Stylistic Variation in Pottery from Site 26, Oundjo

Timothy Plowman

In 1952 E. W. Gifford and Richard Shutler, Jr. challenged then current notions regarding the nonexistence of substantive New Caledonian prehistory by excavating at eleven prehistoric and historic sites on La Grand Terre or main island of New Caledonia. Large deposits of material culture ranging from ceramics to fauna provided the first major opportunity to analyze prehistoric New Caledonian culture. The excavations also yielded some of the first radiocarbon dates, critical to the identification and accuracy of any cultural sequence within both New Caledonia and the rest of Oceania. Due in part to the vast quantity of ceramic materials recovered by Gifford and Shutler, attributes such as design variation, decorative technique, and morphology were given a rather cursory treatment in their monograph (Gifford and Shutler 1956), both in terms of inter- and intra-site variation. There are other problems as well in data presentation and analysis, notably the use of uniform 6-inch levels in all excavations, virtually ignoring the natural stratigraphy (see Kirch, Introduction, this volume). The results of the pottery analysis were presented by weight rather than by count. Finally, the design categories established by Gifford and Shutler are insufficient to allow diachronic and synchronic comparisons; they are simply too broad. This paper re-examines a sample of the ceramic ware recovered from site 26 with an emphasis on design variation, decorative technique, and morphology. My aim is to place site 26 more securely within the New Caledonian cultural sequence.

New Caledonian Heterogeneity

The area defined as Melanesia displays great cultural diversity as well as a long prehistory (Bellwood 1979). Linguistically, the eastern Austronesian languages of Melanesia show much greater diversity than those of Micronesia or Polynesia (Grace 1970). New Caledonian languages in particular have always been regarded as strikingly "aberrant" Austronesian languages. It has been suggested that this aberrant nature is due to the influence of Papuan languages. Yet it is doubtful that there have ever been Papuan languages in that part of Melanesia. The entire island of New Caledonia comprises a single network of languages which are closely related to their neighbors, but the northern and southern extremes of the island have produced languages that are almost as equally different from each other as Austronesian languages on other islands. This regional differentiation appears to be mirrored in the later ceramic records (Galipaud 1988), characterized by increased subgroupings within New Caledonian pottery traditions.

What appears to be an example of this cultural heterogeneity is recounted in Captain Cook's and Admiral D'Entrecasteaux's markedly different receptions by prehistoric New Caledonians (Lyons 1986). Although both the English and the French expeditions landed within twenty years of each other in the same area (known as Colnett), Cook found the natives to be "noble, peaceful, and trustworthy," while D'Entrecasteaux barely escaped with his crew and ship intact. Later professional ethnographic treatment of New Caledonian peoples (collectively known as Kanaks) tended to be more normative in evaluations regarding intra-island cultural variation (Glaumont 1889). As a result of this perspective, few scholars believed prior to Gifford

and Shutler's 1952 excavations, that an archaeological excavation of New Caledonia would yield much in the way of a differentiated record of prehistoric material culture.

Archaeology in New Caledonia

Given New Caledonia's (currently contested) status as a French territory, it is not surprising that the majority of investigations have been carried out by French anthropologists and archaeologists. The first of these "colonial anthropologists" was Glaumont (1889), whose report of Bourail, late in the nineteenth century, is perhaps more valuable for its accompanying ethnographic information than for its archaeology. The initial discovery of what was later identified as Lapita was made by Father Otto Meyer in 1908 on the island of Watom in the Bismarck Archipelago (Green 1979). In 1917 Piroutet identified a Lapita site on the Foué Peninsula on the central west coast of New Caledonia (Piroutet 1917). After a lull in investigations of more than a quarter century Lenormand (1948) found a ceramic ware with striking geometric designs (again, Lapita) on a beach at Saint-François-près-Vao on the Île des Pins. In 1950, the geographer Avias (1950) compared Lenormand's sherds with sherds excavated by Meyer at Watom and noted the similarity. Gifford and Shutler's excavations in 1952 at site 13 (WKO-013) revealed sherds clearly cognate with Meyer's, Lenormand's and Piroutet's (Gifford and Shutler 1956).

In 1959, Golson excavated Lenormand's Lapita site on the Île de Pins and later (in 1963) investigated the tumuli, or mounds, reported by Avias (1949). Since then, much has been written about these tumuli and the possibility that these mounds of landsnail shell (*Placostylus*), lithics and earth represent the work of a pre-ceramic culture in New Caledonia. Dates for the tumuli range from 3000 to 7000 B.P. (Green and Mitchell 1983). White (1979) used the mounds along with deep cultural deposits at the Balof rock shelter in New Ireland, imported obsidian on New Britain, and the purported antiquity of Non-Austronesian languages to argue for a pre-ceramic presence in Melanesia dating between 4000 to 6000 B.P. Recently, it has come to light that the tumuli were formed not by prehistoric New Caledonians but by an extinct species of megapode for purposes of egg incubation (Green 1988).

In 1966-67, Colin Smart excavated in southern New Caledonia under Golson's direction. He chose three sites located on the south end of the island at Naïa Bay; TON-6, TON-7 and NOU-1. Unfortunately, after extensive excavations, fire destroyed Smart's records and what remains of his work is unpublished, as is Vanderwal's reworking of Smart's summary report (see Green and Mitchell 1983). In the early 1970s, Frimigacci conducted excavations at the Vatcha site at Saint-François-près-Vao, also called PIN-1 or St. Maurice by Smart and Golson, respectively. Frimigacci's findings, along with a report on the prehistory of New Caledonia in general, collectively represented a systematic and broad-based work. Subsequently, Frimigacci and Maitre (1981) turned to excavations of Lapita sites on the main islands at Boirra near Koumac (NKM-001), where a sequence beginning with Lapita and stamped-ribbed paddle-impressed pottery (making up what Galipaud [1988] calls the Koné tradition) and ending with what Green and Mitchell (1983) call "undecorated Mangaasi" pottery. Frimigacci also excavated at Nessadiou (WBR-001), situated next to Bourail Bay, where he identified a sequence similar to that at NKM-001, with the upper layer containing "Mangaasi related" assemblages (Green and Mitchell 1983).

In the mid-1980s, Galipaud made an extensive survey of New Caledonia from the Belep Islands in the extreme north to the Île de Pins in the south. Sites found include Balabio (whose ceramics represent a transitional ware between Lapita and Oundjo in the north, according to Galipaud), Arama, Diahot, Koumac, Kone, Engwe, Naïa, Tiare and l'Îlot Page. Galipaud's analysis (1988) synthesized a great deal of information regarding archaeological records and produced a typology with interesting implications in light of the material examined in this paper.

Methodology

In 1952, Gifford and Shutler excavated site 26, presently the location of Oundjo village, on the northwestern coast of La Grande Terre. At site 26, 1,053 cubic feet were screened. The site itself, estimated to be ten acres in extent, occupies a low, rocky promontory. On the northern side, it slopes down to a stream or slough. Oundjo is not situated on a substratum of beach sand; instead all three sub-site locations comprising site 26 (locations A, B and C) were situated on bedrock. All three sites were outside the reach of wave action according to Gifford and Shutler's estimation. The following description of the excavation of site 26 has been summarized from Gifford and Shutler's report (1956:9).

Location A: This location proved to have little depth of cultural material before the substratum of bedrock was reached. The deepest deposit at the lowest level was 18". The midden was dark brown throughout, not black. Stake B-1 was 14 ft. 6 in. lower than stake B-20, being 57 ft. apart.

Location B: In the western end of this location the water table was reached at about 15". Thereafter, bailing was necessary. Rectangle A1-15 is on level ground. A hill to the east of location B made for a slight incline between D4 and D1. At location B, excavation ceased at 48"when bedrock was reached.

Location C: This location lay in the clear central part of Oundjo village. The long arm of grid C runs across an old house mound. Stake A1 is 3 ft. 1 in. lower than stake A5. Location C bottoms out at 36".

In light of certain flaws in Gifford and Shutler's data presentation, the importance of establishing a ceramic chronology and of delineating regionally based ceramic periods, as opposed to broad generalizations, should be obvious. The sample of site 26 chosen for reanalysis attempted to cover the widest possible range of cultural deposits. Bearing this in mind, extremes in depth and area were considered a desirable basis for grid selection. Six grids were selected for analysis (location A: AlBl, A14/B14; location B: A1/B1, D3/E3; location C: D7/B7, A1/B1/D1). From those grids, only diagnostic sherds (i.e., those displaying decoration or rim and lip form) were used in this analysis; the bulk of the ceramic pieces, which are plain body sherds or of an indeterminate nature, were ignored. Thus, intensity of occupation or decoration in relation to plain ware cannot be gauged by this study.

Much of the archaeological literature on artifact typology for Melanesian sites tends to be based on ad hoc decisions as to which attributes are significant in terms of culture history (Kirch 1988b). As a result, it has become difficult for other archaeologists to use these classifications, or even to compare their material to established types. In light of this, a protocol for the analysis of site 26 pottery was designed by consulting other research in Oceania, particularly

Kirch and Yen's work at Tikopia (1982) and Irwin's work in Mailu (1985). For reference, this protocol is reproduced in Appendix B.

Analytical techniques were selected in anticipation of the material in question, and subsequently were modified slightly as empirical data from the sherds was collected. They were not selected in accordance with any ideal schema. Elements of design were recorded independently of the attribute level analysis due to the fragmentary nature of the sherds. Throughout this study, it should be kept in mind that the vast majority of sherds recovered by Gifford and Shutler consisted of plain ware. Pottery at site 26 is almost uniformly in fragments no larger than 10 cm^2.

Laboratory analysis required the coding of attributes in a specifically constructed protocol in preparation for creating a database file. Certain epistemological considerations lay behind the construction of this protocol. Attributes of form are considered to collectively express the size and shape of a vessel, resulting in a tentative morphological classification. Expression of design attributes in terms of location, technique, and design elements are considered separately in order to limit inductive conflation of inappropriate categories (Rice 1987). Unfortunately, basic attributes of function must be inferred from scanty ethnological data via cross-cultural comparisons within Melanesia. This standardization is not an attempt to imply rigid homogeneity. Obviously, style and function are open rather than closed systems of expression, constantly receiving and transmitting new information (Dunnell 1971).

The composite pot used in this study was subdivided as follows: The upper margin of the rim is defined as the *lip*. The *rim* is defined by a change in direction or contour of the upper vessel wall which sets the rim at an angle from the upper body or by increased thickening along the upper margin (Irwin 1985). A horizontal plane was used in orienting rim sherds for morphological classification. The radial orientation or diameter of an orifice was determined (when possible) using the convention of the vertical axis of the vessel as normal to the rim plane. The sherd was then aligned to the closest parallel of several concentric circles measured in centimeters.

Manufacture and Morphology

While slab construction cannot be ruled out, the pottery at site 26 was probably first made using the coiling technique and later thinned using a paddle-and-anvil technique. This technique was widely used throughout Oceania (Solheim 1949). Anvil depressions on the interior of the majority of the sherds attest to this. Surface wiping smoothed over most paddle impressions, leaving fine parallel striations in the horizontal plane (when orientation using a rim for reference was possible). Firing appears to have taken place at a low temperature, as evidenced by high porosity and the retention of unoxidized cores in some sherds. All three locations display no marked differences in this respect. While scale varies, all basic forms appear to have been globular, lacking carination and basal flattening. (See Casella, this volume, for additional analyses of ceramic technology at site 26.)

Rim Form

Due to the variety of rim forms at site 26 both a profile of forms as well as the results of attribute analysis are presented (Figure 1 and Table 1). Out of 392 diagnostic sherds examined,

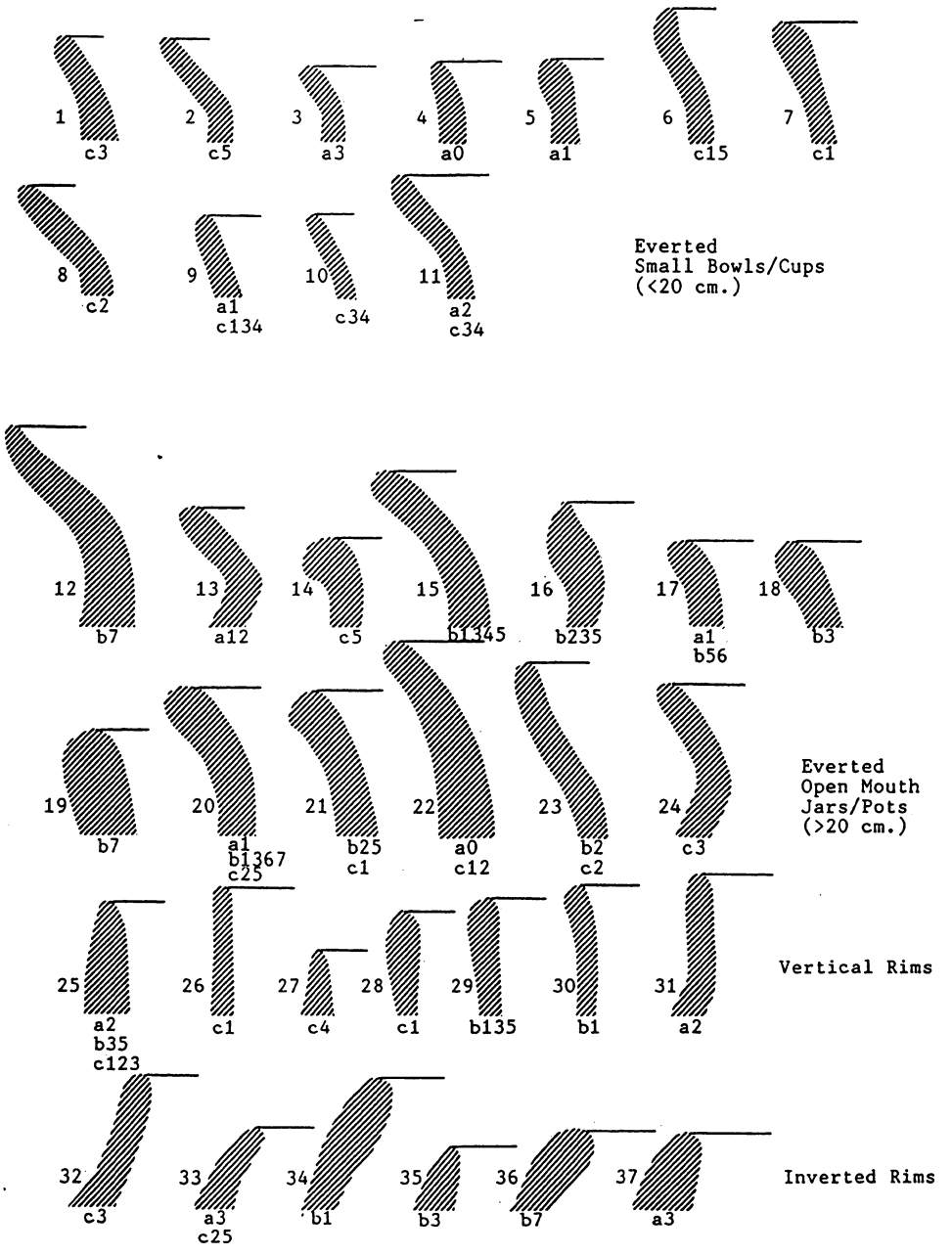

Figure 1. Rim sections from site 26.

Table 1
Distribution of Sherd Type by Level, Site 26

Sherd Type	0-6"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"
Plain	96	96	95	95	96	96	99	100
Incised	4	4	5	4	4	4	1	
Relief	x	x	x	x	x	x		

x denotes less than 0.5%. Data from Gifford and Shutler (1956, Table 41).
Chi-square statistic 29.301 has 32 degrees of freedom and P-value0.6038

145 retain a portion of the rim (A = 37, B = 42, C = 66). All but 27 of the 145 lip/rim sherds are everted. Inverted rims are rare at all locations, with upturned-everted and upturned-inverted forms occurring only in the uppermost levels at location A. Location C is unique in yielding vertical rims almost through its entire sequence. Inverted rims are found in all levels (except B8) representing roughly 20% of rim forms displayed at each location. The greatest variation in rim form and lip form occurs on vessels with everted rims. This is due to the higher frequency of everted rims recovered at site 26.

Figure 1 presents rim profile variation in terms of presence/absence at specific depths by location (labeling indicates location followed by level number). Some of these profiles are a composite of several rim sherds displaying similar morphology found in the same provenience. Most rim thickening is divergent with exterior thickening (there were four occurrences of interior thickening found, see Figure 1, nos. 5, 7, 16, 34). Rim courses of small bowls and cups are generally everted. Several vertical rim forms may also be classed as small bowls or cups (Figure 1, nos. 26, 27, 29, 30). The four classes depicted in Figure 1 have been distinguished by differences of rim form and scale. With the exception of nos. 16 and 30, the lip form displayed on all vessels is rounded. Everted small bowls and cups represent 22% of all identifiable vessel forms at location A, 28% at location B, and 37% at location C. As such, these percentages appear to confirm this vessel type as a continually occurring minority at site 26.

The majority of diagnostic vessel forms recovered at site 26 are open mouth jars/bowls/pots with a diameter > 20 cm (A = 76%, B = 70%, C = 60%). Typically, they are thicker than their smaller counterparts. The vessel forms range continuously throughout all three locations with a slightly greater concentration in the lower levels at B and C. The remaining forms (collared bowls, bowls with restricted openings) constitute a statistically insignificant percentage. As previously stated, more than 95% of the sherds recovered at site 26 are plain ware (and thus not analyzed here). Therefore, any inference regarding the evolution of vessel morphology produced in this study cannot be regarded as representative. The intent here is merely to give some indication of the variation present.

Temper

After analysis, two modes of temper appeared: lithics (dominating locations B and C) and light minerals (dominating location A). This inter-location variation is difficult to account for. It may be a result of the nature of the sample, it may be a reflection of differences in occupational tempo-

rality, or it may simply be that one source of temper was preferred by potters using one area of the site. Due to the similarity in morphology and decoration of the sherds analyzed, the reversal in temper distribution seen at location A is probably a random occurrence within the nature of the sample and should not be construed as representing definite inter-location variation. In any event, the marked presence of light minerals begins, at all three sites, either at level 3 or level 4. Lithics/dark minerals present unimodal curves at all three locations indicating parallel modes for both light minerals and lithics/dark minerals. Perhaps the inclusion of light minerals in the stratigraphy indicates a new-found source of temper for the potters at site 26.

Carbon Residue

Table 2 illustrates the presence/absence, by level, of sherds coated with carbon residue. The percentage breakdown of the number of sherds displaying carbon residue is as follows: A = 3.7%, B = 6.9%, C = 5.7%. Every sherd displaying carbon has vessel walls of at least 8 mm in thickness. Sherds displaying this thick black crust are coated solely on the interior. Gifford and Shutler's assertion (1956) that a few sherds may have been painted appears to be unwarranted and as likely was produced by cooking of foodstuffs as by the use of kauri resin. Locations B and C show large percentages of carbon residue early on, which may indicate the importation of cooking pot technology versus gradual development within the sites. A great number of the sherds which display this coating have thick vessel walls.

Table 2
Presence of Carbon Residue By Level, Site 26, Location B

Levels (inches)	Present	Absent	Total Sherds
0-6	1	18	19
6-12		21	21
12-18	2	35	37
18-24	3	17	20
24-30	3	15	18
30-36		8	8
36-42		3	3
42-48		3	3
Total residue	**9**	**120**	**129**

Chi-square statistic 17.704 has 14 degrees of freedom and P-value 0.2206

Sherd Thickness

Sherd thickness was measured and plotted for each location. Location A displayed a bimodal curve. The mean thickness at location A is 8.08 mm with a standard deviation of 2.01 mm. Location B shows a similar bimodal curve, with much thicker vessel walls in the lower levels. The mean at location B is 8.87 mm with a standard deviation of 1.86 mm. Location C

shows an unimodal curve, indicating a continuum in vessel wall thickness rather than discrete groupings. The mean at location C is 7.99 mm with a standard deviation of 2.41 mm.

Decorative Technique

Gifford and Shutler's formal description of design attributes of the pottery at site 26 unfortunately conflated the categories of technique and design (Gifford and Shutler 1956). Here I will treat the two categories independently, focusing on an exposition of the range of designs found at site 26. Decorative *technique* refers to the method of applying a design to the vessel, rather than a particular design motif (Kirch and Yen 1982).

Sherds at site 26 display designs that were constructed with one to three decorative techniques (generally limited to two techniques and a suspension hole). Tables 3-8 present primary and secondary techniques, respectively. The terminology used here is not intended to impart more importance to the primary versus secondary in a design combining two techniques, rather it is merely a matter of convention (sherds displaying three techniques were limited to one occurrence and did not justify a table). The protocol reflects this by making due allowances for combinations of decorative techniques. Sherds recovered make use of seven distinct techniques which combine in a variety of ways to produce design motifs. The motifs produced on the sherds recovered at site 26 reveal no discernible pattern, hence technique and not motif is focused on in the following pages.

Incised: This is a graphic technique formed by pressing or cutting lines into unfired pottery in a freehand manner (Shepard 1971). In site 26, line incision was performed with a single pointed tool. The incisions left in the pottery range in size from 0.1 mm to 0.5 mm in width. Location A displays incising throughout all three levels with high concentration in the surface deposits. Location B also contains incised ceramics in all but one of its eight levels and, like location A, shows a predominance in the upper levels (levels 2 and 3). Location C shows a slightly larger concentration at levels 2 and 3.

Gouging: This technique could theoretically be performed with the same tool used for making incisions, but it is the combination of action as well as implement which distinguishes this category from incising. The technique is the result of cutting deeply into the paste, which may or may not result in the raising of pronounced ridges around the gouge. At site 26, this technique is characterized by short, sharp cuts or gouges into the vessel, generally at its most plastic phase of construction. While the above two categories appear to be less than mutually exclusive, the range between the categories incised and gouged presents a fairly clear polarization along what is probably a technical continuum. A minority of examples fall into the middle, and are generally classified based on the width of the incision; the thinner being incised and the thicker being gouged. Gouging appears at all three locations in the middle and upper ranges. At location B, 19% of the sherds recovered display gouging, with 28% at location C, and 22% at location A.

End-tool Impressed: This technique involved imprinting a mark in plastic clay and consequently compressed and displaced a portion of that clay (rather than raising ridges). The motion involved by the craftsperson is exclusively perpendicular to the surface of the vessel. A variety of objects were evidently used, such as reeds or sticks. A characteristic feature of this

Table 3
Primary Ceramic Decorative Technique, Site 26, Location A

Decoration Technique	Surface	0-6"	6-12"	12-18"	Total
Undecorated	13	12	15	11	52
Incised	10	4	9	2	25
Gouging	3	4	5		12
Endtool Impressed	1	4			5
Suspension Holes	1	2		1	4
Combed	2	2	1	1	6
Shell Impressed		1	1		2
Total	**30**	**29**	**31**	**15**	**106**

Chi-square statistic 20.998 has 24 degrees of freedom and P-value 0.6389

Table 4
Primary Ceramic Decorative Technique, Site 26, Location B

Decoration Technique	0-6"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"	Total
Undecorated	7	9	15	5	8	4	3	2	53
Incised	3	3	7	3	2	1		1	20
Gouging	3	2	5	1	3	1			15
Endtool Impressed	2		3	3	2				10
Suspension Holes	1		1	1	2	1			6
Textile Impressed				1					1
Combed	3	7	6	5	1	1			23
Shell Impressed				1					1
Total	**19**	**21**	**37**	**20**	**18**	**8**	**3**	**3**	**129**

Chi-square statistic 34.462 has 49 degrees of freedom and P-value 0.9425

Table 5
Primary Ceramic Decorative Technique, Site 26, Location C

Decoration Technique	0-6"	6-12"	12-18"	18-24"	24-30"	Total
Undecorated	19	23	24	14	10	90
Incised	4	6	6	4	2	22
Gouging	4	4	8	3		19
Endtool Impressed		4	1			5
Suspension Holes	2	2	3	1		8
Textile Impressed		1				1
Combed	2	2	4			8
Shell Impressed	2					3
Total	**33**	**42**	**47**	**23**	**12**	**157**

Table 6
Secondary Ceramic Decorative Technique, Site 26, Location A

Decorative Technique	Surface	0-6"	6-12"	12-18"	Total
Undecorated	29	26	30	14	100
Incised		2	1		3
Suspension Holes		1		1	2
Shell Impressed	1				1
Total	**30**	**29**	**31**	**15**	**106**

Chi-square statistic 9.017 has 12 degrees of freedom and P-value 0.7015

Table 7
Secondary Ceramic Decorative Technique, Site 26, Location B

Decorative Technique	0-6"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"	Total
Undecorated	19	21	34	17	18	7	3	3	122
Incised				1					1
Suspension Holes			3	2		1			6
Total	**19**	**21**	**37**	**20**	**18**	**8**	**3**	**3**	**129**

Chi-square statistic 12.131 has 14 degrees of freedom and P-value 0.5958

Table 8
Secondary Ceramic Decorative Technique, Site 26, Location C

Decorative Techniques	0-6"	6-12"	12-18"	18-24"	24-30"	Total
Undecorated	31	37	44	23	12	147
Incised	1	3				4
Endtool Impressed		1				1
Suspension Holes	1	1	2			4
Shell Impressed			1			1
Total	**33**	**42**	**47**	**23**	**12**	**157**

Chi-square statistic 12.432 has 16 degrees of freedom and P-value 0.7137

technique is the nondescript nature of the implement used to make the impression, whereas discernible end-tool impressions are given their own categories (e.g., textile and shell impressed). Location C displays a low concentration of end-tool impressing, with four sherds at level 2 and one at level 3. Locations A and B show a somewhat higher frequency, but this appears to be a rare decorative technique at site 26.

Suspension Holes: This decorative technique might be considered a morphological feature,,but the fact that these holes were applied at the last phase of construction makes them analogous to decorative techniques also applied at that stage. Suspension holes are small holes which occur singly in the upper body or rim of vessels where it would be feasible for the holes to act as described (Irwin 1985). Gifford and Shutler define suspension holes as "holes near the rim for inserting cords" (1956:71). These were evidently made by perforating the pot with some appliance or appendage before firing. Both plain and decorated sherds show these perforations. According to Glaumont (1899), these holes were used to suspend the vessel by cords from the roofbeams of houses. Galipaud (1988) discounts such a function and asserts that these holes are, in fact, utilized in cooking pots to let steam escape. In examining sherds with suspension holes, I found a negative correlation with the presence of carbon residue. Interestingly, one sherd displayed interior carbon coating which rose above the suspension hole. Residue, however, was not present inside the hole itself, nor were its traces seen on the exterior of the sherd. This would seem to confirm Glaumont's and Gifford and Shutler's hypothesis, and to invalidate that of Galipaud. Suspension holes appear in the upper levels at location A, at the upper and middle levels at location B, and at the middle levels at location C.

Textile Impressed: This decorative technique appears to be the result of laying a piece of cloth upon the plastic surface of a pot and either rolling a cylindrical object over the cloth or paddling the textile in order to create the desired impression. This technique does not appear at location A. It only appears once at location B (at level 4), and once at location C (at level 2). Given that woven cloth did not exist in New Caledonia prior to European contact, this technique indicates a recent date for these sherds.

Combed: This technique was performed with a multi-toothed object, such as a bivalve shell or a carved piece of wood. Experiments using modeling clay and the above devices were conducted in order to ascertain the precise delineation between the impressions made by the two devices within this particular decorative technique; the results were inconclusive. Depending upon the size and/or wear of a bivalve (as well as the plasticity of the clay), a range of impressions can be made which do not fall into mutually exclusive categories. Combing first appears in level 6 at location B, where it retains its highest concentration, with 30% of all diagnostic sherds recovered at location B displaying combing. Locations A and C display a moderate amount of combing in their upper levels.

Shell Impressed: These impressions were made with a section of a bivalve shell in a perpendicular motion to the vessel's surface. Gifford and Shutler (1956) recovered four "pot scribes" thought to have been used for making incised decorations on pottery. All appear to be of *Cardium* shell, with one being a complete valve of a *Cardium enude* with the ends of the serrated tips on each side of the center knocked off, leaving the center tip to serve as a marker and scorer. Shell impressed pottery is rare and appears in the upper and middle levels of all locations.

Suspension holes, incising, end-tool impressions and shell impressions constitute the techniques most used in combination with other techniques. Generally speaking, a single technique was used in designs found at site 26. Instances of compound techniques are restricted to the upper and middle levels, and represent 11 percent of all sherds possessing decoration. Based on the data presented by Green and Mitchell (1983, Figure 7), sherds recovered at site 26

share similarities with those recovered at the following other sites excavated by Gifford and Shutler in 1952: site 50 (EH1-050; Dowalwoue), site 51 (EH1051; Tiouande), site 52 (EH1-052; Ouapa), and site 44 (ECA-044; Nowe).

Design Elements, Typology, and Extra Areal Comparisons

Figures 2 through 5 illustrate the range of designs across space and time found at site 26. Despite some regularity of design, most patterns appear to be idiosyncratic, making it difficult to study design motif in any systematic or comprehensive way. Although it is a relatively straight-forward matter to determine the method by which a sherd has been decorated, frequently the sherds were too small to give any impression of how elements might be combined to form motifs. The following figures in no way represent an exhaustive study of ranges of design at site 26; rather, they attempt to provide the reader with an appreciation of the variation to be found there. Figure 2 shows designs associated with rim forms, alphabetically labeled with location and depth level given below the sherd. With the exception of c and d, all associations are unique. Most suspension holes are located in the upper body or neck of the vessel. The diameters range from 10 to 12 mm. All of these sherds were found in the middle of upper levels at their respective locations. Sherds 1 and m are notable for the decoration found on the lip itself. (Garanger [1971] notes similar decorations on sherds from Efate, the Shepherd Islands and Bougainville.) Furthermore, sherd m displays a marked similarity to sherds from the village of Tiop, on the island of Bougainville. In 1949, Conrad Johnson, Jr. made a surface collection, totaling 75 sherds, in a banana grove at Tiop. Shutler and Shutler (1961), in evaluating the Bougainville sherds, noted that the decorative techniques used (incising, gouging, combing) were similar to that used on sherds recovered by Gifford and Shutler during their New Caledonian excavations. Sherds h and j, with their more or less parallel wavy lines, also appear to be similar to ceramics recovered from Bougainville. Garanger (1971) proposes similarities along these lines for Fiji and central Vanuatu. Smart excavated sherds similar to j at WPT-055 at Naïa Bay. Smart's initial date for his combed sherds is 2000 B.P., with their disappearance occurring around 1700 B.P.

Sherds a, e and j share a similarity to those found by Frimigacci at sites WBR-007 near Bourail and STY-005 near Yate. The aforementioned sherds also resemble those recovered by Galipaud at site WKO-142 near Koné, as well as those recovered by Smart at WPT-005 near Naïa Bay. Those sherds recovered by Smart have an initial date of 2600 B.P. and a terminus of about 1700 B.P. Sherds g and i appear to be cognate with sherds recovered at site WPT-148 at Engwe (near Naïa Bay) by Galipaud. It is worth noting that several of the sherds illustrated in Figure 2 have a very wide distribution, with an especially heavy concentration in the south, yet they also share similarities with sherds from Vanuatu to the north.

Figures 3-5 illustrate sherds recovered from site 26 by location. Within each figure, sherds are organized by grid (e.g., A1/B1) and further organized by level. The level number immediately precedes the sherds so designated until replaced with a new number indicating a new depth.

In Figure 3 (sherd nos. 4, 12 and 16), Figure 4 (sherd no. 35) and Figure 5 (sherd no. 1), sherds displaying shell impressing are illustrated (in Figure 3, sherd no. 4 is notable for its compound design). Shell impressing (in association with Podtanéan or paddle-impressed relief) appears in relatively small numbers in site WPT-055 (Naïa Bay), beginning about 2000 B.P.

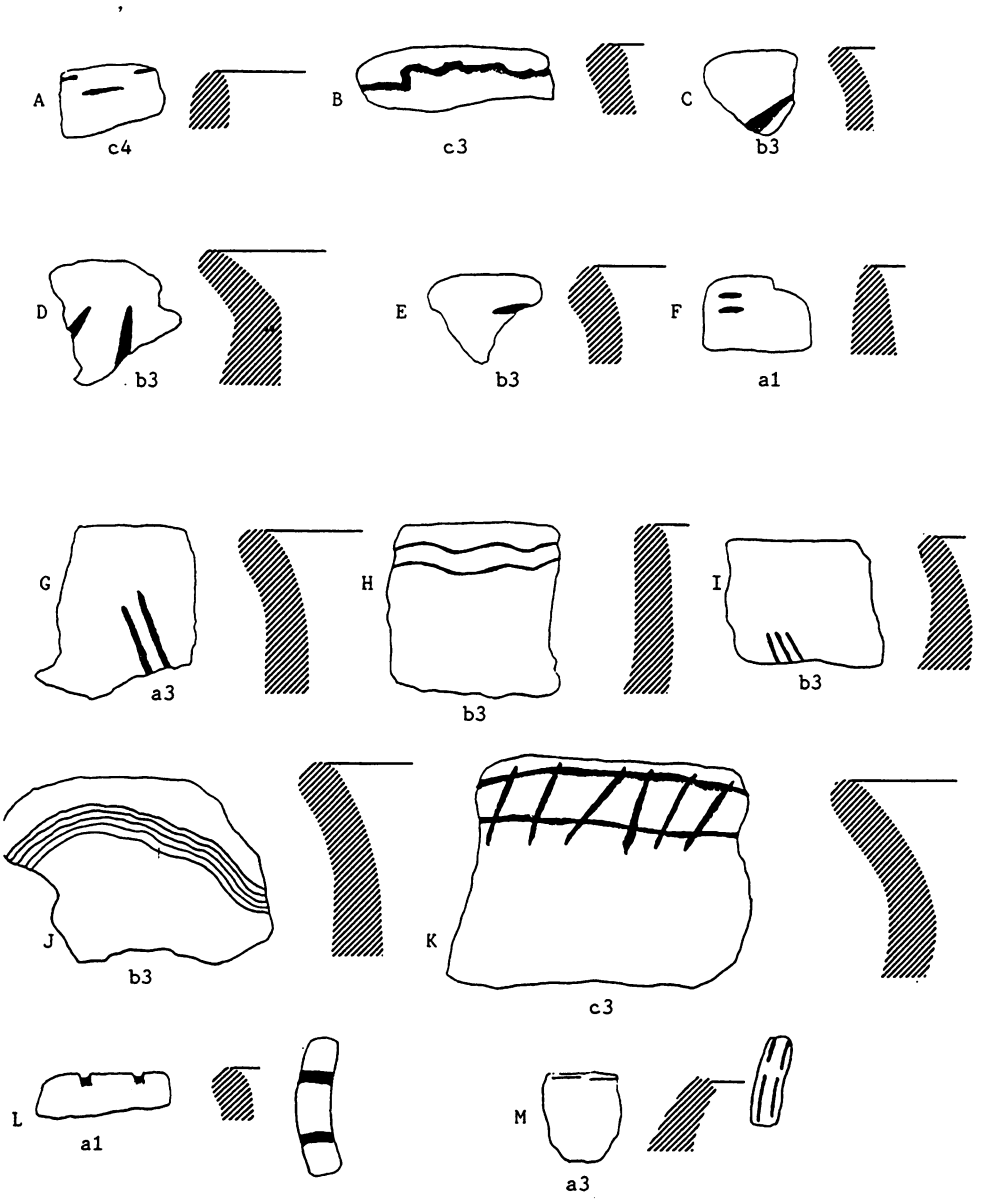

Figure 2. Decorated rim sherds from site 26

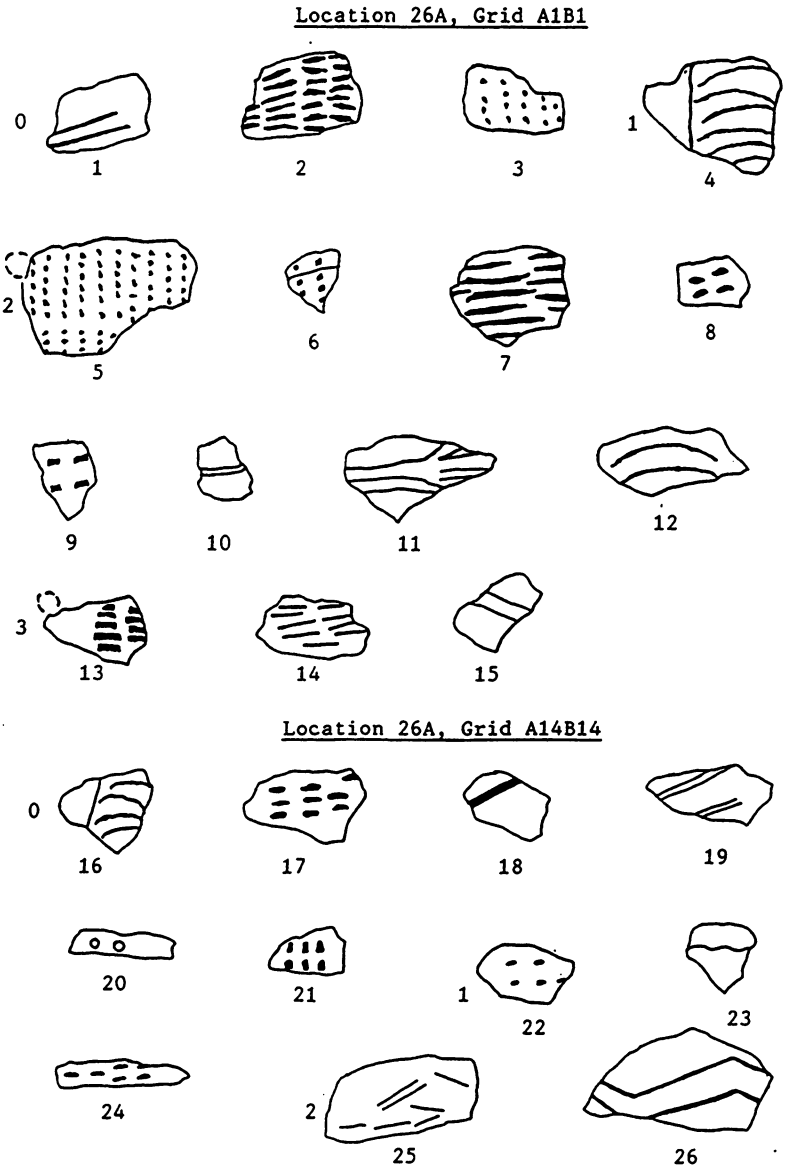

Figure 3. Decorated sherds from location A, site 26.

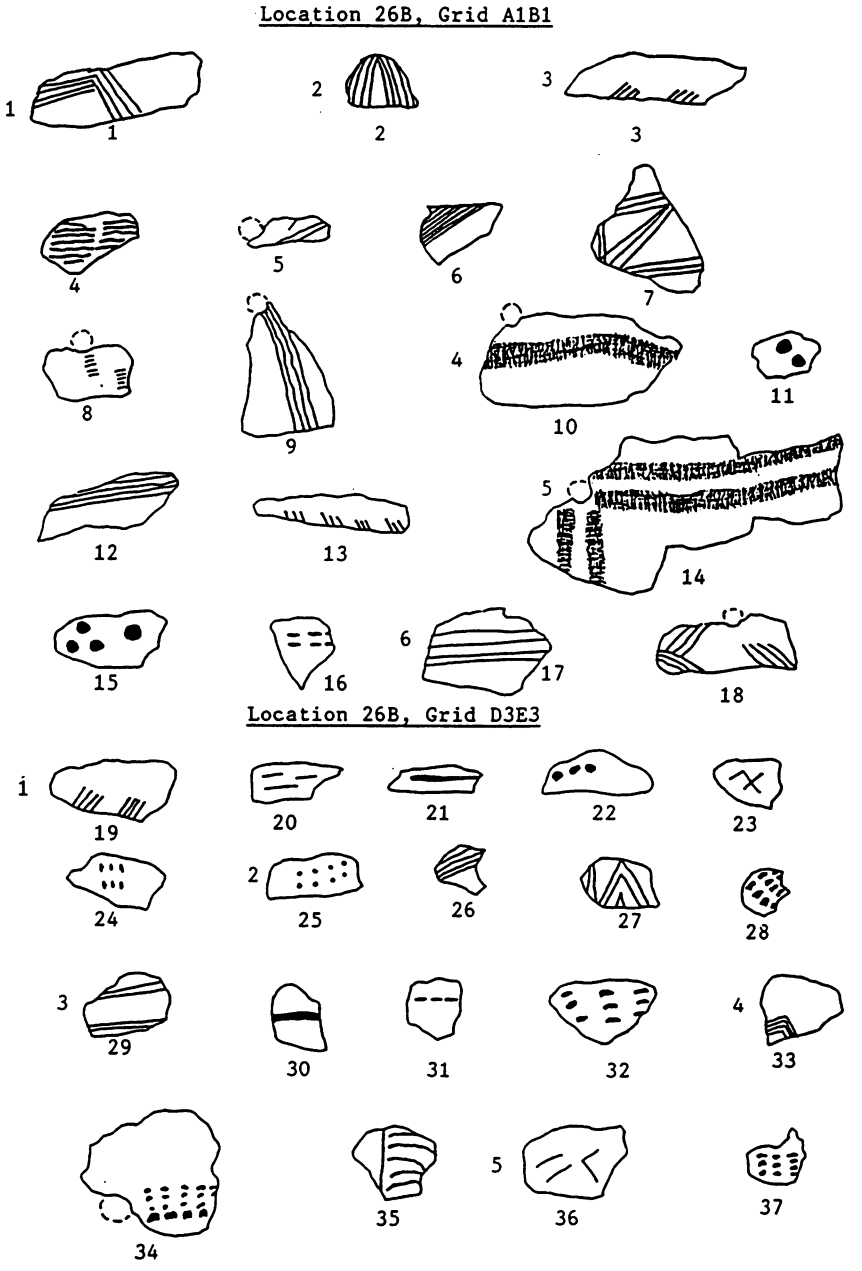

Figure 4. Decorated sherds from location B, site 26.

Figure 5. Decorated sherds from location C, site 26.

Galipaud (1985) notes this technique at WKO-142 (Koné), at WPT-148 (Engwe)--a neighboring site--and also in the extreme north at the Belep Islands. Frimigacci (1975) also reports shell impressing at KVO-003 (Vatcha, Île des Pins), WKO-014 (Koné), and in the north at NKM-001 (Boirra) and NBL-002 (Balabio). Even further north, Garanger (1971) identifies shell impressing on pottery from both the Solomon Islands and Vanuatu. Given both the extremely wide distribution of this decorative technique and its association with paddle-impressed pottery, it appears to be a fairly old technique.

In Figures 3 (nos. 2, 7, 8, 17, 21, 24), 4 (nos. 16, 21, 32, 37), and 5 (nos. 5, 7, 12, 17, 18, 25, 30) we see a variety of gouges with wide spatial and temporal distributions. Galipaud (1985) describes stylistically similar sherds ("discontinuous incisions") at WKO-143 (Koné), NBL-002 (Balabio), WPT-148 (Engwe) and at WPT-150 (l'Îlot Page). Frimigacci and Maitre (1981) also recovered gouged sherds in southeastern New Caledonia at site STY-005 (Yate). Richard and Mary Elizabeth Shutler (1961), describing Johnson's sherds from Tiop (Bougainville), note the similarity of gouged sherds found there to those recovered at site 26. Again, similarities between sherds recovered on the Solomon Islands and Vanuatu also display a stylistically similar gouged motif.

In Figures 3 (nos. 19, 26), 4 (nos. 1, 2, 3, 6, 9, 12, 13, 17, 18, 19, 26, 29, 33), and 5 (nos. 3, 15, 23, 32), sherds which can be broadly described as sharing parallel lines (straight, wavy, and disjunct) are illustrated. As previously noted, Johnson's surface collections from Tiop (Bougainville) show distinct similarities with the sherds recovered from site 26. Also, sherds from both the Solomon Islands and Vanuatu (Garanger 1971) display stylistic similarities. Specifically, sherds from Figure 4 (nos. 3, 7, 13, 18, 19, 27, 33) show marked similarities to what Garanger terms "Late Mangaasi" incised pottery dating from 2000 B.P. at Makura and Tongoa, and 1700 B.P. at Efate.

Sherds with suspension holes, illustrated by a broken circle, appear in Figures 3 (no. 13), 4, (nos . 5, 8, 9, 10, 14, 18, 34), and 5 (nos. 8, 13, 14, 22, 24). For Galipaud (1988), these holes represent a regional innovation restricted to late northern New Caledonia ceramics. This would appear to be the case, owing to an absence of suspension holes found in southern New Caledonia.

The remaining sherds appear to be idiosyncratic local innovations (Frimigacci 1975), with limited distributions. A noteworthy example of this is found in sherds displaying textile impressions, illustrated in Figures 4 (nos. 10, 14) and 5 (no. 27). I have found nothing in the literature describing a similar method of decoration elsewhere in New Caledonia. Due to the limited distribution of these sherds, it is difficult to view this technique as a local innovation. The depth of sherd no. 14 (Figure 4) places its occurrence at 24-30", according to Gifford and Shutler's artificial stratigraphy. Accumulation dates based upon radiocarbon dating of two sherds recovered from site 26 produce a date of roughly 800 B.P. for textile impressed sherds. The use of radiocarbon dates, yielded by Professor H.R. Crane's dating of Gifford and Shutler's sample (1956), as a basis for accumulation rates (6" per 125 years) is a somewhat dubious undertaking. First of all, site 26 is located on a promontory which juts out into the sea. While the site may be out of reach of wave action, it certainly is exposed to other sources of erosion (specifically, wind and rain). Secondly, it should be kept in mind that site 26 is situated upon a substrata of bedrock, not sand, producing a limited basis for drawing inferences regarding accumulation dates.

Conclusions

Depending upon the particular archaeologist who examines New Caledonian ceramics, one of several typologies may emerge. Pottery at site 26 is termed "Oundjo" by Green and Mitchell (1983), or "New Caledonian proper" of the "Mangaasi cultural group" by Frimigacci (1975). Without admitting allegiance, I will use the term Oundjo for the sake of convenience. One of several typologies proposed for New Caledonian ceramics was established by Daniel Frimigacci. He divides New Caledonian pottery into three principal traditions: (1) Lapita; (2) Paddle-impressed; and (3) the Melanesian cultural group, or Mangaasi. The last group has been well documented by Garanger (1972) in Vanuatu, and has been posited as the source for that New Caledonian pottery which falls outside of the Lapita tradition. Frimigacci further divided Melanesian cultural group, or Mangaasi, pottery into two subgroups: (1) Classical Mangaasi; and (2) New Caledonian proper. The first group includes pottery with distinctive incised geometric decorations, as well as pottery with appliqué (cords, nubbins, etc.). New Caledonian proper includes what are considered to be local variations, such as suspension holes, handles and other forms for holding the ware. It is within this category that the wares recovered at site 26 might be placed. Green and Mitchell (1983), while observing a distinction between Lapita and paddle-impressed style assemblages, lump later pottery styles in New Caledonia into the Oundjo style assemblage. After contact in the 17th Century, Green and Mitchell (following Golson [1972]) propose a distinction between northern and southern pottery based on differences in design as well as forms for holding pottery not unlike Frimigacci's.

Galipaud (1988) also proposes a north and south distinction at the onset of ceramics in the material record. He posits this distinction in the form of several new categories for prehistoric pottery. In the north, Galipaud inserts Balabio pottery (from the northern extreme of New Caledonia) as a transition form between the paddle impressed and Oundjo assemblages in an attempt to demonstrate continuity between the two. While Oundjo pottery is clearly the last ceramic ware to be produced by New Caledonian cultures, the above authors differ on when assemblages can first be recognized in the material record. Frimigacci (1975) dates Oundjo beginning at about 1000 B.P. Galipaud is in general agreement with Frimigacci, but pushes the date back about 100 years to 1100 B.P. In contrast, Green (1982) puts the origins of the Oundjo tradition back to about 1700 B.P., and posits no transitional ware such as Balabio.

Galipaud also argues for an increase in regional differentiation, beginning at about 2000 B.P., which resulted in increased cultural heterogeneity produced by several co-existing traditions within New Caledonia. Galipaud sees cultural continuity in the north based upon the permanence of the material culture objects, in contradiction with the appearance and disappearance of pottery types. This northern continuity (from stamped ribbed relief to Balabio to Oundjo) is based upon morphology as well as manufacturing technique. The suspension holes and simplification of form and decoration characteristic of ceramics at site 26, relative to Balabio pottery, are interpreted by Galipaud as an evolution marked by the emergence of a regional cultural identity. Green and Mitchell's reworking of New Caledonian cultural history (1983) would appear to confirm this theory, with northern designs occurring at EHI-050 (Dowalwoue), EHI-051 (Tiounde), EHI-052 (Ouapa), and ECA-044 (Nowe), all late in time and distinct from contemporary southern assemblages.

Given the broad occurrence of many of the sherds examined in this study, moderate regionalization of later northern New Caledonian ceramic wares seems likely. Further refinements in the temporal sequence will be required before unequivocal support for a theory of contemporaneous regionalization can be assumed.[1] The sherds analyzed at site 26 display both northern (suspension holes) and southern (*Cardium* shell impressions) characteristics as defined by the literature. This would seem to make sense in light of the linguistic evidence for regionalization within New Caledonia. While the typologies of ceramic traditions found within New Caledonia have in recent years become clearer, gaps still exist. It would seem that an expansion of excavations to include the interior of the island would constitute a logical first step towards filling those gaps. Also, detailed ethnographies would be indispensable in providing clues to New Caledonia's diverse past. Lastly, further reanalysis of the vast quantities of material culture recovered by Gifford and Shutler during their 1952 excavations will undoubtedly yield finer and more precise distinctions concerning the great ceramic traditions of New Caledonia.

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1. Editor's note: Such a refinement of the New Caledonian ceramic sequence has now been proposed by Sand (1995, 1996a). (PVK)