

Formal Analysis of Diagnostic Ceramics from Site 14, Podtanéan

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New Caledonia has been studied by several archaeologists, yet there is much that can be clarified by a reanalysis of what has already been done. Green and Mitchell (1983:19) attempted a review and synthesis but pointed to "serious deficiencies" in the presentation of Gifford and Shutler's pioneering work from New Caledonia, published in 1956. Rather than being able to reanalyze the Gifford and Shutler collections first-hand, Green and Mitchell were restricted to working with the Hearst (then Lowie) Museum catalog, which inherently carries over Gifford and Shutler's original classifications. This paper presents new data based on a reanalysis of the site 14 diagnostic ceramics, which have been curated in the Phoebe A. Hearst Museum. It makes clear some aspects of the ceramic assemblage which were not evident in the original monograph (Gifford and Shutler 1956), and should be seen as a modest contribution towards the development of a ceramic chronology for New Caledonia.

Materials and Methods

Site 14 "lies on the Coral Sea shore between sites 13 and 16" (Gifford and Shutler 1956:8), and is located south of the Koné wharf. The excavators report that it covers about three acres and that it lies at "the mouth of a small, mangrove-bordered creek." This site is about one mile from site 13. Four 6 by 3 foot grids were excavated, these being grouped in pairs and about 15 feet apart. The site was dug in arbitrary 6-inch levels, as in all of Gifford and Shutler's excavations. Grids were dug about 30 feet from the high tide mark, but Gifford and Shutler report that they did not hit ground water until about 72-78" below surface. Green and Mitchell (1983) suggest that because of the proximity of the grids and the limited sample, it is reasonable to assume that the stratigraphy is similar. Gifford and Shutler described the stratigraphy of grid C1-2/D1-2 in detail, and a reanalysis of sediment samples (see Leonard, this volume) undertaken at the same time as this analysis may help to test this assumption. For the purposes of the reanalysis, I have agreed with this assumption and treated the whole site together, although I have also looked at the grids separately to test this assumption.

The sample of diagnostic ceramics from site 14 consists of 188 sherds; "diagnostic" taken to mean sherds displaying either decoration or some classifiable element of form (such as lip, rim, carination, etc.). Some sherds catalogued as diagnostic by Gifford and Shutler could not be located, while some others listed in the catalog as plain actually had some form of decoration on them. These 188 sherds represent all the diagnostics found at all levels and in all grid units. Site 14 was one of the three deepest sites dug by Gifford and Shutler, with a basal depth of 78" in grids C1-2/D1-2 and A1-2/B1-2. Grid A2-3/B2-3 was only dug to 48" and C2-3/D2-3 was dug to 72".

The main focus of my research was ceramic form and decoration. In order to analyze the ceramics from site 14, a protocol was designed which would complement a parallel ceramic study dealing with aspects of manufacture and technology (see Reiten, this volume). (The proto-

col is essentially that given in Appendix B.) Outside of consideration of form and decoration, questions concerning residue, surface conditions, and concretions were investigated because of differences noted in Gifford and Shutler's report, pointing to two major concentrations or occupations, one characterized as concreted with limestone and water-rolled and the other as less water-worn.

P. A. Hearst Museum catalog numbers often grouped several sherds under one number. These were re-numbered by suffixing two letters to the original number so that each sherd has an individual case number. Provenience was coded by site, grid unit, and 6-inch excavation level. Surface condition and residue were noted.

Sherd form was always recorded and in the few instances where a sherd was large enough to determine vessel form, this was also noted. The system for describing vessel form was adapted from a combination of Shepard's "general system of shape classification" (Shepard 1971:225-235), Rice's chapter "Vessel Form: Relating Form and Function" (Rice 1987:211-222), and Kirch's ceramic classification system for Niuaotuputu (Kirch 1988b). Although the protocol is described with vernacular names, these are derived by a paradigmatic grouping of discrete attributes. The classification is basically patterned after a system of vessel contours. Vessels are first divided into those with restricted openings and those with unrestricted openings. Possible lids become their own category. Restricted and unrestricted vessels are then determined to be simple, complex, composite, or inflected in form. These are determined structurally by corner and inflection points (Shepard 1971:231-32).

Vessels with simple contours or silhouettes have a smooth, uninterrupted straight or curving wall; they lack angle or inflection points. Composite silhouette vessels have a single corner point, and inflection points have a single inflection point. Complex contoured vessels have two or more corner points or inflection points or one or more of each. Bowls may be described within any of these categories. Necked vessels cannot be simple: they are always either composite, inflected, or complex, while collared vessels may be composite or complex (Rice 1987).

In addition to these vessel contour attributes, some more subjective and descriptive characteristics are then used to differentiate vessel forms. For example, flat-bottomed dishes, small bowls and large bowls all can be described as unrestricted simple contour vessels. Intuitively, it is fairly easy to differentiate between a dish and a bowl but since these can be confused by different ideas of what a "bowl" is, it is useful to say that a flat-bottomed dish has walls which are below some arbitrary height. Since I was unable to deal with large enough sherds to reconstruct any of these, we can only guess what an appropriate height would be. Classification also rests largely on the knowledge of forms that are common in the area. It should be noted that two of the most important vessel forms, open-mouthed jar/pot and constricted jar, are not listed on the chart because they are general and non-discrete attributes but are indispensable because of the ambiguity of the sherd fragments.

Method of decoration was coded according to the technique used, not the style or motif. It should be noted that some of these, such as shell impression and end tool impression, are sometimes difficult to differentiate, and there may be some cases where a slightly different method was used than the one assigned. Some discussion of some of the methods employed is useful.

Temper was recorded by the multi-coding method designed by Hunt (1989) to allow for several different temper types and combinations. A four place ordinal ranking system allows for description of the four most abundant elements. This allows for a maximal description of variability, but the temper types created by this system should be viewed as somewhat fluid, allowing for human subjectivity. For example, one sherd may seem to have a greater percentage of quartz than dark minerals but viewed again in a different context, the percentage of quartz seems less.

Rim form, rim thickening, rim thickening position, and lip form protocols are derived from Kirch's protocol for West Polynesian diagnostic sherd analyses (Kirch 1988b). Rim diameter was measured on a template which, by matching curvature angles of the rim sherd, can indicate a probable diameter for the orifice of the vessel. Lip thickness was measured as an average thickness. Maximum rim thickness and an average sherd thickness were also measured. Decoration position and surface treatment were noted. For site 14, design zones, zone markers, and motifs were barely utilized because of the small sample of decorated sherds with recognizable motifs and the specialization of these descriptive systems for dentate-stamped Lapita designs. Description of designs are provided so that they may add to any work attempting to design a motif system suitable for non-Lapita designs.

Each diagnostic sherd was cataloged separately according to grid and 6-inch excavation level. These were entered into a Sybase database maintained on a UNIX platform by the Quantitative Anthropology Laboratory at the University of California, Berkeley. Statistics and manipulation of data were done using the BLSS and S software packages.

Results

This reanalysis of Gifford and Shutler's work has added valuable detail to the current corpus concerning "Podtanéan" pottery and its relation to Lapita and New Caledonian pottery traditions. Analysis of decorative methods shows that Gifford and Shutler's report greatly underestimates the amount of variability in decorative technique present in the site 14 collection. All sherds from site 14 were described by Gifford and Shutler as appliqué, relief, incised, gashed, cord-marked, or roulette. My reanalysis revealed ten decoration methods and has brought these terms up to date with other work.

Green and Mitchell (1983) point to two concentrations of sherds in site 14 which suggest two main occupations. The first is between 12-30" and the second is between 36-54". "In general, the concentration in the upper levels equates with layers of black sand, and the lower levels equate with layers of consolidated sand" (Green and Mitchell 1983:48). The sherds were all re-examined to see if the surface condition would reveal any clues concerning occupations and related depositional environments. A cross tabulation analysis showed that the heaviest concentration of waterworn or otherwise eroded sherds is found in level 1, and from levels 7 to 10. Sherds in levels 2 to 6 are fairly well preserved. The levels with the most concreted sherds are 8, 9 and 10, which contain 84% of the concreted/waterworn sherds. There is a high association of paddle-impressed sherds with the concreted/waterworn layer. Of 63 paddle-impressed sherds, 40 were waterworn and another 21 were concreted/waterworn. Between the four grids, there seems to be some differentiation. Grids A1-2/B1-2 and A2-3/B2-3 both had a higher percentage of concreted/waterworn sherds (52% and 41% respectively compared to 27% and

19% for C1-2/D1-2 and C2-3/D2-3). This difference is probably due to depositional variation due to the proximity to the coast (see Leonard, this volume). With regard to residue, no sherds had visible residue such as that formed by cooking, but this could be a result of the relatively small sample size. The corresponding manufacture and technology study for site 14 showed residue occurring in the later levels (see Reiten, this volume).

Recognizable sherd form types consisted of rims with lips, rims without lips, carinated sherds, body sherds, one handle, one rim, lip, and body sherds. Body sherds were the most abundant, comprising 94 of the 188 sherds. There were 88 rims/necks and only four carinated sherds. Table 1 shows varying percentages of sherd types at different levels. This is really only a reflection of levels of decorated vs. plain sherds. Since the sample consists only of diagnostics from site 14, higher percentages of rims simply reflect fewer decorated sherds. This generally tends to be the case in the upper levels from level 5 on up to the surface. One interesting note is the high percentage of carinations in level 11 (75%), although it should be pointed out that the total sample of carinated sherds is only four sherds. The other carinated sherd is found in level 1 and will be discussed later as a possible foreign sherd because of its unusual temper and appearance. Most of the sherds were small, but one large sherd was found at the surface which included a rim, lip plus body.

Table 1
Diagnostic Sherd Form by Level, Site 14

Level	Rim with Lip	Rim w/out Lip	Carination	Body	Handle	Rim, Lip + Body	Total
Surface		2		2		1	4
0-6"	6	1	1	5			13
6-12"	2			4			6
12-18"	17	1		2			20
18-24"	5	2		2	1		10
24-30"	10	1		3			14
30-36"	1			2			3
36-42"	4	1		9			14
42-48"	8	1		22			31
48-54"	22	1		27			50
54-60"	2	1		15			18
60-66"		1	3				4
66-72"				1			1
Totals	77	11	4	94	1	1	188

Since sherds were so fragmented, it was extremely difficult to assign vessel types with any degree of certainty. Only eight of the 188 sherds were substantial enough to determine vessel form. Six were rim sherds, one was a rim sherd with part of the body, and one was a handle. There were three vessel forms reconstructed from the sample: open-mouthed jar/pots, constricted jars, and one open-mouthed jar/pot without a carination (Figure 1). Only one sherd, the large sherd found at the surface (cat. no. 21108aa), was large enough to discern whether or not a

carination was present. All the others could only be determined to the general shape since not enough of the body was present to determine the vessel shape. Although only eight sherds were actually large enough for reconstruction, the other rim sherds seem to be of similar shapes and it is possible to imagine that many sherds represent open-mouthed jars/pots and constricted jars. The sample seems fairly homogenous in relation to vessel form. The one handle found at site 14 is reconstructed as belonging to a constricted jar. This should be taken loosely since it is based on comparative vessels with the same sort of handle and there is really not enough of the vessel to make an accurate reconstruction. This whole exercise should be treated with caution. However, an overall general impression suggests that the most common vessel shape is the spheroid pot of the sort that Glaumont described:

Le Néo-Calédonien est potier de terre. Il confectionne lui-même sa marmite. Celle-ci est en terre, de forme sphéroïdale, à large ouverture: ses bords sont renversés et présentent deux ou quatre petits trous pour recevoir un lien quelconque destiné à la transporter d'un lieu à l'autre (Glaumont 1895).

The distribution by level of this vessel form is fairly widespread suggesting a continuity of vessel shapes. These "spheroid cooking pots," if that is what they indeed are, are found in levels 7, 8, and 9. The constricted jars are found in levels 2, 4, 7, and 8. One sherd (cat. no. 21108aa) is sufficiently large to infer that the vessel had no carination.

Analysis of decoration shows a wider range of variation of decorative techniques than Gifford and Shutler's report would lead one to believe (Table 2). Gifford and Shutler lumped everything into six categories: appliqué, relief, incised, gashed, cord-marked, and roulette. "Relief" refers to parallel and carved paddle impressed pottery. In the published plates, however, "relief" can be seen to refer to both paddle-impressed pottery and to appliqué designs. "Roulette" refers to dentate-stamped, of which only one sherd was identified. I have called this sherd "shell impressed" and will discuss it further below. One sherd (cat no. 21175) described as cord-marked, was missing from the collection. The sherds described as appliqué were, for the most part, indeed appliqué. However, the term incising is confusing since this actually encompasses all miscellaneous methods such as end tool impression, gouging, incising, shell-rocker, and shell impression. There were 86 undecorated sherds, 20 incised, 63 parallel paddle-impressed, 4 appliqué, 1 gouged sherd, 2 shell-rocker, 2 end-tool impressed, 1 suspension hole, 3 carved paddle-impressed, 3 shell impressed, 2 non-appliqué relief, and 1 sherd that had some form of decoration but of uncertain type.

Paddle-Impressed Pottery

Two types of paddle-impressed pottery were present at site 14. Most of this was parallel paddle-impressed but three sherds were found that were decorated with a carved paddle design. All of these were found in lower levels 7 to 12 (Table 3). Above level 7, there are only two occurrences of paddle-impressed sherds on the surface. The paddle-impressed ware is associated with the waterworn/concreted layers. As mentioned before, some of the grids have a higher percentage of concreted sherds but the percentages of paddle-impressed ware in each grid show that the differentiation probably is not linked to decoration method but perhaps depositional environment. Grids A1-2/B1-2, A2-3/B2-3, C1-2/D1-2, and C2-3/D2-3 had the following percentages

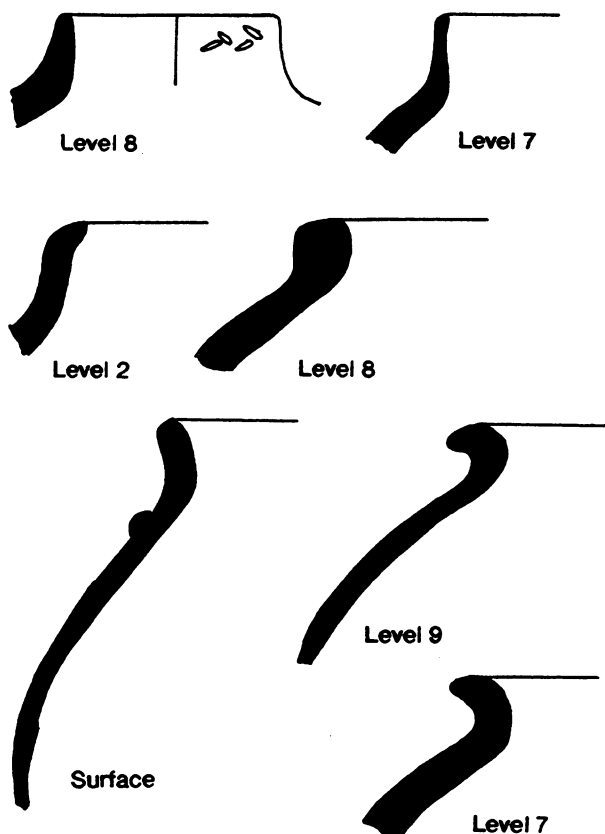


Figure 1. Examples of rim forms from site 14.

of paddle-impressed sherds: 40%, 17%, 36%, and 29%. However, it is clear that this method of decoration is characteristic of the lower layers and drops out above level 7.

Incised Pottery

Incised pottery is present at all nearly all levels of site 14, although it does not occur deeper than level 9 (Table 3). There is a high degree of variation among the incised sherds. Some are single incised lines and other incised designs form part of more intricate patterns, sometimes combining two methods of decoration. There are a few times that incising is used as a zone marker or place marker. For instance, one sherd (cat no. 21108aa) has a single incised line just above the relief band which has been added to the pot. It seems that it serves as some guideline for the application of the relief band. Another sherd (cat. no. 21592) has a possible faint incised line just near the relief band. Incised designs are both curvilinear and straight. Level 2 has a high number of single discontinuous lines but these are also found in other levels. The middle levels from 3 to 8 contain the most intricate incised designs, often in the form of chevrons of some kind.

Table 2
Ceramic Decorative Techniques, Site 14

Technique	Primary Method	Secondary Method
Absent	86	184
Incised	20	2
Dentate-stamped		1
Paralled paddle-impressed	63	
Applique	4	
Gouging		1
Shell-rocker	7	
Endtool	2	
Suspension holes	1	
Carved paddle-impressed	3	
Shell impressed	3	
Punctate		1
Non applique relief	2	
Decorated, indeterminate	1	

Table 3
Frequency of Certain Primary Decorative Techniques by Level, Site 14

Technique	0-6"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"	48-54"	54-60"	60-66"	66-72"
Incised	3	4		1	1	2	3	2	4			
Appliqué			2		1							
Parallel Paddle- Impressed							4	20	22	13	1	1
Carved Paddle- Impressed								1	1	1		
Shell Impressed			1	1	1							

Other Methods of Decoration

Non-appliqué relief, appliqué, suspension holes, end-tool impression, gouging, and shell-rocker and shell impressed are the other methods of decoration found at site 14. There is one questionable dentate stamped sherd (cat. no. 21224ab) from level 7, which is so eroded that it is difficult to see what method was used. I cannot confidently call this dentate stamped. Most of these variable techniques are concentrated around the middle levels, from around 3 to 7. There are two non-appliqué relief sherds. By this, I mean decoration that is three dimensional but not

added to the vessel. The clay is pinched out from the vessel wall to form the decoration but no clay is added to the pot. There are four appliqué sherds represented in the sample. In all cases, these are bands which can be described as crenate-like. They are pinched probably by the potters hands into a translating pattern either before or after application to the vessel. The non-appliqué relief sherds are found just below the appliqué ones and may represent a prototype for these relief bands since they are similar in style. Only one suspension hole was present in the sample. This was in level 7. These "suspension" holes are usually associated with spheroid cooking pots as described by Glaumont (1895) and Galipaud (1988). It is a little surprising that more were not found but this could easily be due to sampling error or absence of these on some cooking pots. Two end-tool impressed sherds were found from level 7. Both of these sherds have a chevron design but they look different enough that they probably represent different vessels (one was found in C1-2/D1-2 and the other in C2-3/D2-3). It is unclear what kind of tool was used but it seems different enough from a shell to refrain from calling it shell impressed. There is one sherd (cat. no. 21153aa) which is perhaps end-tool impressed but experimentation with an *Anadara* shell impressed flat onto plasticene produced a design that is remarkably similar, so it is listed as shell impressed. One sherd from level 4 was listed as gouged, meaning that the potter was probably gouging out pieces of clay in a rough and deep form of incising. The pattern is somewhat circular, but it is hard to say from such a small sherd. (This might be similar to some site 26 motifs). There are a few more sherds (e.g., cat. no. 21250aa) listed in the Museum catalog as incised but these border on gouging. Lastly, there are the shell impressed sherds. Two sherds in level 1 were clearly shell-rocker stamped. A little deeper in levels 3, 4, and 5, we have three pieces of shell impressed pottery. The one that looks also like end-tool impression is discussed above. There are two other shell impressed sherds, which are among the most elaborately decorated of the sample. These two are similar and they seem to have been decorated by dragging some sort of fairly eroded bivalve after first pressing it in to form a straight line. It seems that part of the design might have been done by incising as well.

Combined Methods of Decoration

Only four sherds had more than one form of decoration. There seems to be no pattern of combination of methods. Appliqué is found with incising, as discussed above in the form of a sort of zone marker. Shell-rocker is found with incising, and there is one case of punctate found with non-appliqué relief in level 5. Usually, designs for site 14 are fairly simple, with only one method of decoration being used. Paddle-impressed pottery occurs in the deeper levels of the site, incising occurs throughout, and decorative techniques become more varied in the later levels. Especially around level 5, we see a flourishing of new decoration methods, such as appliqué, non-appliqué relief, gouging, and shell impression. These samples are so small however, that it is difficult to say anything definitive except that paddle-impressing drops out after about level 8 and seems to give way to a number of new decorative techniques.

Motifs and Design Elements

Originally, it was hoped that study of the non-dentate designs would show some patterns or comparison with Lapita and that a systematic design system could be generated with rules for pattern-making. Unfortunately, providing only about 20 sherds with enough of a design

to see any pattern at all, the sample was too small to work with in these respects. However, description of these "motifs" might lead to further work on the subject. It seems clear that there were certain clear notions about which designs were produced with certain methods of decoration. The case of appliqué crenate bands has already been discussed above. These vary a little in size and shape; some appear to be flat, others twisted, and one (cat. no. 21356) is more like waves than crenate but seems to belong to the same general design form. One sherd shows two parallel bands about one inch apart. Sherd 21108 seems to use the appliqué band as a form of decoration just around the neck of the vessel, and it is unclear if the other sherds might have more than one band. The chevron is the most popular design element and appears in varying forms, levels, and is made by a variety of techniques. It occurs as deep as level 10 by end-tool impression, and continues up to level 4, where an elaborate chevron design is made by shell impression. Decoration is primarily on the outside of the vessel. There was one sherd with incised decoration on the rim, and several more have incision or other decoration just below the rim.

Temper

Quartz and lithic fragments were the most abundant tempers in site 14. As described above, temper was recorded by using a four variable system, ranking the temper constituents to provide a more detailed description of temper. Under this system, there were 30 separate combinations of temper. Temper present included calcareous sand, black/dark minerals, light minerals (quartz), olivine sand, lithic fragments, and mica. The five most frequent temper combinations in order of decreasing frequency were 6300 (lithics, quartz), 6320 (lithics, quartz, dark minerals), 3600 (quartz, lithics), 6230 (lithics, dark minerals, quartz), and 3200 (quartz, dark minerals). Combinations of quartz, lithics, and dark minerals make up most of the sample. There are five sherds with calcareous temper as the most abundant constituent. Four of these sherds are found in levels 8 or below. The one sherd with calcareous temper in the upper level is the shell impressed sherd which looks like end-tool impression. Similar designs were reported at site 26. The lower levels are more characterized by a higher percentage of quartz temper in relation to lithics. In the upper level (0-6") lithic temper becomes far more important in relation to quartz. Despite this difference, the temper seems to be fairly consistent and homogenous. The one sherd with micaceous temper could be an imported piece of pottery. It is the one carination in the upper levels (level 1) and the decoration is different in appearance. Unfortunately, this sherd (cat. no. 21113aa) is so eroded it is difficult to see the decoration.

Rims

Most rims in site 14 are everted. There are 17 direct rims, 13 inverted, 43 everted, and 2 upturned everted. The most frequent lip form was flat-rounded. In the sample there are 16 pointed lips, 19 rounded lips, 16 flat lips, 25 flat-rounded lips, and 1 inward beveled lip. For most sherds, no thickening was noted. Eleven are thickened on the exterior of the rim, 8 are interiorly thickened, eleven are divergent, 26 are parallel, and 19 are reduced. The most common lip forms for vertical rims are flat and flat-rounded and most vertical rims are either parallel or reduced. Inverted rims have a variety of lip forms with no one form occurring much more than the others. Thickening is also variable. Everted rims have mostly flat or flat-rounded lip forms. Everted rims are thickened on the exterior, interior, in divergent, parallel, and reduced fashion. Most everted

rims did not show thickening but when they were thickened it was usually on the exterior. If thickening did occur, usually the position was high. In only one case was thickening low and twelve sherds were thickened medially.

Surface Treatment

Most of the sherds have no trace of surface treatment. There were no slipped sherds. Paddling was common in the earlier levels and 21 sherds showed signs of wiping.

Measurements

Only a few rims were large enough to attempt a reconstruction of rim diameter. A rough mean would be about 20 cm. The range was from 16 to 36 cm. The mean of the lip thickness for a sample of 79 sherds is 7.14 mm. The maximum rim thickness is 7.65 mm. The maximum sherd thickness is 6.73 mm. An examination of the means of sherd thickness by level shows that sherds from the top three levels are slightly thicker than the sherds in the lower levels. Levels 8, 9 and 10 have the thinnest pottery, and are also the levels associated with paddle-impressed ceramics.

Conclusion

Site 14 holds interesting possibilities for refining the New Caledonian ceramic sequence. The one radiocarbon date for site 14 is from 42-48" (level 8) and is 1700 ± 300 B.P. (Gifford and Shutler 1956: 89). This places it between sites 13 and 26 in age, and from the evidence, it also seems to fit well between the two in terms of ceramic style and form.

There has been much discussion concerning Podtanéan as Lapita or as a synchronous but separate culture. Lapita site assemblages in New Caledonia are unique in having carved impressed pottery firmly associated with them, although Hunt (1980) has argued this may also be so in the Lapita sites of Viti Levu in Fiji. This situation has led Frimigacci (1981:117) to the following hypotheses: either the Lapita potters brought this manufacturing technique with them to New Caledonia or they borrowed it from other peoples in the territory (Green and Mitchell 1983:42)

From this reanalysis, we see that incised pottery is synchronic with paddle-impressed pottery but the other more elaborate forms of decoration are found later in the sequence. We especially see a flourishing of decorative techniques around level 5, not in number but in variety of techniques. It is possible that paddle-impressed ware is a local derivation of "Lapita" ware, since we see a similarity of vessel shapes such as the presence of carinations. Perhaps this paddle-impressed ware represents a more functional type of Lapita pottery than the elaborately decorated dentate-stamped ware. The excavations at Boirra by Frimigacci may support this with area E having fewer Lapita decorated sherds and a greater number of paddle-impressed. Area C is the opposite. This may show spatial differentiation within Lapita culture.

Galipaud (1988) redefined Frimigacci's ceramic typology on the basis of new studies including new techniques such as the study of mineralogical composition. He describes Frimigacci's typology as considering seven pottery types divided into three principal traditions: (1) The Lapita tradition (Lapita pottery); (2) The Paddle Engraved tradition (paddle stamped relief

decorated pottery); and (3) The Melanesian cultural group or Mangaasi (incised pottery, pottery with handles, chevrons, and garlands). He further splits the last group into Classical Mangaasi and "New Caledonia proper" which includes what he terms as "local innovations: embossed nubbins, suspension holes, handles, and other forms for holding the ware." Galipaud's typology still consists of three traditions: The "Koné tradition" consisting of Lapita pottery and ribbed relief pottery, the "Oundjo tradition" characterized by incised pottery, and the "Naïa I and II traditions," pottery with handles and pottery with nubbins. One main difference is that Galipaud (1988) states that "we must consider therefore, that during the Koné period in New Caledonia, two distinct populations or cultures did not exist."

From my reanalysis, Galipaud's conclusion regarding a single culture within the Koné Period seems likely. If the paddle-impressed ware is indeed associated with Lapita times, we might be seeing at site 14 an evolution from Lapita to a more indigenous localized style of pottery which becomes more "New Caledonian" over time. All this is speculative. However, it does seem from the analysis that it would be hard to say that we have any kind of replacement or hiatus in occupation.