Lapita and non-Lapita ware during New Caledonia's first millennium of Austronesian settlement

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Introduction

New Caledonia forms the southernmost archipelago of the Melanesian chain. Its importance in the understanding of the peopling of the south-western Pacific has over the last 40 years been conducive to the development of archaeological research projects focusing for the most part on the characterisation of the first human colonisation of this region. The first dating of a site containing a characteristic dentate-stamped decoration was run after the excavation of a seaside site on the west coast of the Grande Terre (Mainland) of the archipelago, in a place called « Lapita » by American archaeologists E. Gifford and R. Shutler (1956). The discovery of large tumuli, dated between 13,000 and 4000 BP, was at the same time seen as indication of an old settlement of southern Melanesia by modern humans (Shutler and Shutler 1975).

Although different synthesis have been published over the years on the prehistoric chronology of New Caledonia (Frimigacci 1975; Galipaud 1988; Sand 1995a. See Sand 1995d for a synopsis), major points of analysis and their cultural issues still remain unclear. The aims of this paper are to analyse some of these questions and to present new data obtained during the last years by our local Department of Archaeology. The central focus will be on the ceramic chronology and its evolution during the first millennium of Austronesian presence, called the Koné period (Fig. 1) (Galipaud 1988; Sand 1995a: 63-94). The presentation will develop four points:

- (1) the dating of the first human settlement of New Caledonia;
- (2) a proposal for a short chronology of the Lapita series;
- (3) the chronology of the other ceramic traditions during the Koné period;
- (4) evolution of the ceramic chronology to the period beginning about 2000 BP.

I do not intend to present in detail all the recent archaeological data collected, already published in various forms (Galipaud 1996; Sand 1994, 1995a, c, 1996a, c, d, e). The scope is to give in a first part a general background to the Koné period, before a more focused study of the non-Lapita ware present during the first millennium of settlement. The analysis is intended to highlight the major trends of the chronology and to see how they can be interpreted in a reconstruction of the socio-cultural evolution of the Austronesian populations after first settlement.

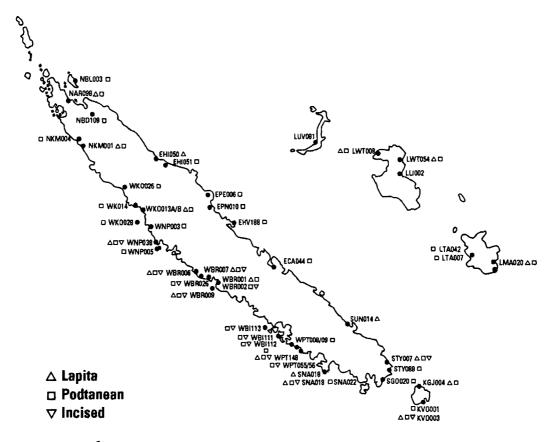


Figure 1
Major archaeological sites dated to the Koné period, defining the different ceramic traditions.

The unanswered questions of an old peopling of southern Melanesia

Still much debate exists on the dating of first human colonisation of the south of Melanesia. After the unexpected results of the Lapita Homeland Project in the Bismarck Archipelago, and the discovery of sites more than 30,000 years old (Allen *et al.* 1988; Pavlides and Gosden 1994), some authors have hypothesised that pre-Austronesian sites would soon be discovered in Vanuatu and New Caledonia. The significance of the dating of the tumuli remains unclear (Green and Mitchell 1983; Green 1988) but do not seem to be related to an old peopling of New Caledonia's archipelago (see Sand 1995a: 50-51 for a summary).

Although the possibility of an old settlement remains present (Gorecki 1996), the latest data obtained from archaeological programs conduced in southern Melanesia all show a fairly sudden human presence in the region after 3500 BP (Green 1991). The oldest dates obtained for two sites of the Grand Terre of New Caledonia, the Tiwi rockshelter SGO020 (level 14) dated to 3240± 220 BP (Beta-44650) (1510 cal BC)¹ and the dunesite WPT055 (TON-7) of Naïa (layer I) dated to 3165±120 BP (ANU-96) (1420 cal BC), have recently led Galipaud to propose a two-step settlement of the archipelago. The first arrival of populations, around 3500 BP, would have been characterised by groups producing paddle-impressed pottery of the Podtanéan tradition. These groups or other populations would have introduced, after 3000 BP, Lapita pottery, maybe from the east (Fiji-Western Polynesia) (Galipaud 1992b: 108). I have already presented in other publications (Sand 1995a: 67-73; 1996a: 47-49; 1996e: 116-117; in press) arguments against the use of these two dates for the definition of the beginning of the ceramic chronology of the archipelago. These arguments will not be presented again here. They show that until other dates are obtained from the same context, these early results must be used with caution.

First settlement of New Caledonia and the local chronology of Lapita ware

During the last three years, 12 different sites of the Koné period have been excavated or re-excavated. The scientific scope of these excavations was first to define more precisely the chronological boundaries and secondly the typological variety of the ceramic sequence during the Koné period. To achieve this goal, a fairly large number of new

¹ The dates run by the Department of Archaeology are presented with a C13 correction. All dates have been calibrated to BC/AD using the CALIB 3 program (Stuiver and Becker 1993).

dates has been run. The preliminary conclusions of this ongoing program show a very restricted time-period for the first occupation of the major sites of the archipelago. The individual chronologies for each site have been published elsewhere (e.g. Sand 1996c, 1996d, in press, sub.) and only a summary is proposed here. In chronological order, it seems that the oldest sites, with Lapita and Podtanean assemblages, appear in the north of the Grande Terre just before 3000 BP. Some sites of the south of the Grande Terre and on Ile des Pins are first occupied between 3000 and 2900 years BP, and the first ceramic sites of Lifou and Maré islands in the Loyalties are dated between 2850 and 2800 BP, although in this area the excavations are at their first stage.

A first general summary of the Lapita assemblage of New Caledonia published from this reseach program (Sand 1996e) shows the presence of a set of local characteristics in the design patterns, the ceramic forms (Fig. 2), the associated non-ceramic material. In a recent publication, Kirch (1997: 72-73) has proposed to identify, apart from a far Western, a Western and an Eastern Lapita, a southern Lapita group, comprising New Caledonia and maybe southern Vanuatu. Although the data on Vanuatu are still scarce, the data on New Caledonia show differences with either Western and Eastern Lapita, pointing to the existence of a southern regional Lapita series (Sand 1996e: 136-138) and though giving credit to the hypothesis of Kirch, this southern Lapita has still to be better defined, and the amount of new material under study should make this task possible in the next few years.

One major result of the new excavations is to indicate a rapid demise of the production of Lapita pottery and, depending on the geographic area, its disappearence after one to less than four centuries in all the sites. Some authors maintain the existence of Lapita

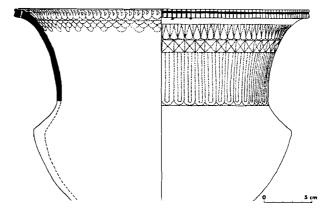


Figure 2 Reconstructed Lapita pot from site WKO013A of Lapita.

production in site NKM001 of Koumac up to around 1800 BP (Frimigacci 1980; Galipaud 1996: 304) but I suspect that these dates are from secondary context (Sand 1996e: 118-119). The nearly 1500 years of Lapita chronology supposed in New Caledonia (Kirch and Hunt 1988; Spriggs 1990) must be restricted to less than 500 years, between 2000-2500 BP.

Other ceramic assemblages at the beginning of the human settlement and diversification of the pottery traditions during the Koné period

The Lapita-associated ceramic series

The study of the sites with Lapita pottery shows the presence, in association with the characteristic dentate-stamped pots, of incised, paddle-impressed and shell-decorated ware (Galipaud 1988; Sand 1996e). These pots are part of the New Caledonian Lapita series and can be compared to the ceramic assemblages identified in other well-studied Lapita sites of island Melanesia (Green 1976; Kirch 1997).

The dating of sites without dentate-stamped Lapita pots

These Lapita ceramic series account for only part of the total pottery production of the first millennium of human colonisation of the archipelago. Although the Lapita sites are the best-dated assemblages of the New Caledonian sequence (Sand 1996a, table 1), the excavations of other sites dating to 2000-3000 BP have shown a great variety of the local ceramic sequences.

- Pots with triangular incised decorations (Fig. 3 a-b) different from the Lapita series are present, before the end of the Lapita occupation around 2700-2800 BP, in site KVO003 of St Maurice-Vatcha (Frimigacci 1975; Sand 1996d, e: 60-73).
- Level 6 of site STY007a in Yaté (southeast coast), characterised by paddle-impressed ware and incised sherds, has been dated to 2260±60 BP (Beta-53431, CAMS 5347) (370 cal BC) (Sand and Ouetcho 1993b).
- In the Tiwi rockshelter SGO020, the levels 13 to 16 dated to the Koné period comprise paddle-impressed sherds in association with triangular incised, non-Lapita pots (Galipaud 1987).
- On site WPT055 (TON-7) of Naïa on the southwest coast, the ceramic assemblage in

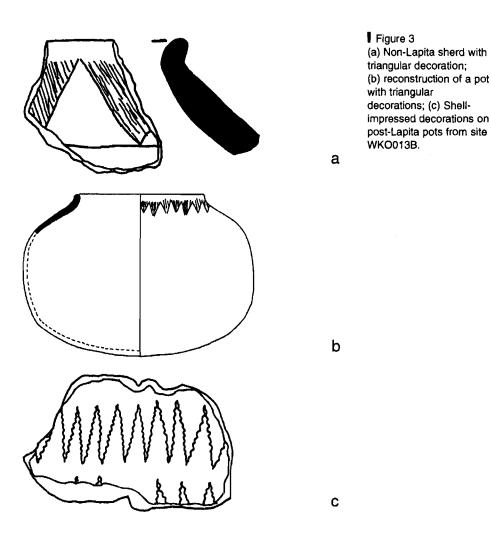
layers II, II+ and I, comprises paddle-impressed sherds and a large variety of incised and applied pottery (Smart 1969, n.d.; Vanderval n.d.; Green and Mitchell 1983). Level II+ has been dated to 2065±110 BP (ANU-97) (50 cal BC) (Smart 1969, nd).

- Another site of Naïa Bay has given an early date, site WPT056 (NOU-1) excavated by C. Smart (1969, nd). The only layer still present, characterised by paddle-impressed sherds, was dated to 2855±95 BP (ANU-259) (1000 cal BC). It clearly appears that there was a real « Lapita site » in the Naïa Bay² and so this area does not represent only a Podtanean settlement (Sand and Ouetcho 1993a; Sand 1994).
- On the neighboring site WPT148 of Ongoué, where some Lapita sherds are present, a layer with undecorated globular pots (Fig. 4) has been dated on marine shell to 2890±70 BP (Beta-62762) (540 cal BC). On the same site, an earth-oven in a layer with incised pottery has been dated to 2290±70 BP (Beta-61950) (380 cal BC) (Sand 1994: 56).
- A layer with paddle-impressed pottery on site WNP038 of Pindaï (west coast) has been dated by marine shell to 2800±70 BP (Beta-67062) (400 cal BC) and by charcoal to 2630±60 BP (Beta-67063, CAMS-9888) (800 cal BC) (Sand 1996e: 103-104). In another part of the same site, a layer with only incised and shell-impressed decorations on the sherds has been dated 2490±150 BP (Beta-85821) (515 cal BC) (Sand 1996e: 108-111). Lapita sherds have been found in surface collection during sand-quaries in this area.
- Level B of site WKO013B of Lapita, containing only shell-decorated sherds in primary depositionnal context (Fig. 3c), has been dated by marine shell to 2870±70 BP (Beta-59964) (510 cal BC) and by charcoal to 2660±40 BP (Beta-92762, AMS (Oxford) (800 cal BC) (Sand 1996e: 32-33, sub.).
- The lowest layers of rockshelter NKM004 in the Koumac valley (north coast) have been dated to 2690 ± 90 BP (Beta-72826) (810 cal BC) at 123 cm, and 2860 ± 90 BP (Beta-69688) (1000 cal BC) at 103 cm (Sémah *et al.* 1995). The ceramic assemblage is mostly characterised by paddle-impressed ware.
- The basal layer of level F in the rockshelter LWT008 of Hnajoisisi on the north-west coast of Lifou island (Loyalties), containing Lapita but also incised and shell-impressed sherds, has been dated to 2710±60 BP (Beta-88506, CAMS) (815 cal BC). The next layer of level F, containing only paddle-impressed ware, has been dated to 2760±60 BP (Beta-80045) (835 cal BC) (Sand 1995c: 15-26).

² The question of the presence of an area with a fairly large amount of dentate-stamped Lapita sherds in the Naïa bay has for some times now been questioned (see Galipaud 1996: 297). Although Smart did not excavate in this location, the compilation of the data on this matter now clearly points to the former existence of a "real" Lapita site in Naïa, identified by L. Chevalier (Chevalier, pers. comm. 1993; New Caledonian Museum archives). This material was mixed with Lapita sherds from the site of Vatcha in the Nouméa Museum.

The Podtanéan tradition

All these dates indicate the presence of other ceramic traditions than simply the Lapita series in the period 2000-3000 BP. The most widespread and best known is the paddle-impressed tradition (Podtanéan) (Fig. 5), mostly characterised by ribbed motifs of various size covering partly or completely the vessel, and originally part of the Lapita series. Its presence in relation to Lapita pottery, from the beginning of the sequence around 3000 BP (Sand 1996a: 49-50), is indicated for example in the stratigraphies of site KVO003 of Vatcha, WKO013A/B of Lapita and LWT008 of Hnajoisisi, with a few Podtanéan sherds in the lowest levels. Archaeologically, the two ceramic traditions are



part of the same cultural sphere (Frimigacci 1981; Galipaud 1990; Sand 1995a: 77-78). Podtanéan pottery, which is thinner, better fired, harder and of more simple forms than Lapita, with mostly out-curved rims and low carination (Fig. 6), was probably the everyday ceramic at first settlement (Galipaud 1992a; Sand 1995d: 32).

The short Lapita chronology for New Caledonia proposed, leads me to question the systematic chronological relation supposed for Lapita and neighboring Podtanéan sites (Galipaud 1990). I suspect that most of the archaeological layers with paddle-impressed sherds are not contemporaneous with the Lapita occupation but represent later habitation areas, like on site WBR001 of Nessadiou for example (Sand 1996e: 100). In St Maurice-Vatcha site KVO003, the very few post-Lapita remains do not allow definition of the evolution of the ceramic chronology, but looking at the Naïa-Ongoué sites, Podtanéan is clearly one of the major ceramic traditions during most of the period 2000-3000 BP, Lapita disappearing rapidly, probably after just one or two centuries (Sand 1994).

The end of the production of Podtanéan pottery is for the moment difficult to define and may have varied from one region to another. The results obtained from rockshelter excavations in Lifou and Maré give dates of 1370±60 BP (Beta-88505) (AD 680 cal) for the limit between level D and E in site LWT008 of Hnajoisisi (Sand 1995c, p. 24), 1850±60 BP (Beta-82662, CAMS 20796) (AD 235 cal) and 1580±60 BP (Beta-89086) (AD 545 cal) for site LTA042 of Peete (Sand 1995c: 58). In all these layers, paddle-impressed sherds with mineral inclusions characteristic of the Grande Terre are present.

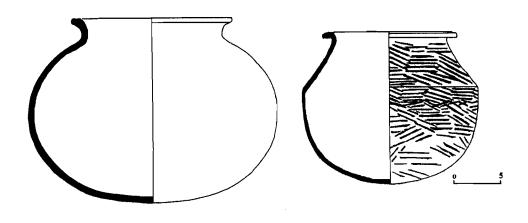
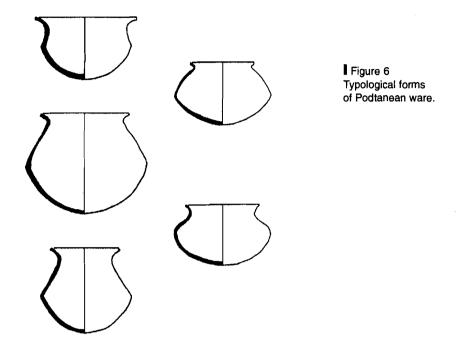


Figure 4
Non-decorated pot from site
WPT148 of Ongoué.

Figure 5
Example of Podtanean pottery from site LTA037 of Hnenigec.



These results seem to indicate that Podtanéan ware was still made somewhere on Grande Terre until about 1600 BP. Without going too far for this paper, these data are interesting on a regional level, showing the on-going production of paddle-impressed pottery in New Caledonia when this tradition became wide-spread in Fiji at the beginning of the Navatu phase (Frost 1979; Hunt 1987). Although carved-paddle-impressed pots are present at the beginning of the ceramic chronology in the Fiji-Western Polynesia area (Hunt 1980; Kirch 1988; Davidson et al. 1990; Sand 1992), some authors have proposed to see the ceramic change characteristic of the beginning of the Navatu phase in Fiji around 2100 BP as representing new arrivals of people from the west (Frost 1979: 78-80). Interestingly, this period around the time of Christ marks in the south of New Caledonia a major ceramic evolution and on Maré island the appearance of fortifications (Sand 1996b). This may indicate a time of two-way relations between some areas of New Caledonia and the west of Fiji (Sand 1995a: 125; 1996b; 41) and could explain in part for the occurence in some later Naïa-Oundjo sites (last two millennia BP) of cross-relief and spot-relief paddle-impressed decorations (Frimigacci 1981; Sand 1995b).

The Puen tradition

In the south of Grande Terre, Lapita seem to be replaced quickly (maybe after just one ore two centuries in some areas) by incised pots. I see no point where a direct typological link can be identified between these pots and the Lapita series and I have proposed to group these ceramics into the "Puen Tradition" (Sand 1995a: 85-91). Sherds with non-Lapita incised decoration appear in the bottom layers of St Maurice-Vatcha and Naïa (level I of site WPT055) and the start of their development can though be dated to before 2700-2800 BP. Human groups of the south of the archipelago produced mostly small ovular pots (main diameter 20-30 cm), with out-curved rims, and various forms of small plates (Fig. 7). Although the principal decorations of the Puen tradition are formed by chevrons and triangles located under the rim, a whole set of incised linear decorations and regular appliqué decorations are also present (Fig. 8). Unfortunately, most of the sites containing these incised sherds and located around the St-Vincent Bay on the southwest coast have not been properly excavated and much work remains to be done to better characterise the Puen ceramic tradition.

Other regional ceramic series

In the center of Grande Terre's west coast, apart from the chevron decorations (Frimigacci and Siorat 1988), paddle-impressions are present on globular or little carinated pots with fine incisions (Fig. 9) or shell impressions. Some of the motifs listed in these two traditions are related to Lapita motifs, but other are clearly different.

A unique type of decoration has been identified on site WNP038 of Pindaï and on site WBR006 of Temroc (west coast), with particular incised and shell-impressed decorations on in-curved pots (Fig. 10) (Sand 1996e: 109-110). Some of these decorations may have been made by cordmarks, as is clearly identified on one sherd from site WPT148 of Ongoué (Sand 1995a, Fig. 51).

Few data are published for the north of the Grande Terre (Frimigacci 1975; Galipaud 1988), but surface collections show the presence of pots with out-curved rims and shell decorations (Fig. 11).

The data on the Loyalty Islands seem to indicate that these two decorative traditions, fine incisions and shell impressions (Fig. 12), were exported up to Lifou and Maré. This may indicate production centers on the east coast of Grande Terre, which remains for the moment some kind of archaeological "no-man's-land", no precise data having been published since Gifford and Shutler in 1956.

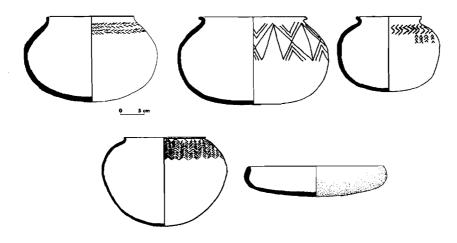


Figure 7
Typological forms of Puen ware.

Discussion

The data summarized here show that after first settlement around 3000 BP by human groups producing Lapita ceramic series, the different comunities of Grande Terre and the surrounding islands have rapidly diversified their ceramic traditions. Some of these traditions directly evolved from the Lapita series, such as the shell-impressed ware. Others appeared before the disappearance of Lapita, specially the chevron and triangular incised ware (Puen tradition). If a general cultural continuum during the Koné period still seems identifiable, more important internal evolutions than first suspected (Galipaud 1992a) are now clearly apparent. In particular, the cultural links between Lapita and Puen are not yet clearly established and their significance not understood (Sand 1996d: 139-141).

This poses some important questions regarding the origin of the incised non-Lapita traditions of southern Melanesia and especially those related to what is commonly referred as Mangaasi. Some decorative chevrons and triangle patterns are similar between southern Grande Terre and central Vanuatu, although variations occur and the Mangaasi design are much more complex. Some ceramic forms can also be compared, although the Mangaasi sherds are thicker than the Puen sherds and relate more to the later Plum wares. In central Vanuatu, the appearance of Mangaasi is dated around 2650 BP (Garanger 1971, 1972). We now have clear indications of the existence in southern New Caledonia of chevron and non-Lapita incised pots two or maybe three centuries before



■ Figure 8 Variations of incised decorations on pots from the Puen tradition on the South-West coast of Grande Terre.



Figure 9 □ Incised and paddle-impressed pot found in site WBR006 of Temroc.

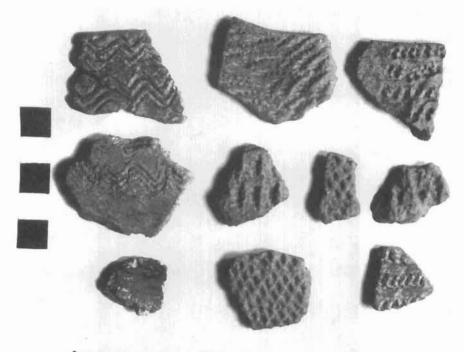
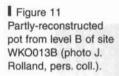
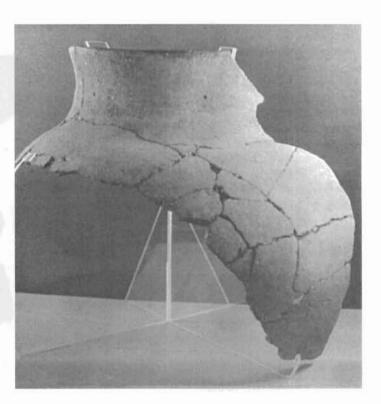


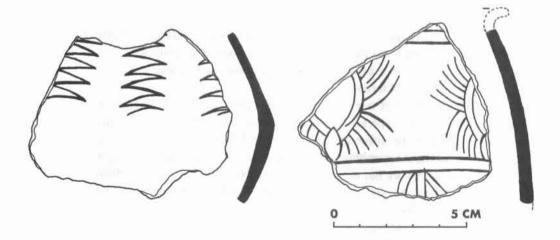
Figure 10 Incised and impressed sherds from site WNP038 of Pindaï.

this date, but clearly not for the moment in northern Grande Terre and specially in the Loyalty Islands, which are located geographically between these two areas of production. These data lead to a general questioning of the significance of these incised and applied ware in cultural terms:

- Does the appearance of non-Lapita incised pottery traditions in southern Melanesia after first settlement represent separate cultural evolutions, without major mutual influences between the different archipelagoes? This would illustrate the argument of M. Spriggs that these assemblages "were 'successors' in the sense of dropping out early from the Lapita network but deriving from it (1991: 307)" and so that "there was basic continuity between Lapita and later cultures in Island Melanesia, as there was in Polynesia (1991: 306)".
- Or are the Puen tradition and Vanuatu's Mangaasi of the same origin, characterising the expansion of a supposed non-Lapita derived "Melanesian" complex not yet precisely dated? This would match the ideas of P. Gorecki, who proposes that "these non-Lapita traditions may not belong to the Austronesian culture but could be an outcome of that. Melanesian expansion into the Pacific (1992: 42)".







I Figure 12
Examples of incised and shell-impressed sherds found on Maré island.

Although no definite choice can be made at this stage of the analysis between these two options, it appears that a few centuries after settlement of southern Melanesia, two rather different cultural entities had formed in New Caledonia (Fig. 13):

- one, comprising the north of Grande Terre and the Loyalties, whose roots remained linked to the evolutions of the Lapita ceramic series, mainly characterised by the multiplication of fine incised and shell-impressed decorations on pots related to the early Podtanéan ware:
- and the other, comprising the south of Grande Terre, where Lapita was rapidly replaced by more simple and more crudely incised ware, whose origins remain unclear but could be linked to as new cultural influence. Podtanéan is identified in this region on non-decorated pots and by the paddle-impressed technique found on some Puen, incised, shell-impressed pots.

The end of the Koné period and its cultural significance

The diversification of the ceramic traditions during the period 2000-3000 BP, as identified in the preceding pages, is probably indicative of a significant population grouth. The establishment of sites along all the coasts and the first colonisation of some deep valleys a few centuries after first settlement (Sand and Ouetcho 1993c; Sand 1996f) led logically to the development of regional cultural entities (Sand 1995a: 103-115). Around the time of Christ, Lapita had probably been completely gone in New Caledonia for more than 500 years.

The divergence of the ceramic traditions identified during the Koné period becomes totally apparent at the begining of the next ceramic period, divided into Naïa for the south and Oundjo for the north (Galipaud 1988). In the south of Grande Terre, we see the development of various typological forms of handled pots (Plum tradition) with incised and chevron decorations, clearly related to the Puen tradition (Sand 1995a: 118-127) and whose links with Mangaasi are apparent. These stylistic links with Vanuatu are also evident in the development of incised decorations on oval pots during the last millennium BP in the south of Grande Terre, with the Nera tradition (Sand and Ouetcho 1992; Sand 1995a: 150-155). In the far north of Grande Terre, the Balabio tradition of fine oval pots seems to be related to the early Podtanéan tradition and its evolutions (Galipaud 1992a), reinforcing the view of the central importance of this ware, issued from the Lapita series, in this part of the archipelago during all the Koné period.

The typological divergence of the two geographical areas is complete after one millennium of settlement (Fig. 14). Archaeological data seems to show, around the same per-

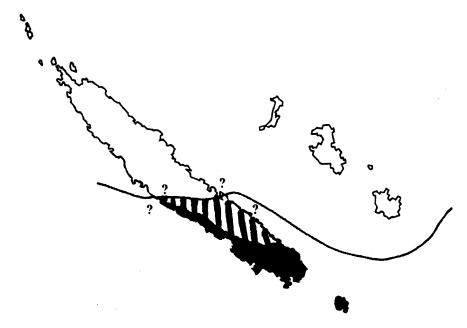


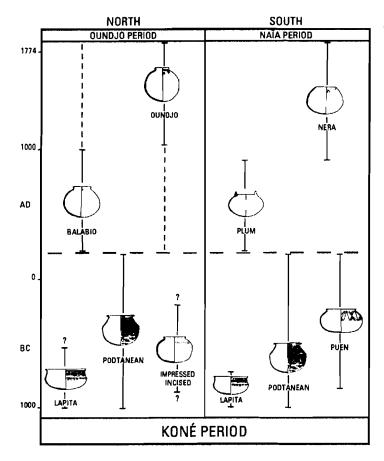
Figure 13
Hypothetical division between the two majors ceramic entities at the end of the Koné period.

iod, a diminishing of the exchange networks between Grande Terre and the Loyalty Islands (Sand 1995c: 89-90), identified through the import in Lifou and Maré of pots and flaked and pollished stones from the Grande Terre. This may be linked to demographic pressure in the smaller islands, political changes and/or the arrival of new groups of people, maybe from Fiji (Sand 1996b). At the beginning of the Naïa-Oundjo period around the time of Christ, New Caledonia is ready to develop its own particular socio-cultural characteristics.

Conclusion

The scope of this paper was to show, through the presentation of a variety of sites, the important diversification of New Caledonia's ceramic chronology during the first millennium after settlement by Austronesian populations around 3000 BP. New data indi-

cate that the hypothesis of a relatively homogeneous and static chronology presented until now (Galipaud 1992a, 1996) is incomplete. Due to lack of excavations and to different depositional processes limiting site visibility, the chronology of the east coast of Grande Terre remains wholly unknown. Nevertheless, one major achevement of the recent programs conducted by the Departement of Archaeology is to show that, contrary to what was suposed until now (Galipaud 1996: 303-304; Frimigacci 1996), the Lapita ceramic production is short: a Lapita chronology of over 1000 years in New Caledonia is incorrect. Lapita is clearly linked to the first phase of colonisation and seem to disappear between 2600-2800 BP in the various areas. This conclusion must be kept in mind when analysing the role and use of Lapita pots in the Austronesian society. It seems that



■ Figure 14 Summarised ceramic chronology of New Caledonia.

as soon as the first colonisation was acheved, Lapita was of no use any more. In this regard, this short Lapita chronology is comparable to the one now identified in the Fiji-Western Polynesia area (Sand 1992; Shutler *et al.* 1994).

In all the well-excavated sites of the archipelago, some paddle-impressed Podtanean sherds are found in the same levels as dentate-stamped Lapita ware and are eaven sometimes present on the same pots. Petrographic studies have shown the similarity between these two traditions (Galipaud 1990), indicating a unique cultural origin. The development of different ceramic traditions during the period 2000-3000 BP, with incised, appliqué, shell-impressed decorations, probably echoes a rapid population growth and divergent cultural evolutions/choices between groups. Regional relations within southern Melanesia seem to appear early, specially with Vanuatu through the incised potteries and later with Fiji through the paddle-impressed potteries. The significance of these relations still has to be analysed at a more cultural and evolutionary level, specially in conjunction with linguistic studies on the relationships between southern Vanuatu and New Caledonia (see Lynch this volume). At a first step in this direction, we can identify the early development of two different cultural strategies after first settlement of New Caledonia, which led to two spatially differentiated ceramic periods during the last two millennia BP (Galipaud 1992a; Sand 1996a).

Ceramics have clearly still a lot of things to say on cultural evolution and diversification in southern Melanesia during prehistory: the beautifully dentate-stamped decorated Lapita pots, that represent the beginning of the sequence, are only a small and very short-lived part of this complicated puzzle.

Acknowledgements

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