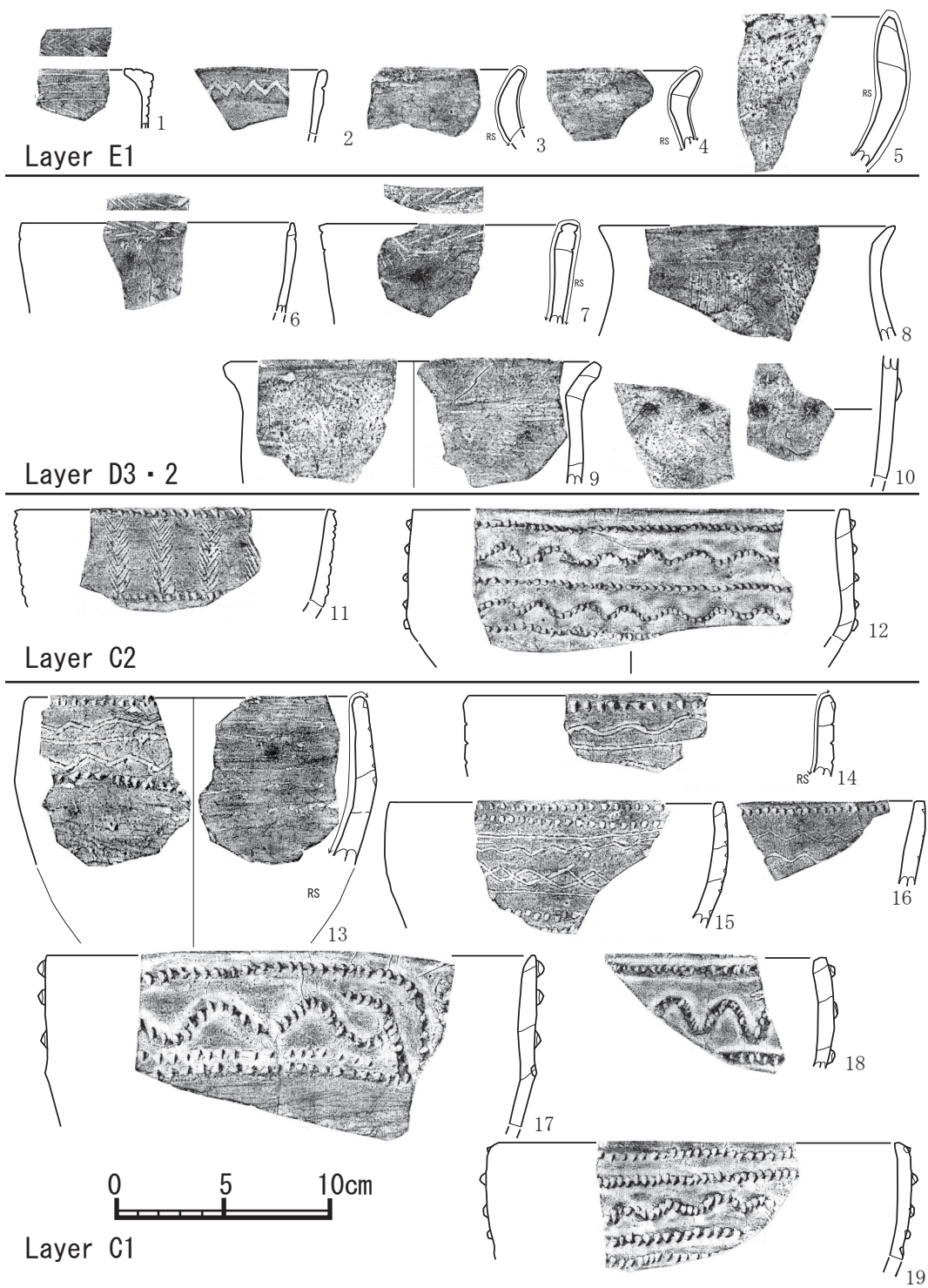


Fig.14 Potshards found in Mailu 3 Trench (Irwin 1985)

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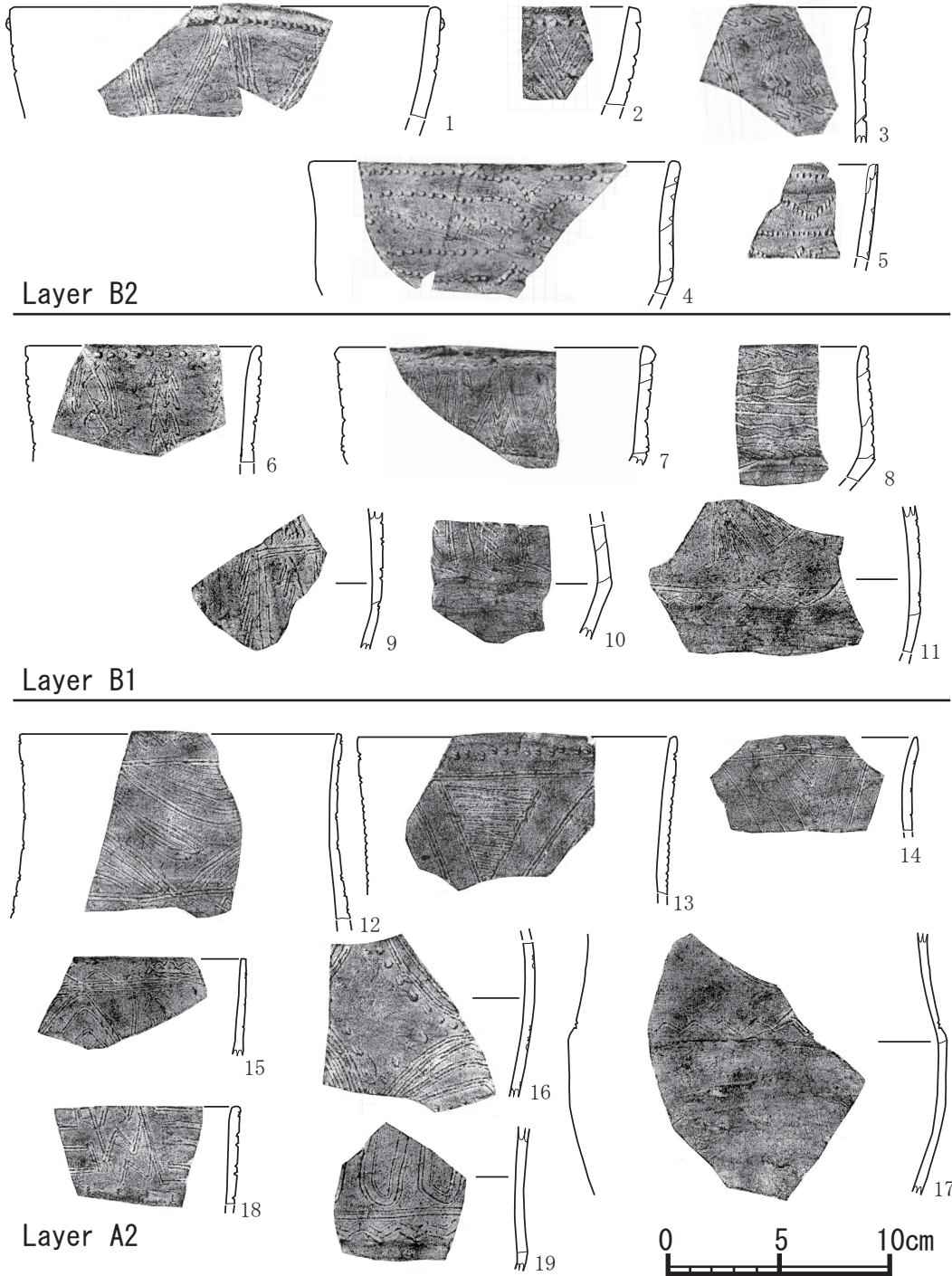


Fig.15 Potshards found in Mailu 3 Trench (Irwin 1985)

with the jars of this complex (Fig.14: 8).

Decoration band of this phase might need narrow decoration area, but it is not divided by horizontal line. Or red-slipping technique might be main decoration element instead of incised design. I can identify at least two series among the potsherds.

### **Early Mayli**

Decoration area extends to the middle part of the body (Fig.16: b-e), and lip area is disappeared. RPA is applied on carinated shallow bowl (Fig.16: b), and SLI is drawn on straight-walled bowl (Fig.16: e). SLI design is sandwiched by a row of punctuation. This could be possibly the result of imitation or replacing of RPA (Fig.16:→), because basic design motif is shared on both decorations. It can be evaluated that Mailu decoration band is already constructed on this phase. That is shared between b and e.

### **Late Mayli**

Decoration area is widened a little, and the same carinated shallow bowl form is shared between two series (Fig.16: c, f). Shallow bowl form is possibly brought to f by c, because SLI is drawn on only straight-walled bowl in the former phase (Fig.14: 13-16). RPA changes to PML (Fig.16: c), and SLI changes to DLI (Fig.16: f). Of course, Mailu decoration band is maintained.

### **Early Mailu**

Decoration area is widened to a rounded middle (Fig.16: g). This transformation is related to the change of Comb-incised design motif itself.

Generally, I conclude that the decoration band of this sequence was constructed at least in Early Mayli, and had been maintained in the subsequent history. In its changing process, some design elements repeated minor change. That is just the “process of rapid standardization” that Irwin showed as the result of cluster analysis (*ibid.*: 240). However, he did not show that this sequence was composed of two series, from b to c (possibly including a) and from d to g (Fig.16). The former brought some changes to the latter on Mayli period, and disappeared on Mailu period. It is possible to re-evaluate this sequence as declining process of appliqué design (RPA) and spreading process of shallow bowl form. Actually, these two elements formed Mailu decoration band structure. From this viewpoint, it can be concluded that Early Mayli was the turning point on a whole sequence.

Comb and Appliqué

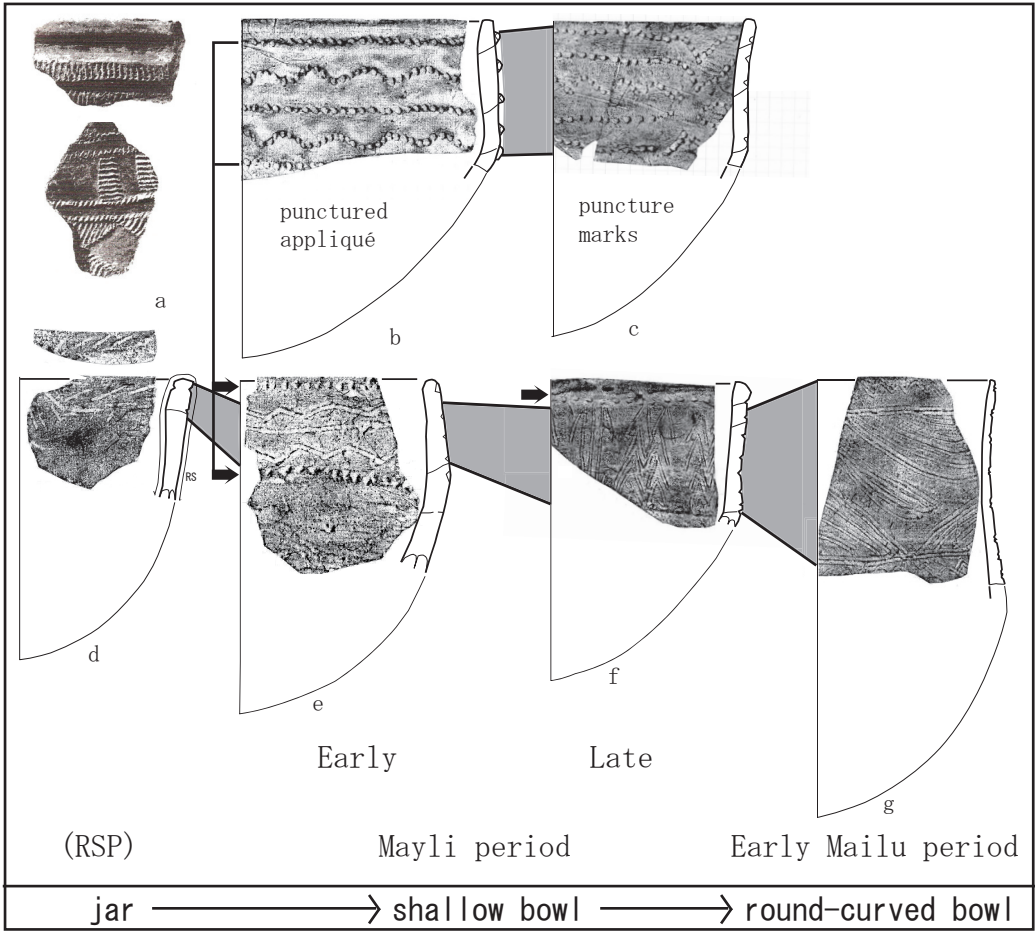


Fig.16 typological sequence of ceramic shape and comb-incised design

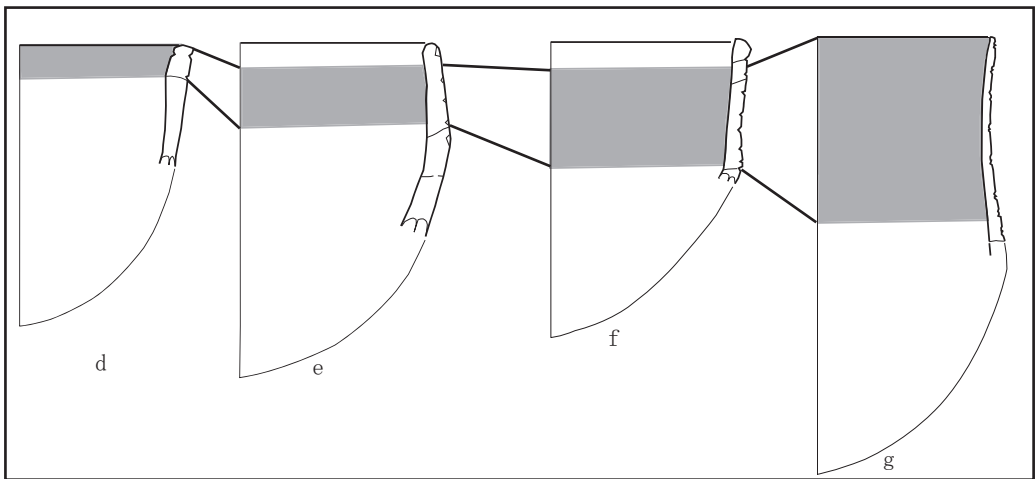


Fig.17 decoration band mechanism on the comb-incised tradition



## II.4. Muiuw (Woodlark) Island

### II.4.1. Definition of archaeological periods

Woodlark Island lies at the northeastern end of the Massim (Fig.1). In the beginning of the 20<sup>th</sup> century, anthropologists could not observe pottery making in this Island, except for burial pots. This Island has taken part in *Kula* trading network at least for last 100 years along with Amphlett Islands. Simon H. Bickler (1998) carried out archaeological research in this Island, and tried to classify some archaeological periods there. They were established by pottery analysis, but his published records about pottery mainly consisted of surface collection while he excavated ones from some structural remains. In result, he defined two archaeological periods: Early (AD 800-1400) and Late or Muiuw (AD 1400-) period. I cannot subdivide them more at present. Most of the pottery fragments belonging to Late period can be under the Comb-incised tradition based on their main design instruments. Another areas lied in southern Massim (Fig.1: 4, 5, 7-9) can be classified to the same group as them.

### II.4.2. Pottery features of two periods

I summarize the features of comparable pottery groups to other areas (II.1-3) based on the above-mentioned periods. But only two photos (Fig.18: 3-4) at our disposal as Late or Muiuw should be dated instead to Early period, because of their body decoration. Red-slipped pottery (RSP) and gray-painted pottery may well belong to Early period, but I do not illustrate them in this figure because they may be dated earlier than AD 1000.

#### Early (Fig.18: 1-8)

Everted jar (Fig.18: 1) can be compared to Rainu period because of its rim form (see Fig.18: 7-9). Of course, its incised zigzag pattern (Fig.18: 1, 2) is totally different from Rainu style. But incised scroll and chevrons (Fig.3, 4) may be much more direct evidence relating this period to Rainu (esp. Late phase of Early Rainu; Fig.10), while their profiles were not reported unfortunately. Grooved horizontal designs similar to Late Rainu (Fig.8) are drawn on the inverted shallow bowls (Fig.18: 5, 7). HBI found on the thick bowl (Fig.18: 6) is similar to Pre-Amphlett period (Fig.12). Simple lugs on their neck (Fig.18: 6, 8) can be compared to nubbins in Rainu (Fig.11: 5) and RSP (Fig.14: 10) period of Mailu 3 Trench.

While some design instruments of this period are combs, combination of these examples can indicate the relationship between this period and appliqué-decorated tradition, from Early Rainu to Pre-Amphlett period.

#### Late or Muiuw (Fig.18: 9-13)

Main form is carinated shallow bowl, but there are two types of carinated angles of them. One is straight-walled (Fig.18: 9-11, 13) and the other is inward-inverted (Fig.18: 12). The design instruments are completely

Comb and Appliqué

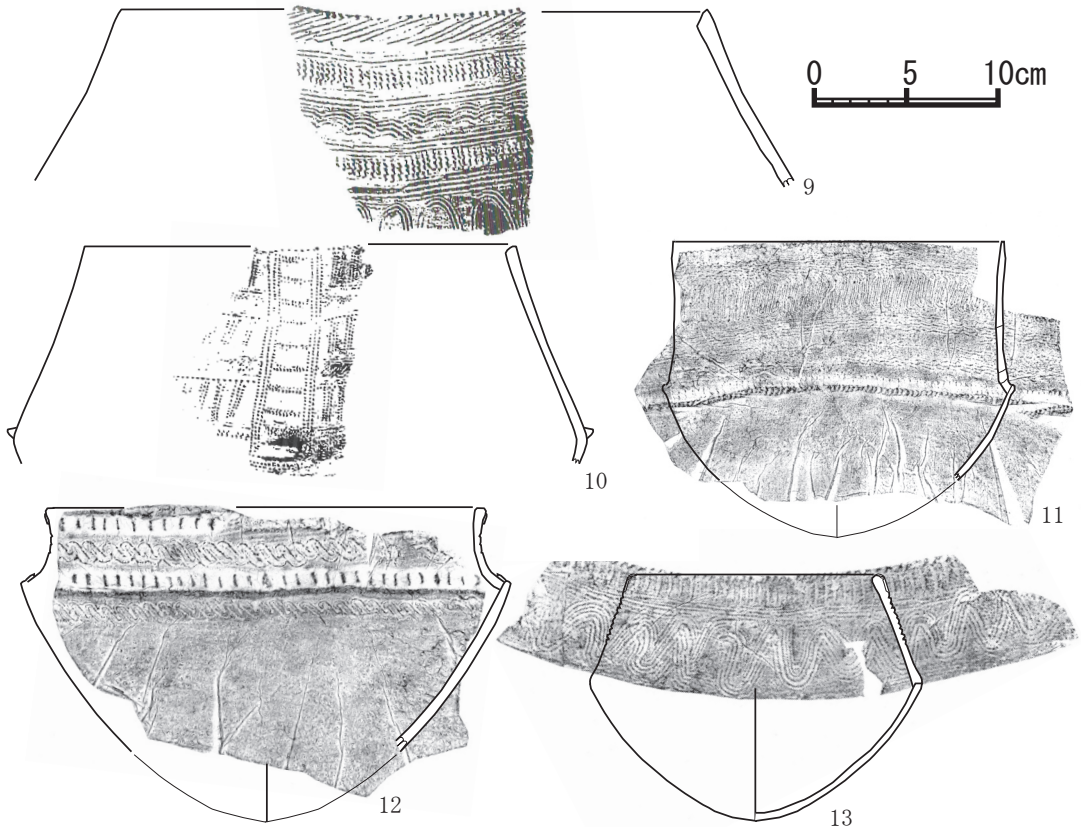
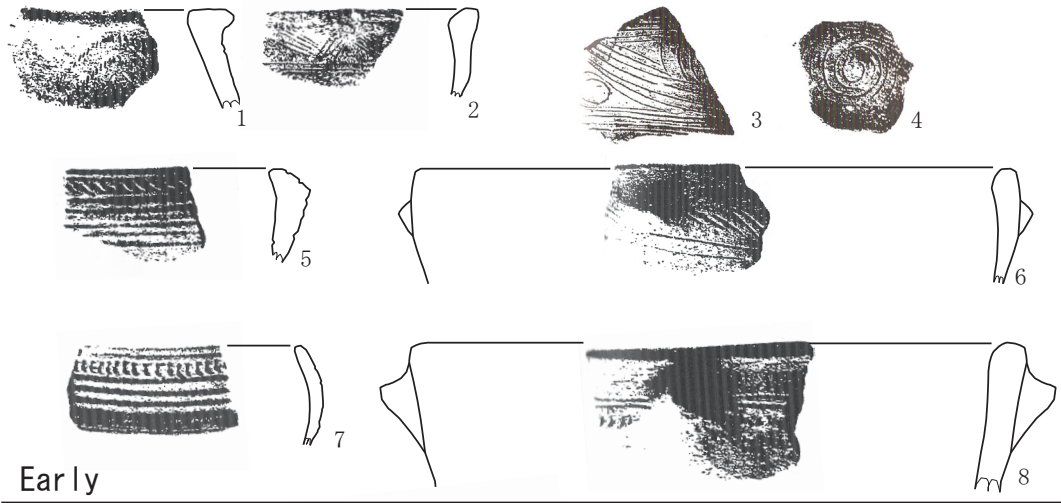


Fig.18 Potshards found in Woodlark(Muyuw)Island(1-10:Bickler 1998)

combs, and many kinds of designs are drawn only on the upper part of the body (above the middle part of body). This rule is shared with Mayli and Mailu style pottery (Fig.16-17), while the detailed body form and design technique (comb-impression; Fig.18: 9, 10) are different from them.

Pottery of this period can be the same group as Comb-incised tradition in the southern Massim, and Mailu style is also included to them.

### III. Discussions

#### III.1. Proposal of a Pottery Chronology

I re-defined each phase of each pottery culture, and revised each chronological position on the chapter II. Based on the results of archaeological analysis, and considering the proposed radiocarbon determinations (Egolff; Irwin; Bickler *ibid*), I suggest the parallel relationship of each phase during about the last 1000 years (Tab.2). Establishing the comparable chronology of Post-Lapita pottery in Papua New Guinea might be the rare trial, but I prefer the examination of the parallel relationships between some archaeological sites in wider area to the vertical sequences in single site (Bulmer 1999).

Concerning with prehistoric pottery assemblages from Goodenough Island (II.2) and Mailu Island (II.3), I basically followed their chronological order that original authors defined. However, I revised the chronological position of Early Rainu as much earlier than AD 1000 (II.1), so Early Rainu could be parallel to a part of RSP at least<sup>xiii</sup>. This idea is inconsistent with Egolff (*ibid*). It should be noted that the typological feature of Early period is originally different from Late period in Woodlark Island (II.4). Although it is difficult to propose the absolute dating data for the moment, I can pick out three archaeological Horizons in the Massim from these archaeological data as follows (Fig.19):

Horizon A: Early Rainu and (late part of) Red-Slipped Pottery (RSP)

Horizon B: Late Rainu , Early Mayli and Early Period in Muyuw

Horizon C: Wanigela, Amphlett, Mailu and Muyuw (Early and Late period of modern pottery tradition)

Most of the previous studies already demonstrated each archaeological sequence respectively, but these cultural horizons in a wider regional scale, because their main purposes were focused on reconstructing the history of trading from single site or area (Egolff 1978; Lauer 1971; Irwin 1991). On the contrary, reconstructing the Horizons A-C based on pottery analysis itself is one purpose on this paper. Besides, these horizons can be useful chronological units to clarify the other subject. That is, when and how did the shallow bowl-specialized pottery culture spread over the Massim? Gradual shift from “jar” to “shallow bowl” during the last 1000 years was a major theory in the Massim archaeology (II.1.3). Briefly speaking, Horizons A and



B are the periods of jar and bowl, and Horizon C consists exclusively of shallow bowl. From chronological viewpoint, Horizon B should be placed as a turning point of transformation. However, only the archaeological examination is not enough to answer to this question: how did this transformation occur? In other words, how did the two pottery traditions become to share a particular pottery form, the shallow bowl?

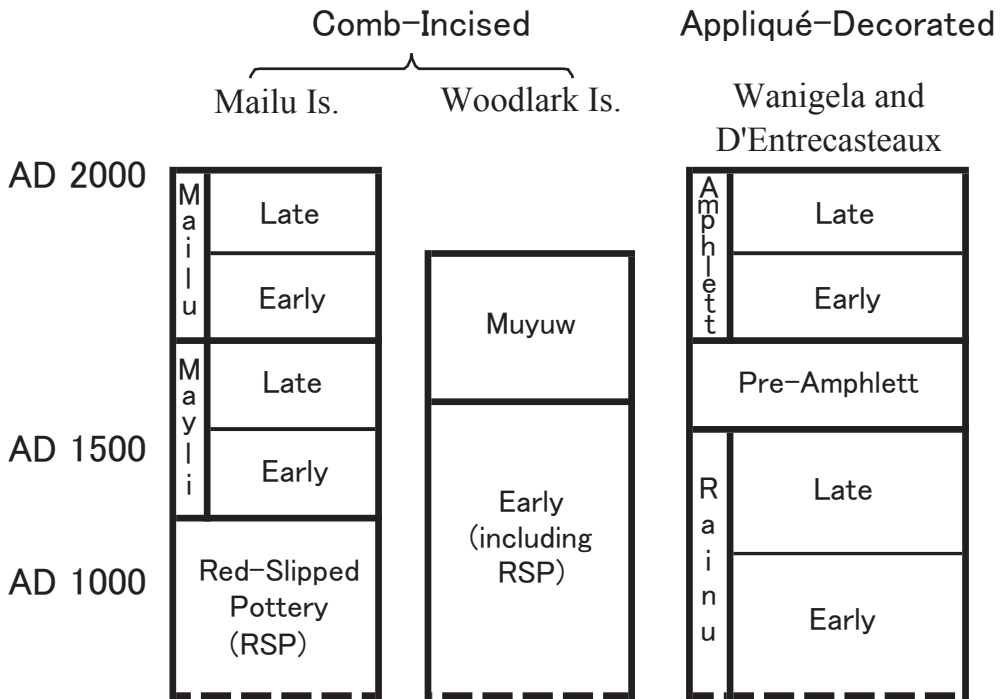
Ethnographic information about pottery manufacture should also be applied for archaeological interpretations (I.1). This can be a perspective from Horizon C to trace back to the previous periods. After referring to such ethnographies (III.2), I will propose the probable answer to the above-mentioned question at present, drawing on an ethnoarchaeological interpretation (III.3).

### III.2. Implications from Modern Pottery Manufacture

Repeated in this paper, there are two pottery traditions in the Massim: Comb-incised and Appliqué-decorated (Tab.1). Their pottery manufactures were already reported (May and Tuckson *ibid*; Lauer 1974; Irwin 1985; Macintyre 1982 etc.), but no one tried to explain the similarity or relationship between the two traditions. So the detailed comparison of these reports cannot be so practical to interpret the archaeological horizons directly. Exceptionally, the common theory is that specialized pottery manufactures can be observed in Mailu and Amphlett (Irwin *ibid*; Lauer *ibid*). In such manufactures, the pottery sizes, a variety of forms and designs are thought to be major indicators to illustrate the degree of specialization. Because the design analysis is too complicated to be introduced here, the pottery sizes and forms are discussed mainly in this section.

The shallow bowl-specialized pottery culture in the Massim was firstly mentioned by Susan Bulmer (1971). Malcolm D. Ross (1996) collected the Proto Oceanic (POc) terms about pottery-making in Oceania, and he revealed the traditional Oceanic classifications of potteries: cooking pot, water jar, bowl, and frying pan (*ibid*: 72). Each pottery term reflexes each form and function in general regions, but he described that the southeastern Papua (including the Massim) was exceptional region in which only dish-like bowls was used as cooking pots (*ibid*: 68, 71). Moreover, I can add two features which are common between the two pottery traditions. First, the position of named each body part (Fig.20). Rim, middle (curving point), bottom, and decoration area are named in potters' languages. Among them, a term Giluma can be mentioned comparing to a logical concept of typology: decoration band (I.2). This term means not only decoration area of pottery body, but also body decoration and comb instrument. Second, these cooking pots are subdivided into some pottery forms as each local language (Fig.21<sup>xiv</sup>). These local classifications are consisted of basic three types:

- Large pot for porridge and feast: *Sabaia, Abaya, Habaya*
- Middle sized pot for feast and daily cooking: *Bwana, Gulewa, Giluma, Nokuno, Nofaewa, Naukwat nobusu*



Tab.2 Pottery chronology during the last thousand years in the eastern Papua New Guinea

- Small pot for daily cooking: *Ulunligaliga, Manimo, Delevega, Kikidooyoy, Gumasila, Vaegatoina, Ramo*

Archaeologists can hardly recognize the differences among them, but the Massim potters regard each of them as an independent “form”. They had shared this standard since the beginning of 20<sup>th</sup> century at least, so it is possible to assume that this could date back to prehistoric times. Among them, Amphlett potters produce these six forms of clay pots at Trobriand Islander’s daily use as *Kula* trading wares (Lauer 1970). Goodenough potters also have the same tradition, but Lauer could not observe the same classifications there in 1960’s (1974). So he concluded that these classifications were the evidence of ceramic specialization (*ibid*). On the other hand, Mailu potters produce only one form of clay pot as *Mailu* trading ware (Irwin 1985; Fig.1: 6), but its size and design are almost standardized. Irwin stated that its identical feature could be the evidence of specialization (*ibid*). Therefore, it can be emphasized that the processes of ceramic standardization are different between two traditions in the Massim.

On the contrary, Comb-incised traditional potters in the southern Massim have, so to speak, some intermediate pottery manufactures between Amphlett and Mailu (Fig.1: 3-5, 7-9). Their basic techniques are shared with Mailu manufacture (Tab.1), but their varieties of pottery forms are similar to those of Amphlett

Comb and Appliqué

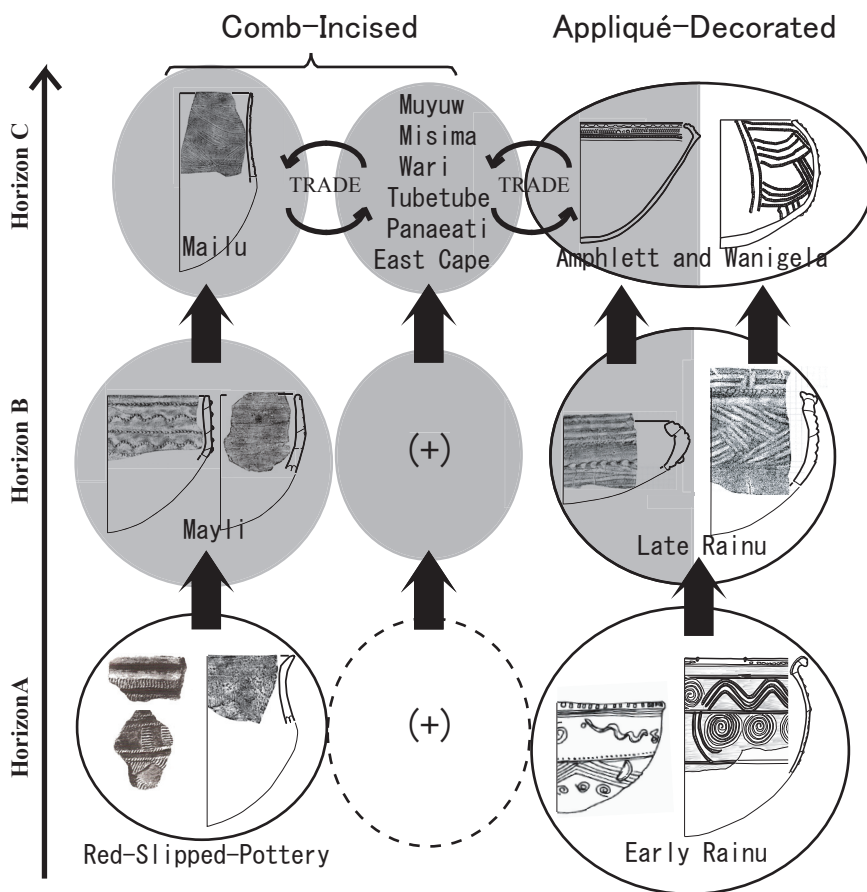


Fig.19 Transformations and relationships among pottery cultures during the last thousand years in the eastern Papua New Guinea

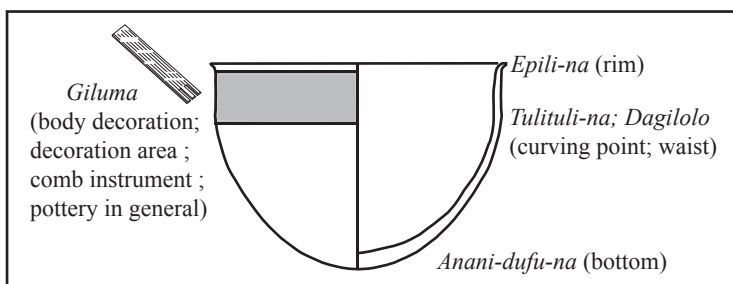


Fig.20 Native term for pottery production(e.g.East cape,*Tawala* language)

(Fig.21). Although many scattered Islands in the southern Massim joins the *Kula* trading network, their ceramic production was not evaluated as standardized or specialized. Rather, they have been locally-made inter-island trade wares for long years (Macintyre *ibid*). Let me take an example to illustrate its regional feature here. On-going ethnoarchaeological research in East Cape, the most eastern tip of New Guinea mainland, has been shown that obviously (Takahashi *et al.* 2007). I introduce a potter's recognition about ceramic form variations in East Cape here (Fig.22<sup>xv</sup>). Basic three forms (Fig.22: 1-4) were already known (May and Tuckson *ibid*: 101-6), but information about another pottery forms are collected in our research (Negishi 2007b). Paying attention to the correlations between imitation<sup>xvi</sup> techniques and local terms in Tawala language (Ezard 1997; Williams 1962), they can be subdivided into four categories of pottery groups in the potter's recognition:

Level 1: Exported pottery from other areas (Fig.22: 13-16) e.g. Wari(e)<sup>xvii</sup>, Mailu, Amphlett etc.

Level 2: Local-imitated forms of exported pottery (Fig.22: 10-12) cf. “Wogo<sup>xviii</sup>-X” (X is a name of foreign area)

Level 3: Incomplete forms of basic four forms (Fig.22: 5-9) cf. “Wogo-Y” (Y is a name of basic form)

Level 4: Basic four forms of East Cape tradition (Fig.22: 1-4) cf. *Giluma, Pidola, Habaya, Gumasila*

It is more likely, on the basis of this oral evidence, that East Cape pottery production is the flexible combination of two pottery traditions. Although it is one of the Comb-incised traditions, we can point out some effects from Appliqué-decorated tradition in East Cape pottery production. For instance, *Gumasila*, imitated form of Amphlett ware (Fig.22: 4), belongs to Level 4 firmly. Besides, East Cape potters also imitate the pottery exported from other areas of Comb-incised traditions (Level 2). The imitation techniques play an important role, as it were, in its structure composed of four categories. Of course, this structural system reveals only one dimension of the whole pottery manufacture, but it can be concluded again that East Cape potters have an intermediate feature between the two traditions. Such feature may have been shared with other areas in the southern Massim<sup>xix</sup>.

### III.3 Interpretations of the proposed archaeological horizons and their backgrounds

I propose that there were some intermediate pottery manufactures between the two traditions in the archaeological Horizon C (Fig.19). This Horizon involved not only traditional pottery trading throughout the Massim, but also information exchange about pottery making. It is likely that pottery manufactures in the southern Massim functioned to bridge these two traditions historically, depending on potters' “imitation” techniques.

Consequently, a tentative answer for the above-mentioned question about the appearance of shallow-

Comb and Appliqué

C O M B I N C I S E D	P a n a e a t i l s.	<i>Bwana</i>	<i>Ulunligaliga</i>	<i>Sabaia</i>
		<i>Ulunbwal</i>	<i>Manimo</i>	<i>Delevega</i>
T R A D I T I O N	W a r i l s.	<i>Gulewa Unsansan</i>	<i>Kikidoydoy</i> (+)	<i>Abaya</i> (+)
		<i>Giluma</i>	<i>Gumasila</i>	<i>Habaya</i>
A P P L I Q U E I D E C O R A T E D	A m p h l e t t l s.	<i>Nokuno</i>	<i>Nofaewa</i>	<i>Nosipoma</i>
		<i>Aidedeya</i>	<i>Alimanu</i>	<i>Vaegatoina</i>
	W a n i g e l a	<i>Naukwat nobusu</i>	<i>Ramo</i>	

Fig.21 Local classifications of ceramic form in the Massim

bowl form in the Massim is that, both of the two pottery traditions transformed together to be bowl-specialized in Horizon B, not accidentally or independently (Fig.19). The intermediate pottery culture, which is a part of Comb-incised tradition, might have appeared through the imitation techniques. Despite the scarcity of direct evidences supporting this hypothesis, there are some traces in the archaeological contexts. For example, Rainu and RSP were partly parallel in time scale, but totally different pottery cultures except for the main pottery form, jar. However, a few design elements might be shared among them (Fig.7:13-4 ; Fig.18:1-4). Actually, some pottery features of Early period in Muyuw (II.4) can be evaluated as a part of Appliqué-decorated tradition. Emergence of ribbon punctuated appliqué (RPA) in Early Mayli (II.3), and some lugs applied on the large pot form (e.g. *Habaya* of East Cape) in Horizon C can also be originated from Appliqué-decorated tradition. And the most important thing is, a specific form (shallow bowl) and decoration band are shared in Horizon B. Because these lines of archaeological evidences may show the “imitation techniques” of design elements between the two pottery traditions, the same concept of “imitation techniques” may also apply to pottery forms: shallow-bowls. Therefore, Horizon B can be defined as the “interactive imitation” period in the Massim prehistory.

This paper addresses the lack of archaeological periodization (I.1) as a main problem in the previous studies. I establish the pottery chronology in the Massim period by period, and present a hypothesis to explain the diachronic changes in ceramics without mentioning prehistoric trade. This chronological scheme will be criticized in some points in the future, but the general trend of proposed ceramic transformation remains acceptable. As I mentioned in chapter II, the design and shape of Papuan pottery were intertwined in terms of each decoration band, and changed gradually in each sequence. In addition, this paper does not deny all the results of previous studies. Furthermore, Horizon B can also be interpreted as the appearance and development of *Kula* trade, which is in accord with Irwin’s suggestion (1983: 71): “the *kula* as such probably developed only in the last 500 years”. If both interpretations of this paper and Irwin are consistent, I can add new dimensions of *Kula* ring from archaeology: the exchange of the shallow bowl-specialized ceramics and the “imitation techniques” among the different cultural traditions. Nevertheless, this issue may await further investigations.

Finally, I reiterate that pottery analysis should be distinguished from other research subjects, and be started from small areas. To trace back the prehistory of the whole Papua New Guinea, a regional pottery chronology should be proposed first. The areal extent of the Massim is suitable for a regional study, That is why comparable studies in much more wider area (Garanger *ibid*; Solheim II 2003) should be carried out on the basis of these regional pottery chronologies. Paying attention to the essential difference between Rainu and RSP style in Horizon A, we can assume the different origins of both. Probably this difference led to the two modern pottery traditions in the Massim. On the other hand, Jack Golson (1972: 581-8) pointed out the similarity of design elements between Rainu style and Dong-son culture in Vietnam, or between

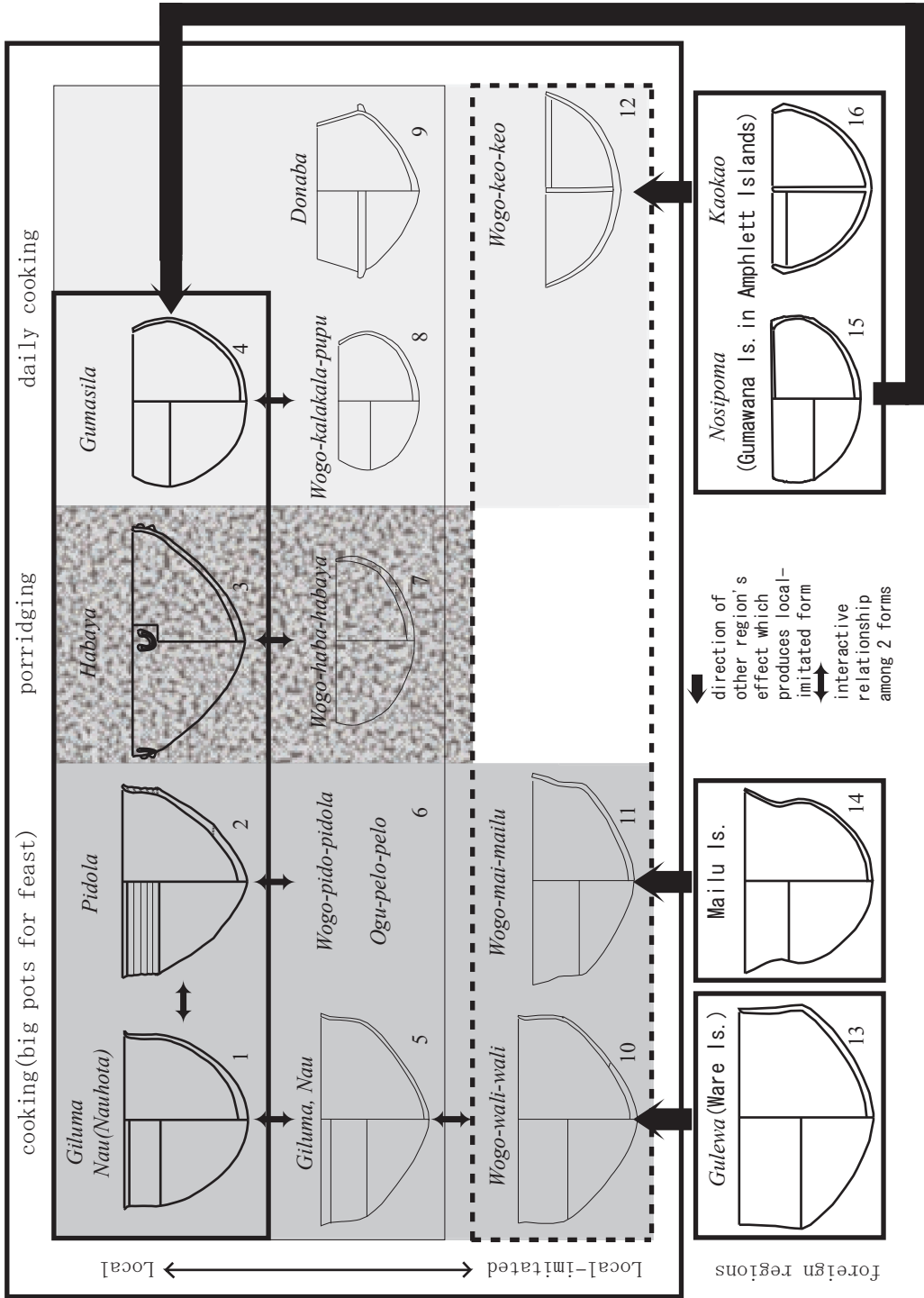


Fig.22 Ceramic form variations and their each relationships of contemporary East Cape ceramic culture(Negishi 2007b)

modern Mailu style and Kalanay culture in Philippine. Of course, although I cannot deny these similarities completely, such illogical jump concerning superficial similarities in the archaeological contexts, probably based on diffusionistic theory, should be criticized. To make such comparable studies possible, we need to continue chronological study of Post-Lapita pottery (e.g. Bulmer 1999), and connect them with Lapita pottery. As shown in this paper, rich ethnographic records will provide many useful concepts for such future works.

#### **IV. Conclusion**

This study is aimed to prove the cultural feature of pottery manufacture in the Massim region from archaeological perspectives: the shallow-bowl specialized culture. Typological analysis illustrates the comparable pottery chronology composed of five archaeological periods at most, and three Horizons during the last thousand years in the eastern Papua New Guinea. This might be the first trial to combine the previous studies' results of four areas without relying on the prehistoric trade (Tab.2), and might be the useful time scale for Melanesian archaeology. Referring to the results of ethnoarchaeological survey in East Cape, I can clarify some intermediate features between Amphlett and Mailu traditions, which Comb-incised traditional potters in the southern Massim have shared. "Imitation techniques", oriented to pottery forms and designs, can be the main factor to produce such cultural features and function to bridge two pottery traditions historically. Considering the mutual relationships between the two traditions based on this technique, it can be concluded that Horizon B is the turning point in the Massim prehistory: the emergence of the shallow-bowl specialized culture. This hypothesis can provide a new perspective of the Massim prehistory without relying on *Kula* ring.

Nonetheless, I feel the results of this paper are not sufficient yet in three respects. First, I intentionally omit the detailed comparisons of all the previous collections found in the Massim. To prove the importance of typological method, I should show the statistics of classifications on all the pottery fragments. Second, in the chapter III, I only introduce a simple model of ceramic variations representing East Cape tradition. Further low data and a much more detailed model about ceramic transformation should support my hypothesis. Third, I should compare the Massim form-oriented pottery tradition to Lapita pottery as series of Melanesian archaeological works. Proposed analytical concepts in potters' recognition must be described and inspected properly in the wider Melanesian context: "decoration band", "exported pottery", "local-imitated form" and "imitation techniques".



## Acknowledgements

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## Notes

<sup>i</sup> The adjective “incised / appliqué” is used to indicate the prehistoric pottery found in a number of sites on New Britain, New Ireland, etc (Bulmer 1999). These pot shards were similar to Manganasi pottery of Vanuatu, and “incised / appliqué” was used first to describe them (Garanger 1971). Because there is no evidence to connect them to two ceramic traditions defined in this thesis, the designations in this paper could be ambiguous for archaeologists. However, this is an attempt to clarify the two sequences in the Massim.

<sup>ii</sup> For instance, Peter. K. Lauer interpreted that the transformation of pottery style in Trobriand islands could show the prehistoric changing pattern of pottery trade, and he assumed that AD1500 could be transformational period (Lauer *ibid*). Recently, the appearance of *Kula* trade has been discussed from another viewpoint (Bickler1998; 2006), but they are not based on pottery chronology.

<sup>iii</sup> Among the ceramic drawings in this paper, ink rubbing is used mainly to illustrate the design and any other trace on the ceramic surface (Fig.4: Example 1, 3). Scale drawings using ink rubbings are frequently used in East Asian archaeology. Joint points on the coiling process (Fig.4: Example 1) and traces of burnishing (Fig.4: Example 1,2) are also found in the ceramic drawings.

<sup>iv</sup> Some sites were excavated and the unearthed pottery were reported by some authors (Pösch1907a, b; Seligmann and Joyce 1907). The features of this prehistoric pottery were once described in detail and compared to Middle Jomon pottery (Joyce *ibid*). This comparison is of course unsustainable, but the similarity itself should not be denied even now due to their Jomon pottery-like decoration band.

<sup>v</sup> However I used the term “mainland coast style” based on Egolff’s description before (Negishi *ibid*), I change that name to “Rainu” in this paper referring to original site’s name.

<sup>vi</sup> Rainu period is equal to his term: “Expansion phase” (*ibid*: 86). Pre-Rainu pottery, expressed by Egolff

himself as “Pre-Mound” or “ Early ceramic” pottery, is not discussed in this paper. And Post-Rainu pottery (“Refuge phase”) was found in upper zones of Mound B and D, but I do not examine it in detail on this paper. Instead of that, I show Pre-Amphlett pottery as the middle period between Late Rainu and Early Amphlett (II.2).

<sup>vii</sup> Comparing f with h (Fig.8), it seems that only arcs survive to late phase. I face one problem; why wavy relief decorations of early phase disappear in late phase? I can indicate one possibility that lugs or handles (Fig.8: g-h) of late phase could replace such designs.

<sup>viii</sup> In the following sentences, I name the each modern pottery tradition in the Massim as “Late”, and its direct ancestral phase as “Early”. For example, I describe Early and Late Mailu (see II.3). As Lauer (*ibid*: 174-5) succeeded to identify the local name of “Historic” pottery depending on his informants’ memory, we archaeologists can collect and identify the Early phase of modern pottery tradition even now. Our colleagues and I collected the Early East Cape pottery in the on-going investigation of East Cape (cf.Takahashi *et al.* 2007).

<sup>ix</sup> I already illustrated the scale drawings of Late Amphlett from Museum collections in detail (Negishi 2007).

<sup>x</sup> Although the thermoluminescence date of D2 layer was 1600 BP (*ibid*: 95), I understand that pottery found in layer D and E should be dated much earlier than 1600 BP, comparing with RSP found in the other site (Allen 1972). RSP should be subdivided into some phases, but it is not subject of this paper. Anyway, the period term “RSP” means that the later phase of whole Papuan RSP in this essay.

<sup>xi</sup> This point is opposite from Rainu sequence in which one design element had been affected to whole stylistic change (II.1.3.).

<sup>xii</sup> If this idea is adopted, the emergence of RPA will be interpreted as imitation of Appliqué-decorated tradition. We have little information about prehistoric pottery culture on that tradition except for Rainu style. Because wavy relief technique is actually used on early phase of Early Rainu (II.1.2.), I positively evaluate a probable relationship between Early Mayli and Early Rainu (III.3).

<sup>xiii</sup> According to this chronological plan, here comes out a possibility that unknown Rainu’s ancestral pottery which might be parallel to early RSP found in south coast of mainland (Bulmer 1978;1999).

<sup>xiv</sup> Fig.20 is formed referring to some reports (Tindale and Bartlett 1937; May and Tuckson *ibid*; Lauer 1974; Egolff 1979) and oral records obtained during my own research. Similar native classifications are known in Tubetube islands (Fig.1: 5), Brooker island (9), and Silosilo bay.

<sup>xv</sup> It is just a cognitive model of one typical potter living in East Cape area. The comparable studies of various potters’ recognitions will be published as an official report, so Fig.22 is just of preliminary model in this study. And of course, the detailed data about its manufacture is also omitted in this section. Incidentally, its outline was already reported (May and Tuckson *ibid*; Takahashi *et al. ibid*).

<sup>xvi</sup> “Imitation” in this context does not mean the whole copy of pottery-making techniques. In East Cape,

pottery shape is the main element to be imitated. For example, especially as with Appliqué-decorated tradition, it appears to be difficult for East Cape potters to copy its building technique (Tab.1) because it is completely different from the local one.

<sup>xvii</sup> Wari (e) and Mailu wares have been popular in the Massim for the last hundred years at least. For instance, Lauer (1970; 1971) recorded in Trobriand islands that some potteries were exported from Wari (e) and Tubetube island. And even now in East Cape, *Gulewa* from Wari (e) is the most popular clay pot.

<sup>xviii</sup> ‘Wogo’ is a prefix which means “to make, build, in Milne Bay dialect” (Williams 1962). In our survey of East Cape, “ogo” and “ogu” are collected as variations of this prefix.

<sup>xix</sup> Bickler (1998: 184) pointed out the similar native classifications of exported pottery in Woodlark Island. For instance, he showed that *kunadob* (pottery from dobu island), *kunmasim* (pottery from Misima island) and *kunwari* (pottery from Wari island). Of course, level 1 should be related to trading network with other areas. We can estimate these structures (level 1-4) not only in the southern Massim, but also in other regions in Melanesia.

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## 櫛描文と貼付文

### 東部パプア・ニューギニア，過去 1000 年間における 土器製作伝統の型式学的研究

根 岸 洋

#### 日本語要旨

本論文は、過去 1000 年間に東部パプア・ニューギニアにおいて展開した、二つの土器製作伝統の系統の変遷を考古学的に検討するものである。まず本地域における学史の検討を行なった第 1 章では、①浅鉢に特化した現代の地域的特徴がいつどのように広がったのかを考察する、②交易モデルに依拠しない土器編年を再構築する、の 2 つを具体的目的として示す。第 2 章では 4 遺跡（群）を対象に型式学的検討を行い、それぞれにおける土器編年案を提示する。第 3 章では 3 つの考古学的段階（ホライズン）からなる広域編年案を提示し、地域的特徴の出現について考察する。本地域で現在行なっている民族考古学的研究の成果である、土器製作者が持つ「模倣」技術を手がかりにすると、一つの段階が土器の変容する画期になっていると結論づけられる。この解釈案について、これまで放射性炭素年代に大きく依拠して主張されていたクラ交易の開始年代と、土器文化自身が変容するタイミングとが果たして一致するかどうか、将来的な検討を要することを明らかにする。