

Revisiting Red Slip: the Laloki style pottery of Southern Papua and its possible relationship to Lapita

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For at least 25 years it has been agreed by archaeologists working in Southern Papua that the “Red Slip” or “Early Period” pottery was probably related to Lapita (Bulmer 1969:22, 1971a: 56, Allen 1972:123, Vanderwal 1973:223-4, Egloff 1979:113, Irwin 1991:503). Its bright red slip, lime-infilling and dentate-impressed decoration, its complex motifs and carinated vessels, are thought to be similar to Lapita pottery. Many of the sherds could be slipped into a Lapita assemblage and not be noticed, and the pedestal vessel from Northern Papua (Egloff 1979:69), a form otherwise only found in Lapita sites in the Papua New Guinea area, probably indicates that Lapita sites will be found nearby. Vanderwal was quite certain of this connection; “In view of the evidence presented in this work [his thesis], however, there can be little room for doubt that the Oposisi culture is another transformation of the Pacific Lapita” (Vanderwal 1973:234). The following paper addresses an historical enigma; after a quarter of a century this relationship is still virtually ignored. Whereas Lapita pottery and its offspring elsewhere have been the subject of massive research, there is still a “Lapita pottery fence” across the sea south of New Britain (Gorecki 1992:29).

The “Red Slip” or “Early Period” pottery was made and used from about 2,000 B.P. to 1,000 B.P. at a series of settlements along about 500 km of the coast of Southern Papua (Fig. 1), from Yule Island in the west to the tip of Papua in the east (Bickler 1991, Irwin 1991:503). It has been argued that this pottery reflects the immigration to these shores of a single pottery-making people, so identical is the pottery from site to site and so similar the settlements and material culture that accompanied it. This pottery is also found on sites up to 300 km to the west of Yule Island, a result of trade to the Gulf of Papua (Fig. 1) (Bickler 1991, and this volume), and for another 300 km further east in the islands of Southeast Papua, thought to reflect a similar pattern of trade (Irwin 1991).

As well as appearing at the same time at a series of sites along the Southern Papuan coast, this pottery style continued to develop as a coherent regional style, with parallel style changes, until about 1,000 B.P., when the pottery style diverged into two contrasting styles.

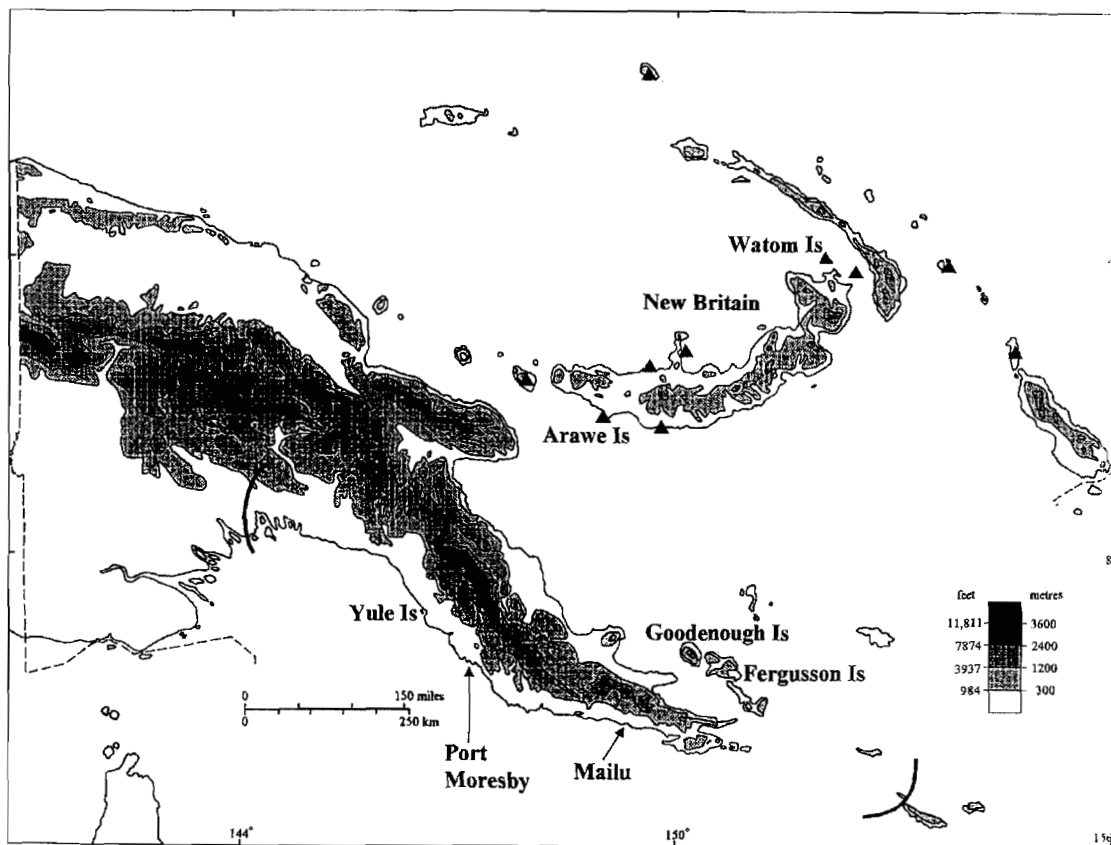


Figure 1
Map of Papua New Guinea, showing localities mentioned in text and the extent of trade in Laloki style pottery (solid lines). Triangles indicate locations of Lapita sites.

This paper focusses on the earliest pottery at these newly settled sites, exploring the similarity and difference of style evident in the stratified assemblages, and the possible historical implications of these patterns. Comparable evidence will be sought for the

Lapita pottery style, in order to establish how the two styles are similar and different, with the purpose of considering whether it is possible or likely that the Southern Papuan pottery style derived directly or indirectly from Lapita. Pottery contemporary with Lapita in the islands of Southeast Asia will also be discussed, with a view to considering whether it is more likely that the Southern Papuan potters came from the west, rather than from the Lapita territory in the Bismarck Archipelago to the north.

In my original Vila conference paper I also considered evidence of the “cultural complex” associated with Southern Papuan pottery sites and Lapita sites. This has not been pursued in the present paper, as there is insufficient data to make such comparisons useful for the present. This situation will change when the detailed excavation reports from sites in the Mussau Islands (Kirch 1995), on Watom Island (Green, in prep.) and in the Arawe Islands (Summerhayes, in prep.) become available.

■ Renaming Red Slip

As the person who is probably most responsible for the inaccurate label “Red Slip” (not all of this pottery was slipped and much of it is too corroded to tell anyway), I propose that this pottery style be renamed “Laloki” after the district in which it was first defined and studied. The Laloki River runs from the coast across the plains north of Port Moresby to the foothills and is the focus of the settlements at Nebira, Eriama, and another unexcavated early pottery site at Little Mt Lawes. I agree with Roger Green (1990:33) that technological labels for pottery styles should be avoided. Also, I think that the label “Early Period”, used by Irwin, Bickler and others, is not satisfactory; it locks the style into a regional time-frame that may not turn out to be true. It precludes the possibility that there may be even earlier pottery found in Southern Papua (as is suggested in this paper), and it encourages awkward and ambiguous terminology, such as recent references to “Late Early” and “Early Middle”.

■ Background

Although the connection with Lapita has long been suggested, so far no evidence of Lapita pottery as such has been found on the islands or mainland of Southeastern Papua or in sites in Southern Papua. This statement depends, of course, on the definition of

Lapita pottery, which varies a great deal in publications and use. Most authors consider the presence of dentate-stamped decoration as the most critical attribute, but the definition is complicated by many issues. It is not apparently accepted that the Southern Papuan pottery is Lapita, and the only sherds so far accepted as such on mainland Papua New Guinea are three sherds from the West Sepik area (Terrell 1996:60). On the other hand, some kind of Lapita contact with Southeastern Papua is implied in the presence of Fergusson Island obsidian, dated to 1100 BC, in the Reef /Santa Cruz Islands (Green 1976, Green and Bird 1989). A substantial amount of site survey has been carried out in Southeast Papua (Egloff 1979, Lauer 1974, Irwin, pers. comm. 1996), the most likely area where the connection would be found, but no sites with Lapita pottery have been located. However, I do not believe that negative evidence should be considered to be significant at this stage, given the very large number of islands in Southeastern Papua. Also, the recent evidence for substantial and complex geomorphic change that has occurred in the past few thousand years (Swadling and Hope 1992, Enright and Gosden 1992) means that discovery of early coastlines and settlement depends on detailed multi-disciplinary study of particular landscapes.

Comparisons so far between Laloki and Lapita pottery have been limited; a general discussion was presented by Vanderwal (1973:232-4), and Laloki and Lapita design elements were compared (Bulmer 1978:370-1, Fig. 9.7). Vanderwal commented that there was no obvious similarity between the Yule Island Oposisi and Lapita pot forms, although in retrospect this impression was due to a lack of available evidence about Lapita vessel form. On the other hand, Vanderwal recognised considerable similarity in the motifs used in decoration. The design element comparison in 1978 used the study of Lapita assemblages from the Reef/Santa Cruz Islands and Fiji (Donovan 1973, Mead et al. 1975), that being what was available at the time. This supported Vanderwal's suggestion of similarity, showing that of 37 Laloki design elements at Port Moresby, 51% were also present in Lapita pottery, and of 30 Laloki design elements at Yule Island, 40% were found in Lapita.

Since these early studies, much research has been carried out in the Bismarck Archipelago, including the investigation of Lapita sites in Southwest New Britain, only about 500 km from the tip of Papua (Gosden *et al.* 1991, Specht 1991, Summerhayes, in prep.) (see Fig. 1), as well as elsewhere in the Bismarck Archipelago (Green 1992). Much of this work is only known through preliminary reports, and the only detailed analysis of Lapita pottery available at present is from Watom Island at the northeastern end of the island (Specht 1968, Anson 1983, 1986, Green and Anson 1987, 1991, Anson, in prep). This material is particularly interesting in providing evidence of Lapita pottery of the same general period as the Early Laloki style pottery, analysed in this paper, i.e. about 2,000 B.P. (Green and Anson 1989). There has also been a great deal of research in recent years about Lapita pottery in areas outside the Bismarck Archipelago (Green 1990).

No interest in a possible Southern Papuan connection has been shown by the archaeologists who have investigated Lapita pottery sites in the Bismarck Archipelago, other than to suggest, on linguistic evidence, that the Southeastern Papuan region was settled by Lapita migrants from the Bismarck Archipelago (Green 1992, Spriggs 1995). This argument is based on the hypothesis that the Lapita sites in the Bismarck Archipelago reflect occupation by speakers of Proto-Oceanic, the ancestral language of all of the Oceanic languages of Melanesia, Polynesia and parts of Micronesia (Pawley and Ross 1995:57-8). While the linguists suggest it was probably spoken in the Bismarck Archipelago, there is also a possibility that the Proto-Oceanic speakers instead lived somewhere on the northern coast of New Guinea (Pawley and Ross 1995) (Fig. 1). As a newcomer to Lapita research, I find it difficult to accept on present evidence that Lapita reflects Proto-Oceanic. Chowning (1996:58) cautions that “it is impossible to assume that the speakers of OC [Oceanic] languages of West New Britain are simply the direct descendants of the first settlers of the regions they now occupy”. The equation of modern language distribution and early archaeological evidence is suspect, to say the least.

Historical linguistic models will be discussed further in the concluding section because I think they can usefully supplement archaeological models and are archaeologically testable. This paper is about archaeology, I but agree with the argument that prehistory is best studied by workers in all three key fields, linguistics, archaeology, and ethnography. However, it is important for each discipline to carry out its own studies first, only then relating its evidence to the findings of the other disciplines.

■ Theoretical issues: similarity and relationship

While the subject of this paper is substantive - it addresses the empirical evidence and evaluates it as such - the purpose is not just to understand the pottery, but to use it as a reflection of human history, to attempt to answer a specific historical question. Are the Southern Papuan pottery-makers immigrants from Lapita pottery-making settlements? How can pottery similarity and difference be measured, what is its significance, and how and why can similarity and divergence be used to indicate historical relationship? What is the significance of the available evidence, particularly from small and “mixed” assemblages from living sites.

To pursue the aim of answering historical questions, the particular pottery style of historically related pottery making communities will be analysed. Pottery style analysis in archaeological studies is a complex field with a long history (Van der Leeuw and

Pritchard 1984, Leonard and Jones 1989). Although there is no agreed definition of style among archaeologists (Conkey 1989:120-1), and there is no coherent theory of style (Rice 1991:302), it generally refers to similarity of distinctive, non-functional, attributes that serve to contrast equivalent cultural units with each other.

In this paper, pottery style will be used in a specific ethnographic sense (Bulmer 1971b), based on the very rich ethnographic, historic and archaeological evidence of pottery made at hundreds of communities around the coasts and in the river valleys in Papua New Guinea. This is perhaps the most complex place on earth, ceramically speaking, and it was argued that there were 18 style provinces, geographical areas within which pottery was manufactured in distinct regional styles. These provinces each had one or more industry (community or series of communities), each of which made pottery in a common sub-style. Pottery moved outside the district in which it was made, as some industries engaged extensively in trade. In other provinces people made pots primarily for their own use, and pots did not normally move further than one or two communities away. Archaeological studies have documented the development of a number of these regional styles, showing that most originated during the last 2,000 years, and have evolved through a series of style changes. Some have subdivided into different styles, but others have gone out of existence.

The regional styles of pottery in Southern and Southeastern Papua have possibly the most detailed ethnographic and archaeological record of any part of Papua New Guinea. There are, in recent times, three distinct industries, reflecting three different provinces: the Motu pottery of the Port Moresby area (Groves 1960, Bulmer 1978:55-61, Arafin 1990); Lauer's (1974) investigation of the pottery of the D'Entrecasteaux Islands; and Irwin's (1985) investigations at Mailu. Lauer's study is particularly useful in the following analysis in that he demonstrated that pottery making communities within the same style province have acknowledged amongst them differences in decorative style and vessel form that distinguish the products of different communities. These industries clearly illustrate the complexity of pottery style patterns in Papua New Guinea, as does their history of evolution, and caution against simple interpretations of archaeological evidence.

The ethnographic studies give a clear framework for understanding why there is similarity and diversity in pottery style in this particular cultural and geographical context. I do not agree that "style" is a "black box", the works of which are unable to be observed (Conkey 1989:120-1), and which prevents a direct connection between the data and the interpretation. Similarity and diversity can be established, not simply by quantifying frequency and correlation of attributes, but also by the interpretation of their significance, based on interpretation of the evidence itself and on directly relevant ethnographic analogy. The ethnographic model also clearly indicates the need to develop a more complex theory of ceramic change. In Papua New Guinea a variety of kinds of change have been recorded, not only the specific trend toward specialisation (Rice 1991) that has engrossed many of our colleagues; this is but one component of the broader, much more complex evolutionary picture.

Methods

Pottery is complex, with a wide variety of attributes that can be studied, and archaeologists validly address it in many ways and for a variety of purposes, and the attributes and methods used vary accordingly. The purposes of this study are 1) to describe similarity and diversity different pottery making communities with a shared pottery style, 2) to interpret the significance of similarity and diversity, and 3) to interpret the relationship between the variety of kinds of similarity and diversity of style.

The four Southern Papuan archaeological studies that provide the data discussed in this paper (Allen 1972, Vanderwal 1973, Bulmer 1978, and Irwin 1985) varied considerably in their methods and purposes, and this means that a full range of comparative data is not readily available. I here report what is available in published reports and theses, particularly using photographs and line drawings to identify the presence of attributes, even where I have not been able to learn their frequency. This is an attempt to carry the analysis of the original authors one step further, and it is possible that they may disagree with my analysis. Better data could be obtained through a restudy of the pottery assemblages, with the new research questions and different methods. On the other hand, it may be possible to judge that sufficient evidence has been found to answer the questions asked. I believe that it has been a useful exercise to focus on presence of attributes, particularly in the context of small assemblages with apparent sampling error, making their absence not necessarily significant.

While some archaeologists prefer technological data to stylistic analysis, the different methods tend to answer different questions, although they are of course dealing with the same material objects and therefore can overlap. Much of the technical study of Southern Papuan pottery has been concerned with establishing the presence of pottery trade (Bickler 1991). However, archaeological evidence established that pottery was made at the three centres, Yule Island, Port Moresby and Mailu, on the basis of “wasters” at sites, prior to sourcing and temper studies. Although some movement of pots between nearby communities is to be expected, on the basis of ethnographic models of gift and presentation, trade as such only occurred outside the pot-making region, and only after the Early Laloki stage of the pottery style.

This study discusses similarity and difference in pottery style empirically, rather than intuitively or impressionistically. I am of the opinion that there is a middle ground between intuition and the statistical study of large assemblages of sherds. This is important if the historical information in archaeological sites lacking in large assemblages is not to be lost. The presence and absence of attributes of other, discontinuous, attributes may be of considerable interest. In documenting pottery decoration empirically, the units of analysis are not only the stratified archaeological assemblages, but the pots themselves,

insofar as they can be reconstructed. Here I differ with the opinion that it is "...vessel designs, not sherds that should guide the search ..." (Rice 1991:257), or that sherds are arbitrary divisions of analysis (Arnold 1985:5). Instead, it is argued that the individual sherd reflects an individual pot, as only rarely in the sites discussed in this paper have sherds been able to be rejoined. The analysis then considers the full range of pots and their decoration that is present on a particular site, to explicitly move beyond intuition and assertion. While it is assumed that the categories used are problematic (Cowgill 1989), the attempt to be explicit in their description and analysis, and informed communication between co-workers, should reduce this difficulty in the long run.

The following discussion looks at four kinds attributes that reflect style, categories that build on the data and analysis in previous studies, including those of Lapita pottery (Green 1990):

- techniques of decoration,
- vessel form,
- design elements and motifs, and
- patterns of decoration.

■ The sites with Early Laloki pottery

Laloki style pottery has been found at a large number of sites, but only those that contain deposits dated to about 2,000 B.P. or having sherds of the Early Laloki style of pottery are discussed in this paper. The evidence discussed in this paper comes from the earliest deposits in seven excavated sites and a surface collection. These are:

- Oposisi (Zone IIC) (Vanderwal 1973) at Yule Island,
- Eriama (Layers D-G) (Bulmer 1978) near Port Moresby,
- Nebira Site ACL (Horizon 3) (Allen 1972), and Nebira Site ACI, a surface collection (Bulmer 1978) near Port Moresby,
- Taurama (Layer IIB) (Bulmer 1978), also near Port Moresby,
- Mailu Island Sites 01 (Layer G) and 03 (Layer E),
- Selai (Layer D) (Irwin 1985) on the nearby mainland.

Another site of equivalent age near Yule Island, Apere Venuna, important in providing artefacts, is not discussed here as the pottery was too eroded by the sea to be able to be analysed (Vanderwal 1973:55). Other sites excavated in the Port Moresby area with

Laloki style pottery, at Boera (Swadling 1980) and Loloata (Sullivan and Sassoon 1987), did not produce pottery or dates of the Early Laloki. 2,000 B.P. period. Surface collections from Hood Point (Johnston 1971) also did not contain Early Laloki style sherds. Site survey at Cape Rodney and other coastal sites east of Mailu (Bickler 1991:33-4) have found Laloki style sherds, but no Early Laloki sites have been reported so far.

The sites of the Early Laloki pottery have reasonably consistent dates in their stratigraphically earliest layers, indicating occupation by about 2,000 B.P., although Vanderwal suggested the Zone IIC may have begun 100-200 years earlier and ended by about 2,000 B.P. (Vanderwal 1973:48-9). The Oposisi Horizon IIC has three dates, 1890 ± 305 B.P. for the deepest deposits, and 1530 ± 160 B.P. and 1600 ± 210 B.P. for higher deposits in the same Horizon. A date of 1910 ± 230 B.P. from the deepest deposits in a crevice at Eriama rockshelter, is not directly associated with pottery (Bulmer 1978:212), but this probably relates to the Early Laloki pottery that is present in the deepest four layers elsewhere in the site. Horizon 3 at Nebira Site ACL was not dated, but it was stratigraphically below the base of Horizon 2, which was dated to 1760 B.P. ± 90 (Allen 1972:99). Mailu Site 01 has a 1900 ± 70 B.P. date for the top of the deepest layer associated with Early Laloki pottery, and the initial occupation of Selai, also associated with Early Laloki pottery, was some time before a date of 1770 ± 70 B.P. (Irwin 1985:87, 99).

■ The Early Laloki style of pottery

As discussed earlier, the analysis of Early Laloki pottery from 8 sites in three areas of Southern Papua will be based on four kinds of evidence of style, i.e. non-functional attributes; vessel form, techniques of decoration, design elements and motifs, and patterns of decoration.

Vessel form

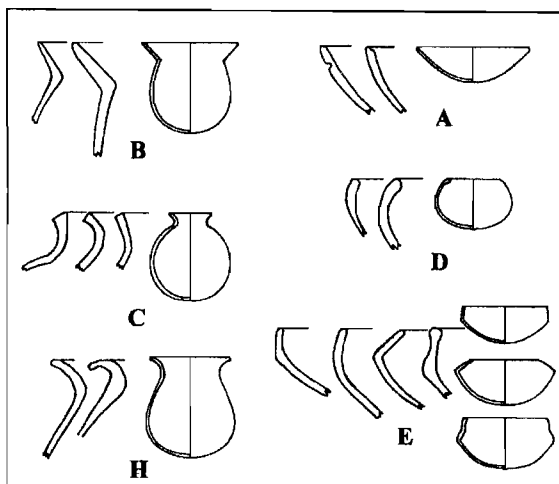
The Early Laloki vessel forms have been best described for the relatively large Zone IIC assemblage from the Oposisi site on Yule Island. The classification was based on rim and lip form, and further refined with a view to decoration style.

Table 1 presents the frequencies of the various vessel forms in Zone IIC (based on Vanderwal 1973:Table VI-7). This includes 615 sherds, 266 of which are rims sherds

Vessel Form	Description	Frequency
A	Open dish	250
B	Globular cooking pot wide flat everted rim	304
C	Globular water pot	25
D	Incurved direct bowl	4
E	Shouldered bowl	9
H	Globular cooking pot rounded everted rim	20
TOTAL		612

Table 1
Frequency of vessel forms in Oposisi Zone IIC
(after Vanderwal 1973:Table V-7).

Figure 2
Early Laloki vessel
forms (after
Vanderwal 1973).



from bowls and dishes (Vessel forms A, D and E), and 349 from sherds of globular pots with everted rims (forms B, C, and H). Nearly all of the Zone IIC pottery on Yule Island was of two kinds of vessel, globular everted-rimmed cooking pots and open dishes with a groove below the rim. The vessel shapes reconstructed in Fig. 2 are speculative, as the sherds in the assemblages were not large enough to indicate their general shape, but are based on ethnographically known vessel shapes associated with similar rim shapes in

the Southern and Southeastern Papuan area, and the evidence from the excavated assemblage that all of the pots had rounded bases.

Vanderwal concluded that there were only three vessel forms associated with Zone IIC, A, B, and C (Fig. 2), but his figures indicate three other kinds of vessel were present, although less common (Table 1) (Vanderwal 1973:100, Figure VI-3, Figures VI-6 and VI-7). Vanderwal's (1973:97) suggestion that the overlap in stratigraphic distribution of pots types may be attributable to "...artefact migration or excavation error", is, I think, unduly cautious. Elsewhere he argued that at the Oposisi site the Zone IIC deposits were sealed in by a distinct weathered layer of fine soil and crushed shell (Vanderwal 1973:33), probably reflecting a period of time when the site was unoccupied (Vanderwal 1973:235-6), a discontinuity between Zone IIC and IIB. It seems to me plausible to accept that the earliest potters of Oposisi had a more complex pottery assemblage than was suggested, with some kinds of pot only rarely made, and also the occasional "foreign" pot coming from elsewhere, by gift or trade. The Motu potters, for example, had ten named varieties of pot, although they mainly made and used only three kinds in the historic period (Bulmer 1978:58).

In my reading of the evidence at Oposisi, there are three kinds of globular pots attributable to Early Laloki, B, C, and H, each of which has contrasting rim and lip shapes. B has a wide flat everted rim, with a rounded lip, and a wide orifice, while C has a narrower rim that is curved in profile, with a squared lip, and has a narrower orifice. The third kind of globular pot present in Zone IIC (Vanderwal 1973: Figure VI-7), that Vanderwal did not include in his Zone IIC analysis, is vessel type H. This is a globular pot with wide orifice, but contrasts with Type B in having a curved rim, although a similar rounded lip. I suggest the Type H is a valid component of Early Laloki for two reasons; it seems unlikely that 20 sherds would be intrusive to this zone. Also similar pots have been found in Early Laloki context in Port Moresby and Mailu.

The open dish, A, was nearly as common as the cooking pots, contrasting in this with the other regions, where a large proportion of bowls was also present with the Early Laloki pottery. Two other kinds of bowl, D, a slightly incurved bowl with direct rim, and E, a category that includes both bowls with direct rims and shouldered and carinated rims, are also present in Zone IIC, but are less common (Vanderwal 1973: Table VI-7). These are also present in the Early Laloki assemblages Port Moresby (Allen 1972, Bulmer 1978). Therefore, I would argue that the D and E forms should be validly included in the Zone IIC pottery assemblage. A single sherd each of three additional bowl forms, M, N and P, are present in Zone IIC, and these are not discussed further, although they may validly be part of the Early Laloki assemblage in the other regions.

Based on ethnographic parallels (Bulmer 1971b, 1978, May and Tuckson 1982), and as suggested by Vanderwal (1973), the globular pots, types B and H, with wide orifices and everted rims are likely to have been cooking vessels, and the narrow mouthed pot © was probably used for water storage. The bowls and dishes (A, D, E, and possibly M,

N, and P) would have been used for serving food and as containers for liquids and other materials.

Nebira Site ACL, Horizon 3, was considered to be equivalent to Oposisi Zones IIC and IIB (Allen 1972:109), but there was no clear stratigraphic break to mark a change in occupation coinciding with style change, such as was found at Oposisi. Horizon 3 contained only a small assemblage of pottery, including five globular pot rims (four cooking pots and one water pot), and 40 rims of dishes and bowls. Given the small assemblage, and the fact that the site was a midden dump, the rarity of globular pots is probably due to sampling error. Site ACL globular pots were not reported according to stratigraphic position, but there were no examples similar to the B and C forms, although there were rims similar to type H present (Allen 1972:105, Fig. 7). Examples of open dishes comparable to type A were present, but none had a rim groove comparable to the Oposisi dishes. Only one rim illustrated, a vessel with a shouldered profile, had a rim groove (Allen 1972:Fig. 5-48). Other kinds of bowls and dishes were also present in Horizon 3, although they were reported according to decoration, not vessel form.

In the other Port Moresby assemblages, at Eriama, Nebira Site ACI, and Taurama, there are examples similar to the six Early Laloki types defined above as associated with the Oposisi Zone IIC assemblage, but the assemblages are too small to offer reliable evidence of relative occurrence. The Eriama Layer D-G assemblage includes 35 globular pot rim sherds, and five bowl rims, and no open dishes. As this site is a rock shelter in the vicinity of an extensive village, the predominance of globular pots is probably due to the shelter having functioned as a cooking site. The three Early Laloki globular vessel forms are present in this assemblage, with both type B and type H cooking pots in all four layers, and a few examples of type C water pot are also present. All five bowls have vertical or slightly incurved direct rims, i.e. similar to Oposisi types D or E. The Taurama Layer IIB assemblage includes 12 bowl and dish rims and 11 globular pot rims. Six of the globular pots are similar to Oposisi type H, and the rest are thick rimmed pot rims characteristic of later stages in the Oposisi sequence. This site had a large number of post holes in all layers, and related disturbance to the deposits, so the presence of later vessel forms should not be taken to indicate a later date for the layer. The layer is also identified with the Early Laloki on the basis of the presence of two dentate impressed bowls. Eight examples of open dishes are present, the other four bowls having verticle or slightly incurved direct rims.

The Early Laloki style phase was not separated in the analysis of the Mailu Laloki style (Early Period) pottery sequence. This showed a continuous style sequence from 1900 B.P. to about 1100 B.P., based on a variety of similarity analyses applied to assemblages of more than 100 sherds. There were three "Early Period" vessel forms (Irwin 1985:169), and illustrated rims show these were similar to Early Laloki vessels: an open mouthed pot (1-13 16); an open dish (1-13-18); and bowls with direct rims (3-13-16,17, 17b, 18). There are also shouldered and carinated bowls apparent in the rim form attri-

butes (Irwin 1985:Fig. 42). The open mouthed pot rims illustrated include one with a wide flat rim similar to type B. There are no rims illustrated that resemble type C.

Techniques of decoration

The most comprehensive analysis of techniques of decoration on Early Laloki pottery relates to the Port Moresby sites (Allen 1972, Bulmer 1978). Therefore, the discussion will begin with the evidence from the Port Moresby sites - Eriama, Nebira and Taurama - and then where it is possible, comparable evidence for the Yule Island and Mailu pottery will also be discussed. A similar range of techniques is also evident in the Oposisi Zone IIC assemblage, but only three techniques were used in Vanderwal's analysis (1973:79-80), etching, incising and impressing, and only the latter was attributed to Zone IIC. Similarly, the analysis of the Mailu assemblages used only certain decoration attributes, although the preliminary descriptive account (Irwin 1985:108-10) indicates the presence of most of the techniques that are present in the other areas. As with the pottery vessel forms, it was not possible to separate the Early Laloki component from the Mailu Early Period sequence, except where the techniques are visible in illustrations.

The Early Laloki pottery from Port Moresby has the following techniques of decoration; slipping, burnishing, incising, shell edge impressing (both straight and curved), impression of the backs of shells, impressing of the end of straight and curved multiple-toothed tools, i.e. "dentate stamping", end impressing of single- and double-pointed tools, painting, grooving, and lime infilling.

Previous descriptions of Port Moresby pottery include references to shiny black pottery (Allen 1972:99, Bulmer 1978:367), thought to indicate oxygen reduction or "smudging" during firing (Shepard 1968:219-22). On review of the evidence, it appears that the black pottery does not constitute a separate decorative type. The Early Laloki style pottery in the available assemblages includes a range of red and black colouration, with some entirely red and some entirely black and, mostly, a mottling of both colours. As the black sherds do not otherwise appear to be distinct, it is suggested here that black pottery is not a separate decorative type. Irwin (1996, pers.comm.) reports a similar situation and range of colouration of Early Period sherds at the Mailu sites.

Slipping

Slipping is the application of a coat of liquid clay to a pot to improve surface colour and texture (Shepard 1968:191-3). Slipping was common in Port Moresby, but not univer-

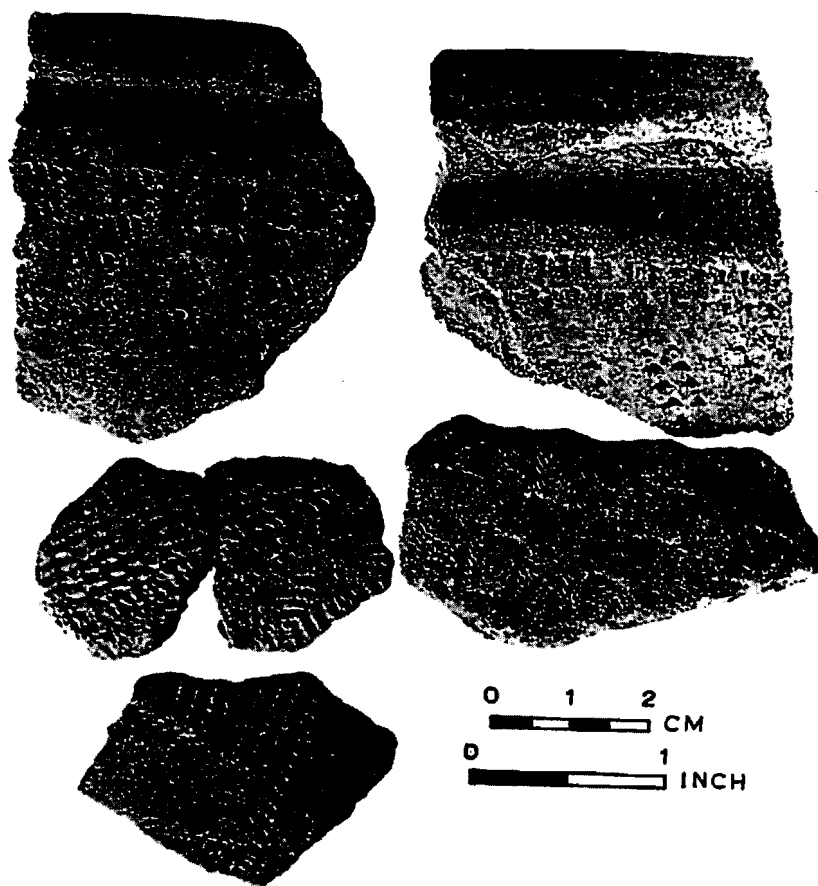


Figure 3
Dentate- and shell-impressed pottery from Zone IIC, Oposisi, Yule Island
(Vanderwal 1973:Fig. VI - 6).

sal, on Laloki style pottery, and its occurrence on both globular pots and bowls and dishes was systematically recorded as a part of the pottery analysis. There were distinct varieties of slip, and slip was also used as a paint, in bands and designs. Irwin (1985:108-9) reported that slipping was common in the “Early Period” Mailu pottery, but did not include it as a decorative attribute in his analysis because the sherds in the assemblages excavated were heavily weathered, making it difficult or impossible to establish the presence of slipping. Slipping was not analysed as such by Vanderwal (1973:79) for the Yule Island pottery, but the Zone IIC pottery at Yule Island was often

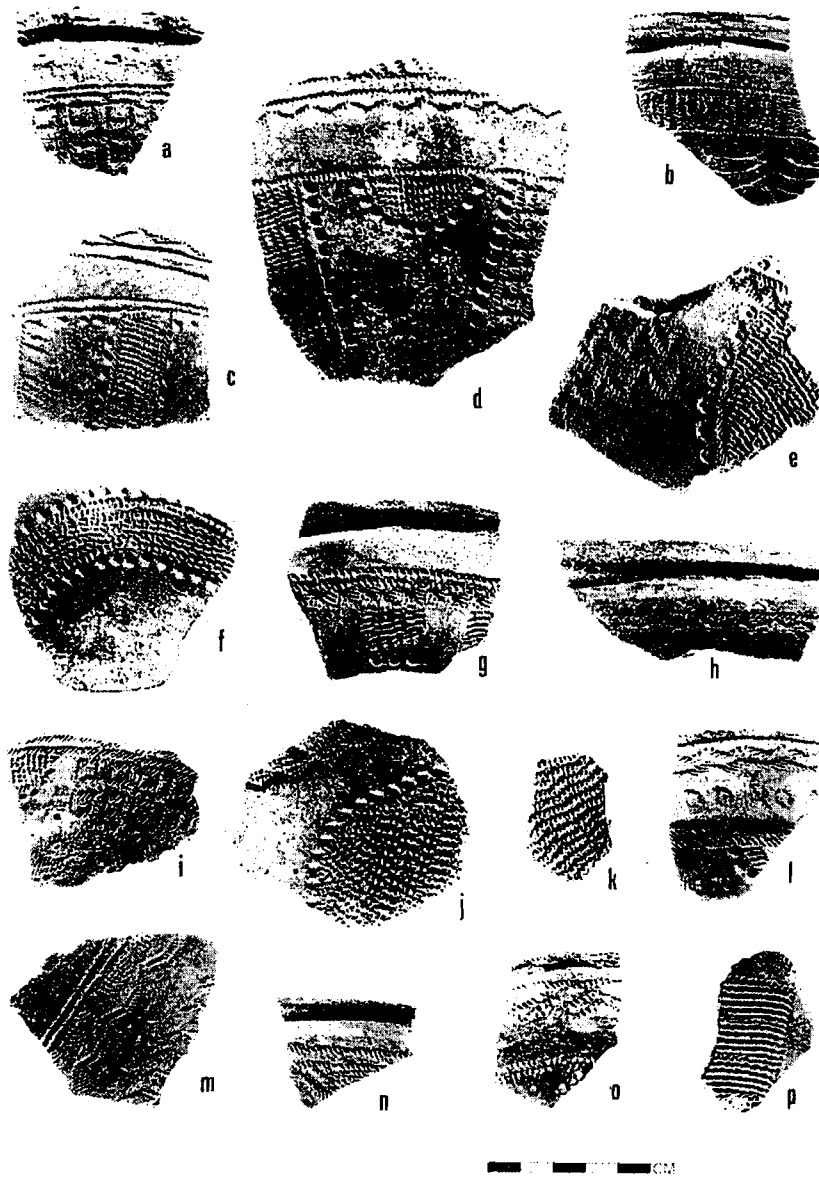


Figure 4
Dentate-impressed bowls from Nebira Site ACI (Bulmer 1978:Plate 1).



Figure 5
Mailu shell-impressed pottery, Early Period (Irwin 1985:Plate 1).

red-slipped, and it was reported (Vanderwal 1973:100) that slipping did not occur in more recent layers. As with the Port Moresby pottery, the boundary between painting and slipping is not clear; the Zone IIC pottery seems to have slip used as painting, and I am unclear whether there is any painting with another paint medium. The cooking pot (B) was often painted inside its rim, and the waterpot © was painted on both interior and exterior of the rim, and typically had a band of paint around the pot, above its shoulder (maximum width).

Burnishing was common in the Port Moresby Early Laloki pottery, with evidence for use of both sticks and polished stones for this kind of finishing. Allen (1972:105, 107) found burnishing on sherds in Horizon 3 at Nebira Site ACL applied to dishes with multiple grooving and to shouldered bowls, some of which also have dentate-stamped decoration. Burnishing was also found on sherds at Eriama and Taurama (Bulmer 1978:Fig. 8.27). I have not been able to find any comment on burnishing in the early pottery assemblages at Yule Island or Mailu.

Punctate, dentate and shell impressing

These three techniques are combined here, because they sometimes appear on the same vessels and some design elements are rendered in all three techniques. These techniques of decoration have been subsumed under the term “shell impressing” in some of the archaeological literature about Southern Papua. I believe this is misleading, because the shell impressing is not always the dominant form, but also because the dentate stamping is relevant to possible historic relationships. Decoration by impressing is associated with both the complex motifs and single curvilinear and geometric design elements found on the Early Laloki style bowls and dishes from Yule Island, Port Moresby and Mailu.

Figures 3, 4, and 5 will hopefully persuade readers that the complex motifs of the Early Laloki style bowls and dishes are not done exclusively by shell impressing, but are usually rendered in one or more kind of impressing. Single point (usually triangular in section), comb end and “drag”, shell edge (straight and curved), small shell back, and round hollow end impressing can all be seen. Vanderwal (1973:80, Fig. VI-6) recognised only impressing of the edges and sides of shells in his analysis, but reported that dentate stamping was present (Vanderwal 1973:206-7), and his illustrations indicate other impressing techniques were also there.

Similarly, Allen (1972:105, Fig. 7t) referred only to shell stamping, and round impressions of the umbo of a bivalve. This contrasts with the variety of impressing techniques in assemblages and collections from other Port Moresby sites (Bulmer 1978). Dentate stamping was present on sherds found in excavations at Eriama and Taurama. Shell edge impressing is present on Port Moresby pottery, but is rare. The Nebira Site ACI surface collection includes five sherds from dentate impressed bowls or dishes with rim

grooves. These sherds and others from Port Moresby assemblages have dentate impressing made with the teeth of one or more combs. The comb generally had a straight edge, but sometimes it was curved. The combs had two, three or four points, and some designs were made with a group of combs tied together. There was both impressing with the comb held at right angles to the surface of the vessel and a distinctive impression made by dragging the edge of the comb sideways (Fig. 3). Dentate impressing was present on a minority of Early Laloki sherds at Taurama and Eriama. Dentate impressing was applied rarely to vessels throughout the Laloki sequence in Port Moresby. One sherd from Eriama has a kind of notching on a rim angle, made by impressing the side of a narrow tool. Although globular pots were not decorated with impressing in the Yule Island Zone IIC assemblage, at Eriama 2 globular pots had a line of shell impressed design elements around the rim. However, globular pots were otherwise only decorated with painting and slipping.

Irwin (1985:109) reported shell edge impressing in the "Early Period" Mailu pottery, but an absence of any evidence of the use of roulettes or stamps. Shell impressing on the Mailu bowls, visible in an illustration (Fig. 5) (Irwin 1985:Plate 1), was executed with large straight edged shells, as well as with short sections of wavy edged and gently curved shells.

Dentate-impressed motifs are typical of Oposisi Zone IIC dishes and bowls, particularly the grooved forms, although some grooved bowls were only slipped and/or burnished. This decoration was found on the outer lip of some, above the groove, while on others it was only below the groove, and some appear to have been decorated all over. Some of the grooved bowls were decorated all over, while others only on a band below the rim. The examples of grooved bowls from Port Moresby and Mailu sites had similar positions and extent of decoration. Most of the decoration on bowls at Yule Island and all on Mailu was rendered with the shell impressing of the edge and back of small shells, dentate stamping and the use of a rocker stamp (roulette) were also used on Yule Island sherds (Vanderwal 1973:206-7). No evidence of shell impressing on globular pots has been found in the Yule Island or Mailu reports.

Painting

As discussed above, the boundary between painting and slipping is not easy to establish on small sherds, particularly as slip was commonly used as paint. Painting was common in Early Laloki style pottery in the Port Moresby area. At Nebira Site ACL painting was found on 28% of sherds in Horizon 3 (Allen 1972:107), and it was also present in the early Layers at Eriama and Taurama. At Nebira Site ACL two distinct kinds of painted pottery were reported, one a coarse sandy ware and the other a thin brown ware with bright orange paint. The latter was present also at Eriama, but as far as I know has not

		Early Laloki			All Laloki		
		Yule	PoM	Mailu	Yule	PoM	Mailu
I	1	X	X	X	X	X	X
//	2		X	X		X	X
	3	X	X	X	X	X	X
==	4	X			X	X	
/	5		X		X	X	X
	6		X		X	X	X
	7	X	X	X	X	X	X
	8	X	X	X	X	X	X
	9	X	X	X	X	X	X
	10	X			X		X
—	11	X	X	X	X	X	X
V	12		X		X	X	X
W	13	X	X		X	X	X
V/V	14		X			X	X
....	15		X	X		X	X
ooo	16	X	X	X	X	X	X
(noted) o o o	17		X		X	X	
o@	18	x			X	X	
u	19			x	X	X	X
u c	20		X		X	X	X
TJ	21	X	X		X	X	X
u	22	X	x	x	X	X	x
u	23	X			X	X	
u	24	X	X		X	X	
□	25	x	X		X	X	
□	26		X		x	X	x
□	27		X			X	
rim groove	28	x	X	x	X	X	X
body groove	29		X		X	X	x
body incised	30	X	x		X	x	
	31	X			X		
	32	X			X		
T=	20	25	12	27	29	23	

Table 2
Early Laloki design elements
and their occurrence in later
Laloki pottery.

		Watom	Reef/SC	Early Laloki
(((m	1	X		X
o	2	X	X	X
	3	X	X	X
	4	X		X
	5	X		X
/	6		X	X
^ ^ ^	7	X	X	X
^ ^ ^	8	X		
	9	X		
—	10	X		X
X	11	X		
X	12	X		
W	13	X		X
M	14	X		
^	15		X	
^	16	X	X	
□	17	X	X	X
o	18	X	X	
□	19	X		X
□	20		X	
◇	21		X	
o	22		X	
o	23		X	
X	24		X	
u o u	25	X	X	X
u o u	26		X	X
□	27		X	X
/	28		X	
~	29		X	
~	30		X	
Total		18	19	14

Table 3
Design elements on Watom and other Lapita
and their occurrence in Early Laloki.

been identified in other collections. At Taurama, painting was found only on the Early Laloki globular pots, not on bowls and dishes (Bulmer 1978:Fig. 8.38). Painting is present in the Yule Island pottery (Vanderwal 1973:177, 206), and is also found on the Mailu Early Period pottery, but its presence in the earliest deposits is not discussed (Irwin 1985:110).

Grooving

Two kinds of grooving are present in the Early Laloki assemblages, rim grooving, with a single groove around the outside of the rim of a direct bowl or open dish, and body grooving, where a series of grooves are formed around the outside of a dish or bowl. Although Vanderwal (1973:Fig. V-4) considered grooving to be a kind of surface treatment rather than decoration, it is here considered to be a decorative technique. Grooving is sometimes used by itself, but it is also used in a complementary way, together with other techniques.

The most distinctive vessel of the Early Laloki assemblage is a dish or bowl with rim groove, often in association with dentate or shell impressed decoration all over the outside of the vessel. This decoration includes examples of complex motifs, discussed later below.

One group of five sherds, representing four rim grooved bowls, from Nebira Site ACL, has exclusively dentate impressed decoration (see Fig. 4). Other bowls and dishes in the Early Laloki assemblages at Nebira Site ACL have body grooving encircling the outside of the vessel below a plain rounded rim (Allen 1972:Table 4). This is a major component of Horizon 3 at Site ACL (22.4% of bowls and dishes). A variant of body grooving is the incision of horizontal lines encircling some of the bowls in the Port Moresby sites. At Site ACL, this is a significant component (23.7% of sherds in Horizon 3) (Allen 1972:Table 4), and is not typologically distinct from grooving, but forms a continuous range of variation, from incision to groove.

Vanderwal (1973:Fig. V-4) did not find multiple grooving in the IIC Zone, although it occurred in the following period, Zone IIB. At Mailu, "body-ridging" is reported as rare (Irwin 1985:110) and rim grooving is present in the illustrations but not discussed. The term "ridging" suggests a different kind of treatment than on the Port Moresby pottery, where the surface between the grooves was invariably level with the ungrooved surface, whereas the grooves were deeper.

Lime infilling

Lime infilling was a common decoration in Early Laloki pottery, being applied to both incised and impressed decoration. It is difficult to quantify the extent of use of lime

infilling, as it is physically unstable and liable to weathering when exposed to the elements. Vanderwal (1973: 100) reported it as occurring throughout the Laloki style sequence. Vanderwal (1973:Fig V-4) recorded the presence of lime infilling on 15% of the type A dishes in Zone IIC. Lime infilling is not included in techniques of decoration in the Mailu analysis (Irwin 1985:108-10).

Design elements and motifs

Design elements (called “units” in Bulmer 1978) are minimal units of geometric pattern, such as “circles, arcs, columns and squares” (Vanderwal 1973:207). Design elements are used on Early Laloki style vessels, either in horizontal bands of individual repeated elements, or combinations of elements, or as building blocks in more complex design motifs. Although complex motifs are present at Oposisi, Port Moresby and Mailu in the Early Laloki pottery, none of this material is available to me at present, and the illustrations are not adequate to do a systematic motif analysis. However, they are discussed further in the Patterns of Decoration section below.

The following discussion is based on the study of design elements of the pottery of the Port Moresby area (Bulmer 1978), but is considerably revised. Although my original study dealt with the Laloki style sequence as a whole, here the analysis includes only design elements present in the nominated assemblages. The stratified assemblages at Port Moresby consist of four sherds from Eriama, 12 sherds from Taurama, and 19 sherds from Nebira Site ACL, including three shell impressed body sherds (Allen 1972: Fig. 7).

These are then compared with whatever data are available for the Oposisi and Mailu pottery. Neither Vanderwal (1973) nor Irwin (1985) undertook an exhaustive inventory of elements. Vanderwal used only certain design elements that were considered to be diagnostic, and Irwin (1985) only illustrated the Mailu design elements, and did not use them in his analysis of pottery. The data for the Oposisi and Mailu sites in Table 2 comes from photos and drawings of the “shell impressed” sherd. Vanderwal (1973:80) did not analyse the “impressed” design elements in the IIC Zone in the same way that he presented 36 design elements for the other sub-styles of pottery defined in his analysis. Three of the design elements are recorded in Fig. V-3, and 5 others in Fig. V-5. The Mailu illustrations (Irwin 1985:Fig. 46, Plate 1) show the decoration on ten and 15 sherds respectively, some of which overlap, and Vanderwal (1973: Fig VI-6) illustrated 16 “impressed” dishes.

This has resulted in the 32 Early Laloki design elements (Table 2), and these have been tabulated for their presence in the Early Laloki assemblages in the three areas, Yule Island, Port Moresby, and Mailu, and for the entire Laloki style sequence as well. Of the 32 design elements identified in the Early Laloki assemblages, only nine (28%) are pre-

sent in all three areas, but this is likely to be due to sampling error because of the small size of the assemblages. In contrast, most of the design elements (56%) are present in all three areas on other Laloki style sherds. However, this evidence does not support the assertion that the design systems in the three areas are identical.

Patterns of decoration

The Early Laloki style of pottery has four general patterns of decoration:

- bands and panels of elaborate motifs with impressed decoration on dishes and bowls, all over the outside of the vessel,
- horizontal bands of design elements, single elements or a combination of elements repeated around the outside of the vessel, below the direct rim, or above an angle formed by composite shaped dishes and bowls,
- lines of a single design element around the top of the everted rim of globular pots,
- bold freehand painted designs on the tops of everted rims, round the outside of the necks and on the body of globular shaped pots.

As already mentioned and the illustrations show (Figs. 5-7), much of the dentate/shell-impressed Early Laloki pottery was characterised by complex motifs all over the outside of the vessel. The motifs include geometric panels, with curved and straight lines subdividing wide bands on the outside of the vessel, with the panels either being left open or being filled with a series of single design elements or comb or shell impressing (Irwin 1985:Fig. 46, Plate 1, Vanderwal 1973:VI-6, Allen 1972:Fig. 7, Bulmer 1978:Plate 1, Fig 5.4). Bowls and dishes of Type E were decorated with horizontal bands of design elements, as well as some having all over decoration, at Nebira Site ACI (Fig. 4). Shouldered bowls, Type D, in the Early Laloki style, typically had a horizontal band of motifs, made up of a “zone marker” (Mead *et al.* 1973:24), a rectangular or oval panel, with design elements attached or enclosed within. Some bowls and dishes were also decorated with a horizontal band of grooving, on the outside of the vessel, below the direct rim or a shoulder angle, and sometimes in combination with a decorated band above the shoulder or on the lip.

Slipping and painting were the commonest decoration on globular pots, inside the neck, on the rim and outside, on the neck or body of the pot. Some designs were relatively elaborate, but mostly vertical and horizontal stripes were used, with spots and daubs in-between. Some naturalistic motifs, are found on painted pots, similar to incised motifs.

Lapita pottery

The Lapita pottery style has been the subject of a very large number of papers, both theoretical and substantive. For the purposes of this discussion of the possible relationship with Southern Papua, a brief general review of current thoughts and issues about the pottery style will be attempted, followed by a specific look at the only detailed stratified assemblages so far available from New Britain. Roger Green (1992:15) stated the general position, that Lapita is an “easily recognised dentate stamped pottery” style with a 4,500 km distribution, from the Bismarck Archipelago in the west to Samoa and Tonga in the east. Further, Lapita has a 1500 year sequence of stylistic evolution, generally discussed in three periods: an initial period, from about 3,500 to 3,000 B.P., with complex vessel forms and ornate decoration; a period of dispersal and change, from about 3,000 to 2600 B.P., during which the repertoire of vessel forms was reduced and decoration simplified, with incision replacing dentate stamping; and a third period during which the pottery either lost its decoration, went out of production, or changed into another style of pottery.

In seeking to establish similarity between Lapita and Early Laloki styles, the nearest assemblages described in detail come from the excavations at sites on Watom Island (Specht 1968, Anson 1983a, 1986, and n.d., Green 1990, and in prep., Green and Anson 1987, 1991). These studies include an analysis of surface collections of Lapita pottery, comparing Watom pottery with collections from Ambitle Island, Talasea and Mussau. They show that Lapita pottery is in fact heterogenous and variable (Anson 1983:274), and it was argued that this reflected both a chronological and regional difference amongst the pottery of the different sites. The excavated assemblages from Watom include two layers dated to about 2400 B.P. and 2100 B.P.-1900 B.P. (Green and Anson 1991), a Lapita assemblage of comparable age to Early Laloki. In the following discussion I will first present a summary of the Lapita evidence for each of the topics, and then a comparison with what has already been discussed for Early Laloki.

Vessel forms

The earliest, most complex variant of Lapita pottery, as exemplified in the Mussau Island sites, had a wide range of vessel forms, including pedestals, ring feet, and cylinders, interpreted as stands for dishes and bowls (Kirch 1995:264), as well as a wide range of dishes, bowls and globular pots (Fig. 6) (Green 1990: Fig.1B). Fig. 6 provides a general framework for comparison with the vessels found at the Watom sites (circled) and the Early Laloki style (starred). Unfortunately it is not at this point possible to com-

Figure 6
Western Lapita vessel
forms, showing forms
present at Watom
(circled) and in Early
Laloki (starred)
(Green 1990:Fig. 1B).

DECORATED LAPITA		PLAIN LAPITA
EARLY LAPITA	LATE LAPITA	
1500 BC	1000 BC	1500 BC
600 BC	600 BC	600 BC

pare details of rim and lip form, and these only give general vessel form. However, of particular note is that five of the dish and bowl forms in Early Lapita appear to be similar to Early Laloki forms, and three of these are limited to Early Lapita, only two continuing into Late Lapita. A globular pot with narrow orifice, similar to the water storage pot of Early Laloki, is present in both Early and Late Lapita in both decorated and undecorated forms. Missing are the wide orificed globular cooking pots, although there is one form in the Late undecorated pottery that is considerably wider mouthed than the water vessel forms. A search of Western and Southern Lapita shows that there are more open mouthed globular pots (e.g. Parker 1981, Sande 1992). Ross (1996:77) has also commented on this in connection with his analysis of the pottery terminology of early Oceanic speakers.

This general similarity between Early Laloki and Early Lapita in their assemblages of vessel forms is striking, although Early Lapita is much more complex; there are 23 different vessel forms (Fig. 6), in contrast to the six Early Laloki vessel forms defined in this study. The combination of different rim forms in some Early Laloki categories in Vanderwal's typology, which has been used in this study, may mask a greater overall complexity. The comment above, that units of analysis are conjectural must be kept in mind, but the marked similarity may be significant evidence of historic connection. On the basis of the evidence at hand the separation probably took place before 3,000 B.P.

Techniques of decoration

Undecorated pottery was a component of the Lapita style from the beginning (Green 1990), but this statement is ambiguous, as it was reported (Anson 1986:41-4) that all vessels in the samples analysed were slipped inside and out. Conceivably the predominance of slipping may be due to the deliberate selection of slipped sherds during field collection. As well, the globular pots rims were commonly notched and scalloped, but this was not considered as decoration. Using their definition rather than ours, undecorated pots occurred in Lapita assemblages side by side with decorated, and many of the same forms were both decorated and undecorated. This is similar to Early Laloki, which had a major component of vessels that were only slipped, although there were no examples of the kind of notching and scalloping of rims found in Lapita.

Although Lapita pottery is primarily identified by complex dentate-stamped decoration, Green (1990:33) emphasized that the Lapita design style was produced by a range of techniques. Kirch's (1995:264) assertion that dentate stamping had disappeared by 2500 B.P. may apply to the Mussau sequence, but it conflicts with the evidence from Watom, which is that dentate-stamped decoration is present until about 1900 B.P. Dentate-stamped decoration is uncommon in Lapita assemblages, and only a small proportion of vessels were entirely decorated in this way. Hunt (1989:207) reported that only 1-12% of

pottery at Mussau sites was dentate stamped, while Anson (1986:31) found that less than 1% of sherds were dentate stamped in the Watom collections, 5-10% were stamped in the Talasea collection, and 8-92% were stamped in the Ambitle collection. The only Lapita site where shell impressing has been found is Ambitle Island (Anson 1983b:45). Dentate stamping was rendered with a comb-like tool (Anson 1986:159). Lapita dentate-stamp tools included six variations in size and shape, large and small straight, curved and round tools (Siorat 1990). These were applied repeatedly and in combination to create design elements and motifs closely related to the shape and size of the tools. Similar design elements and motifs were also created by incision and shell impressing. Dentate-stamped decoration was sometimes infilled with lime, presenting a white on red decoration (Anson 1986). Kirch *et al.* (1995:265) have reported that lime infilling was common in Mussau Lapita.

As already mentioned, incising was a component of the earliest Lapita assemblages (Anson 1986), but it is reported that the proportion increased during the Lapita sequence, with incising eventually replacing dentate stamping altogether in some regions.

The comparison of Lapita decoration with Early Laloki techniques is obvious, that is, the common use of slipping, and the variety of dentate stamping, shell impressing, incising, and lime infilling is closely similar, although the characteristic notching and scalloping of pot rims is not present in Early Laloki. The body and rim grooving and painting found in Early Laloki is not present in Lapita.

Design elements and motifs

The aspect of Lapita pottery decoration that has received the most detailed analysis is design and motif, although this has suffered from lack of comparability of different analyses (Sharp 1988, 1991, Green 1990). General discussions tend to emphasize the complexity of the structure of the dentate decoration. The importance of hierarchical treatment of complex motifs is widely acknowledged, but the small size of assemblages of pottery means that the complex motifs are mainly dealt with descriptively. The analysis by Siorat (1990) based on the tools that created them provides an additional level of analysis than design elements discussed in this paper.

The analysis of the dentate-stamped pottery from the Watom excavations focussed on motif, rather than design elements (Anson in prep.), and showed that 31 motifs are present in the two layers, with 142 occurrences. Interestingly, there was relatively little overlap between the motifs in the two layers; only three (19%) of the 16 found in the earlier Layer 2 also occurred in Layer 1. Only five of the motifs were common, with ten or more occurrences, and a large proportion of the motifs had only a single or two occurrences. Complex motifs were present in both layers, but comprised only 25 % of

decoration (35 occurrences). As the content of the motifs was similar, although not identical, in the two layers, the lack of correlation of specific motifs probably reflects sampling error, rather than significant change. Anson (1983:59, 1986) found that the alloforms***??? of triangles set Watom off from the pottery of Ambitle, Talasea and Eloaua (Mussau), suggesting that the variation was regional in nature (Anson 1983:273).

In order to compare the Watom design system with the Early Laloki, the 31 Watom motifs have been reduced to 18 design elements (Table 3). These can then be compared with the Early Laloki design elements, as well as elements from the Reef/Santa Cruz Islands and Fiji (Sharp 1988: Fig. 5.1) (“Other Lapita” in Table 3). The design elements may not be entirely comparable, as I have not been able to study the collections used by Sharp. The comparison shows a substantial overlap in the design elements among these three design systems. Fourteen (44%) of the 32 Early Laloki design elements (presented in Table 2) are comparable to one or other of the Lapita systems. Of those that are similar, 11 (79%, or 34% of all Early Laloki design elements) are similar to Watom elements, and eight (57%, or 25% of all Early Laloki design elements) are similar to elements in the Other Lapita design system. Of the 18 design elements at Watom, seven (39%) are found on the Other Lapita pottery, and 11 (61%) are similar to Early Laloki design elements.

Of the 19 Other Lapita design elements, seven (37%) were present at Watom, and eight (42%) were similar to Early Laloki design elements. However, eight (42%) of the Other Lapita design elements were not present in either Watom or Early Laloki. This may be partly due to sampling error in the small assemblages in the other two areas, but the content of the design elements exclusive to Other Lapita suggests that some of the difference is significant. Particularly the greater complexity of form of zone markers and large curved elements in Other Lapita differs from both Watom and Early Laloki. There are also major differences in large motifs between Watom and Early Laloki, although this cannot be presented in detail at present.

Siorat’s analysis (1990:62-3) divides the complex motifs into linear motifs, curved motifs, and composite motifs. All of these categories occur at Watom, but only the linear type motifs versions seem comparable to Early Laloki motifs, insofar as they are at present known. In general, the Early Laloki complex motifs do not fit comfortably in this classification.

Of particular interest is that the complex motifs are uncommon but present at Watom in both layers. It seems to be significant that Watom pottery, dating to between about 2400 B.P. and 1900 B.P., has the significant but minor element of complex motifs. This seems to conflict with the generalisation about the simplification of Lapita decoration. A complex component of the decoration is still present in about 1900 B.P. This is also similar to the relative proportion of complex motifs present in Early Laloki.

The third and fourth kinds of decoration found in Early Laloki, i.e. a line of design ele-

ments on the rim of globular pots, and freehand painting of globular pots, seem not to be present in Lapita.

Patterns of decoration

The study of Lapita pottery has included the construction of what I consider to be incomprehensible systems of rules of decoration. For the present, the general patterns of decoration can be described.

The pottery from excavations at Watom shows (1) elaborate motifs, comprising about 25 % of decoration (see discussion above), and (2) bands of repeated motifs around the upper outer surfaces of the vessel (Anson in prep.). The motifs were arranged according to “half drop”, inversion, and combinations of elements. These patterns of decoration are compatible with decoration on the Early Laloki pottery, although the free style painting and grooving is not found at Watom.

The decoration of globular pots was simple at Watom, similar to Early Laloki, with only a series of design elements applied to the rim, with the pots otherwise only slipped. Because rim notching was not classified as decoration, it is not clear how common it was in the collections, but the application of a design element to the rim of globular pots was rare but present in the Early Laloki pottery.

■ Other 2,000 B.P. pottery in the Papua New Guinea area

It remains to be said that there are other pottery styles in the Papua New Guinea area dating to about the same time as Watom Lapita and Early Laloki (Gosden *et al.* 1989). The best known is the “incised/applique” style of pottery, considered to be similar to the Mangaasi pottery of Vanuatu. It has been found in a number of sites on New Britain, New Ireland, the Duke of York Islands, and possibly in the Markham valley on the New Guinea mainland (Bulmer 1971b). Although it is a contemporary of Early Lapita, incised/applique appears in the Papua New Guinea area only about 2,000 B.P. It is argued that Lapita evolved into the incised/applique style on some of the sites, whereas on others it is briefly present and then pottery making is abandoned. I think that it remains to be demonstrated that incised/applique was a particular pottery style, rather than reflecting new kinds of decoration adopted by existing pottery industries.

Other styles of pottery were also contemporary with late Lapita and Early Laloki, including pottery in the Sepik and Ramu lowlands (Bulmer 1985, Swadling *et al.* 1989, Gorecki 1992). It is also of note that Buka appears to be the only modern pottery industry, other than possibly the Southern Papuan pottery, that possibly developed out of a Lapita base. However, as with Southern Papua, the continuous sequence begins with a red slipped ware that is presumed to have had Lapita origins, while Lapita is only found on other sites (Specht 1969). Although detailed comparisons with these other styles of pottery is beyond the scope of this paper, the general picture is that there are a number of other styles contemporary with, but marked different from, Late Lapita and Early Laloki. Thus, by about 2,000 B.P. there was already a variety of regional styles established. There is a considerable amount of work to be done before the situation is understood properly.

■ Early pottery in Southeast Asia

The above discussion shows that the Early Laloki pottery of Southern Papua is in many ways similar to the Lapita style pottery at Watom and at Lapita sites elsewhere. However, there is sufficient difference to conclude that the relationship is not direct. The question of the immediate origins of the Early Laloki pottery style must remain speculation until actual archaeological evidence relating to its antecedents has been located. It is possible, for example that Early Laloki pottery came from the west, across the Arafura Sea from somewhere in Southeast Asia, or perhaps from an as-yet undiscovered settlement in lowland northern New Guinea.

It may be that Early Laloki, or, more likely, its immediate ancestor, had a common origin to Lapita, rather than deriving directly from it, but if so, on the evidence presented in this paper, this is likely to have occurred before 3,000 B.P.. Although, it continues to be debated whether Lapita pottery originated in the Bismarck Archipelago, the weight of evidence now favours it having been introduced from Southeast Asia (Kirch 1995, Spriggs 1996:344). This has always been supported by Peter Bellwood (with whom I agree), who has presented a series of reviews of recent archaeological finds in Southeast Asia that might assist in the discussions (Bellwood 1985:246-70, 1992, Bellwood and Koon 1989). Bellwood and others (Kirch 1995, Spriggs 1996) point out that there is a widespread early red slipped pottery horizon, prior to 3,500 B.P., in a number of parts of Southeast Asia. This may indicate that Lapita, and perhaps the immediate ancestor of Early Laloki, are part of a wider Southeast Asian population dispersal, not a unique migration as such into the Papua New Guinea area (Kirch 1995). That the dispersal included return visits is supported by the presence of obsidian of Talasea origin in a site

on Borneo dating to more than 2,000 B.P. (Bellwood 1992:50). Pamela Swadling's (1996) recent study of the antiquity of inter-regional trade, which included Southeast Asia and Papua New Guinea, indicates that there have been trade connections as well as migrations.

Comparisons between Lapita and Southeast Asian pottery of the period 3,500-2000 B.P. have shown some similarities in decoration, such as the presence of slipping and dentate stamping. However, the general impression is that the Southeast Asian red slipped pottery is different in decoration from Lapita. The assemblage of vessel forms at the site of Uattamdi in the Northern Moluccas (Bellwood 1992:Fig. 3) is very similar to Early Laloki, although details of rim and lip form are not yet available. There are open dishes, direct rimmed bowls, and globular pots with narrow rims and restricted orifices, and other globular pots with wide orifices and wide flat everted rims. This pottery has no decoration other than slipping. However, this evidence from Uattamdi suggests that the possibility of independent origins of Early Laloki is still an open question.

Discussion

This paper has discussed the vessel forms and decoration of the Early Laloki pottery style at eight Southern Papuan sites, arguing that there is a common assemblage of six vessel forms, and that decoration is similar in many ways considered to be suggestive of a close relationship of the pottery making communities. However, there are also significant differences of pottery style. Some of this has been attributed to sampling error, given the small size of the assemblages, but there is considerable variation in the pottery at the different sites. It certainly is not identical as it has been alleged to be, and it is suggested that this may reflect a situation similar to the variation among the different communities on Goodenough Island, described by Lauer (1974). The variation among the Early Laloki pottery making communities seems to be present from the time of initial settlement of the sites discussed.

The difference in pottery style between the Early Laloki communities does not seem to reflect relatively different ages, that is, there is no indication that one site may have been settled earlier than others or was the origin of the colonists of the others. If Lapita was the ancestor of Early Laloki, none of the sites is marked closer in pottery style to Lapita than the others. It can be suggested here that the Early Laloki pottery making communities described here had a common origin, possibly at a group of ancestral sites in Southern Papua. The most obvious place to look for such ancestral sites is an area that has seen little study by archaeologists, that is, the coast between Hood Peninsula and

Abau. It is also needs to be argued that, given current knowledge of coastline changes, a careful search for earlier beachfront sites away from the modern coastline needs to be undertaken, even in areas already well explored by archaeologists.

Historical linguistics also suggests the possibility of an ancestral Southern Papuan settlement in the central area of the coast (Pawley 1975, Ross 1994). The linguists argue that the 13 Austronesian languages of Southern Papuan are closely related, that they descended from a single immigrant language and occupied a locality, probably in the central coast or hinterland, for some period of time before dispersing both directions along the coast. We obviously have a idea of where to look for the ancestral sites of the Early Laloki potters, suggested by both archaeology and linguistics.

The case has also been made in this paper for a substantial similarity between Early Laloki and Lapita, both as exemplified at Watom, a Late Western variant of Lapita, and in Western Lapita in general. There are many shared attributes of decoration, such as the minor component of dentate/shell impressed decorated dishes and bowls, highly reminiscent of Lapita. Techniques of decoration, design elements, and patterns of decoration. Also similar is some of the content of decoration, such as the small geometric motifs and their variants.

There are also obvious differences, such as the Early Laloki rim and body grooving, the Lapita vessel forms that have not been found in Early Laloki, such as beakers, flat based dishes, and the rim scalloping on globular pots. While the similarity can support the possibility of historical relationship, differences can be taken to reflect distance in time and space. It is possible that the hypothetical original Southern Papuan settlers were a colony of Lapita origins, and that the Early Laloki pottery style developed from Lapita within Southern Papua. If so, it has been suggested in this paper that such an introduction would have occurred by about 3,000 B.P.

However, it may be worth pursuing another historical linguistic model. The linguists suggest that the ancestral Austronesian language of Southern Papua probably originated somewhere in the islands of Southeastern Papua (Ross 1988). Southeastern Papua is a large and complex area, with a large number of Oceanic languages, all of which have been classified as the Papuan Tip Group. Although Ross (1988) considers that the Papuan Tip Group probably originated from a single language coming from the Proto-Oceanic community of the Bismarck Archipelago or northern New Guinea, Chowning (1989) argues that some of the languages of Southeast Papua may have had different origins, making the choice of likely place of origin more problematic. As with the hypothesis of a Southern Papuan ancestral language, this linguistic model is capable of being tested archaeologically, although the task is much greater, involving a much larger territory. So far there is no sign of Austronesian settlement in Southeastern Papua, prior to the 2,000 B.P. Early Laloki, but these are early days, archaeologically speaking. I think we must keep open minds for the present and hopefully get on with the exploration. As Vanderwal wrote 25 years ago, there is little doubt that Early Laloki pottery

is related to Lapita in some way, but it will take further archaeological investigations to give us the when and where. The present paper hopefully contributes to the understanding of the attributes that may help to identify the ancestors.

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