

STRUCTURAL REMAINS AS MARKERS OF COMPLEX SOCIETIES IN SOUTHERN MELANESIA DURING PREHISTORY: THE CASE OF THE MONUMENTAL FORTS OF MARÉ ISLAND (NEW CALEDONIA)

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ABSTRACT

Since the beginning of European exploration of the Pacific from the 18th century, Western observers have found important differences of social organization between the geographical groups of Micronesia-Polynesia on the one hand and of Melanesia on the other. Anthropological studies have reinforced this apparent difference, tending to show in the west relatively simple and egalitarian organizations, whereas in the east the social structures appear to have been hierarchical, sometimes resulting in strong centralized systems comparable to proto-states (Sahlins 1968). Archaeological research carried out in both Polynesia and Micronesia has shown that the presence of a strong power may be identified by the building of monumental structures (Cordy 1985). Paradoxically, there seem to be far fewer of these structures in the islands of the Melanesian crescent. Archaeological surveys currently being carried in Vanuatu and in New Caledonia, leading to the discovery of several types of monumental structure, indicate that this impression is mainly due to a lack of research. The monumental structures of Maré are discussed in this paper and raise questions about the validity of the above differentiation.

INTRODUCTION

Within Polynesia, visible signs of social authority via the command of large numbers of workers are to be seen in the building of monumental tombs (Kirch 1980, 1988; Spenneman 1989), of large ceremonial or house

platforms, of religious centers or defensive complexes. Archaeological studies have shown the diversity of these structures. In addition to the statues (*moai*) on Easter Island (McCoy 1979; Beardsley, this volume), one has the stone platform structures of central and eastern Polynesia (Green *et al.* 1967), the fortifications of Western Polynesia (Green and Davidson 1974; Best 1993) and of New Zealand (Davidson 1984), and the monumental structures of Micronesia (Cordy 1982). For Melanesia, this paper will introduce the monumental structures of Maré Island (Loyalty Islands).

GEOGRAPHICAL LOCATION AND SCOPE OF THE STUDY

New Caledonia forms the southern archipelago of the Melanesian crescent. Between 1992 and 1994, in the context of a program for surveying the archaeological heritage of the Loyalty Islands (Sand, Bolé and Ouetcho 1994; Sand and Ouetcho 1992, 1993a), the Territorial Archaeology Department carried out a study and part-restoration of two monumental structures on Maré Island. These structures are situated on lands of the Hnaenedre (La Roche) tribe, on the central plateau of this elevated coral island, which has an average length of 35 km and a maximum elevation of 140 m (Fig. 1).

The presence of monumental structures on Maré was first pointed out during the 1940s by the missionary Father Dubois (O'Reilly 1950). The first brief survey was done in 1967, allowing the extent of the two fortified complexes described below to be noted. A date on shell was obtained at that time using samples from inside a wall, with a result of 1370±100 BP (Dubois 1970: 58-59).

SAND, MONUMENTAL FORTS OF MARE ISLAND

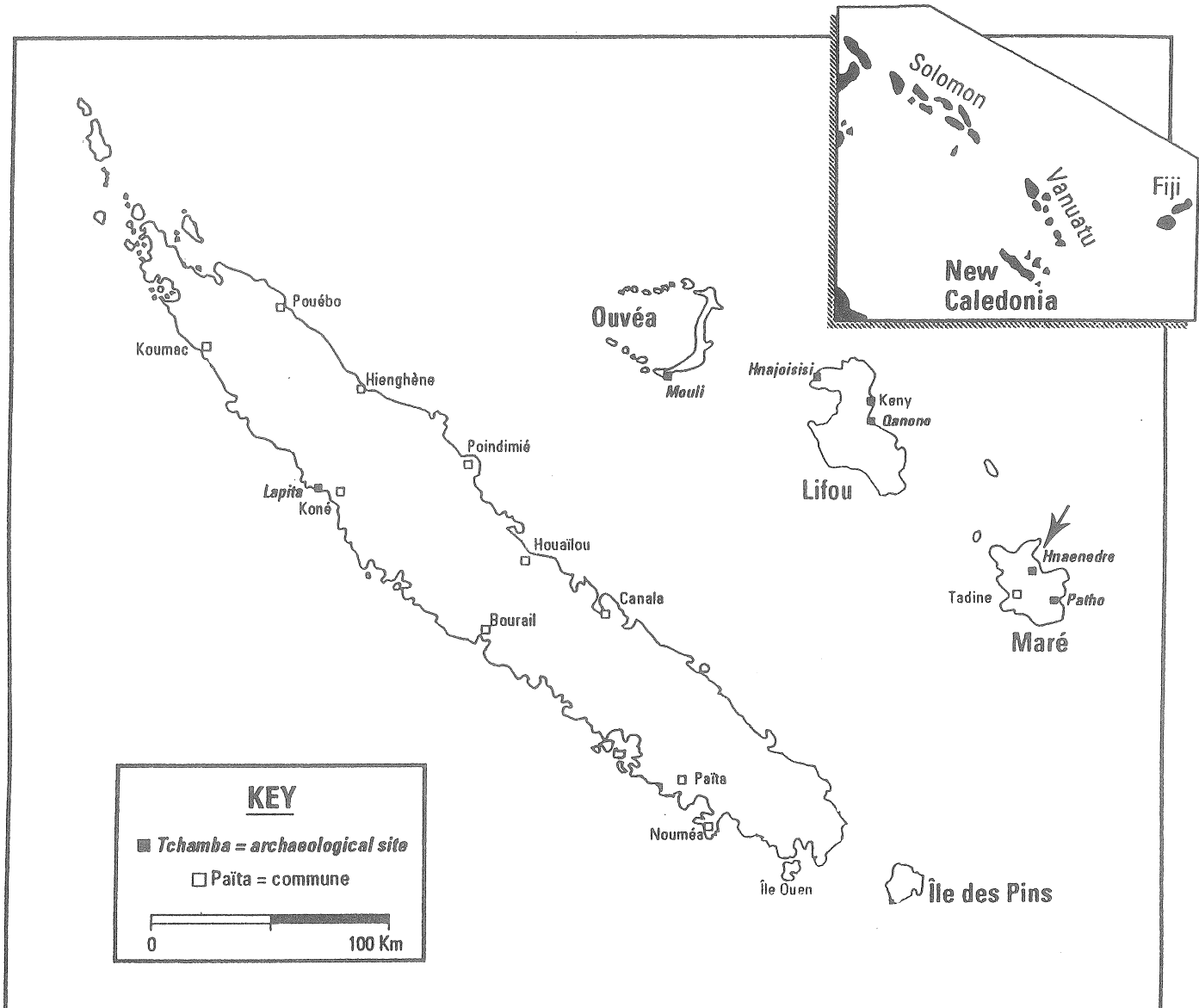


Figure 1: Location of the Hnaenedre tribe on Maré Island.

ORAL TRADITION

Father Dubois, in the context of his ethnohistorical studies on Maré, recorded a number of oral accounts about these sites. These appear to link the construction of the walls to the early period of the Eletok, who had apparently ruled Maré from time immemorial with a centralized political system, before being defeated and massacred by groups who had settled more recently on the island (Dubois 1976). The main account of the

building of the fortified sites was given to Dubois by Great-Chief Jean Sinewami of the La Roche chiefdom:

Long ago the spirits of Maré - the *mo-yaac* - reached an agreement that each of their groups should make a war refuge, *hna-bo*. It was a kind of competition to see who could make the most impressive refuge. Work was to begin in the morning. The victors would announce the end of their work with triumphant shouts. But everyone cheated. The biggest cheats of all were the *mo-yaac* of La Roche, the *si-Puan*. They

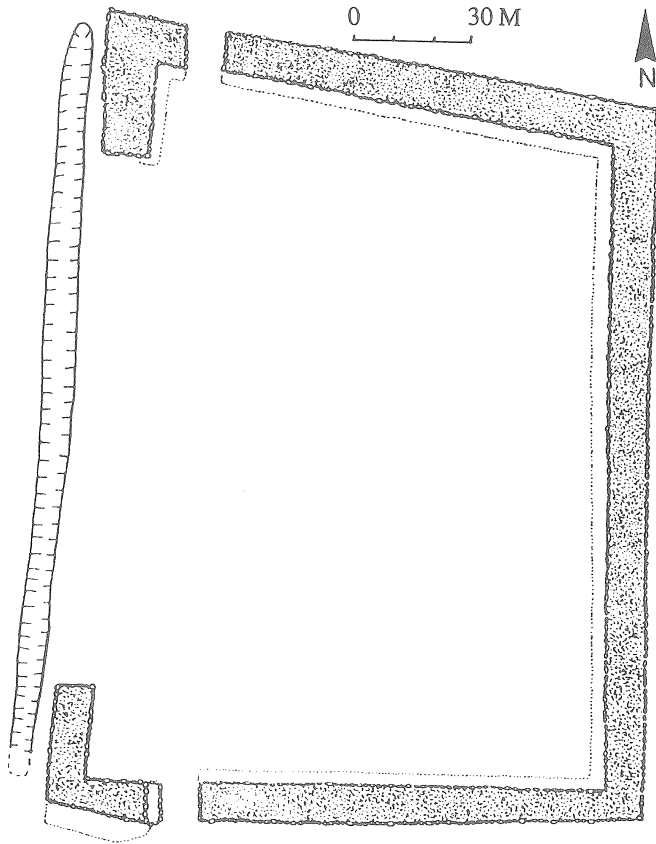


Figure 2: Plan of structure LMA016, Hnakudotit.

started as soon as night fell. At cock-crow, some of them took a rest while others continued. Soon the work was almost finished. They waited for the morning star to rise. They went back to work, and at first light the building was finished. The si-Puan uttered yells to proclaim their triumph. The other spirits had hardly started. They stopped, discouraged. This is why the fortress of La Roche is the biggest on Maré. The others remained at half-height, such as the rock of the si-Asu at Wakoné. Others are rough shapes, like Hna-kudo-tit(i) "where they struck the rocks" and Gi no Vaninetit(i) "the right-hand wall", as well as the Hna-kudo-tit(i) of the si-Tarere. (Dubois 1970: 55-56)

RECENT STUDIES OF THE HNAENEDRE SITES

The surveys done in 1967 and 1992 give information on the method of construction of these two structures (Sand and Ouetcho 1993b). The restoration of the north-west area of Hnakudotit in 1993 and 1994 has also assisted the research.

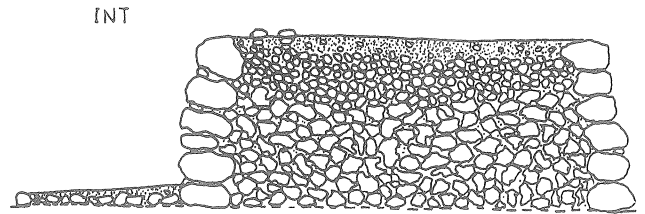


Figure 3: Section of a Hnakudotit wall.
(width of wall at base is 12 m)

Hnakudotit

The first monumental structure studied is called Hnakudotit ("where they struck the rocks": site NC.LMA016). It is a quadrilateral formed by walls around three sides, with two L-shaped extensions (Fig. 2). There are two end openings, one to the north and one to the south, each about 10 meters wide. The structure is about 180 m in length along its north-south axis, by 140 m to 145 m along its east-west axis.

Although many parts of the wall have now partially collapsed, the external faces were formed by the piling up of large blocks of round- or rectangular-shaped coral fashioned by fire in order to cut the sharp edges (Dubois 1970), arranged in more-or-less even rows on five or six courses. The two parallel faces were filled with untreated blocks of coral, with small pebbles at the top (Fig. 3).

The complete walls average between 10 m and 11.5 m in width. They must originally have stood between 4 m and 4.5 m high, except in the southeast section where the structure does not appear to have been finished. A low platform about 50 cm high and 4 m wide runs around the entire inner circumference of the walls of the structure.

The sizes of the coral blocks used for the construction of the wall, which has a total length of 500 m, vary according to their location. The inner fill used the smallest blocks, which average 75 cm long by 60 high (mean volume 0.3 m³). The external walls were made with blocks averaging 90 cm long by 75 high, but sometimes more than 150 cm (mean volume 0.6 m³). The largest blocks still visible are to be found in the sections of the walls forming the openings, perhaps as a mark of prestige, averaging 120 cm long by 90 high (mean volume 1.1 m³). Some blocks are more than 240 cm long.

The presence of alignments of wedging blocks observed at the top of the well-preserved sections of the walls is perhaps an indication that wooden palisades

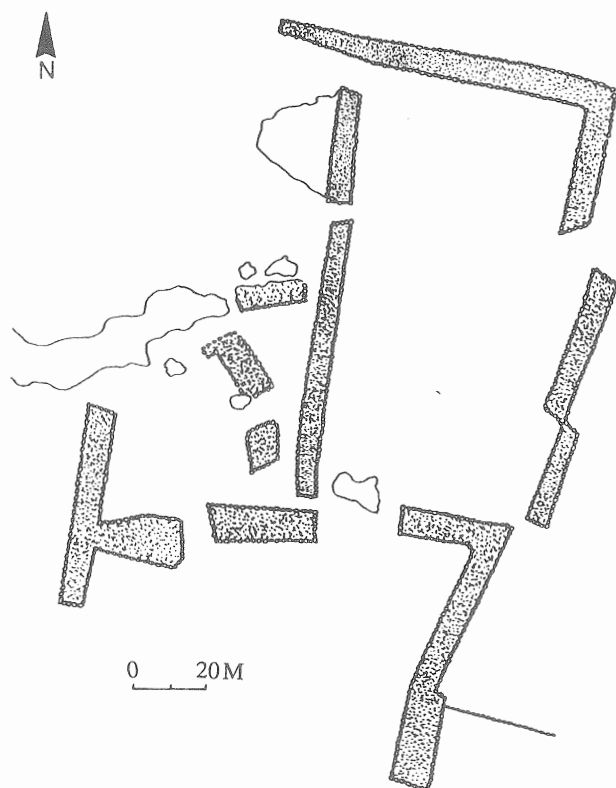


Figure 4: Plan of structure LMA017, Waninetit.

extended the height of the walls, especially near the openings.

The plan of Hnakudotit clearly shows that the work was incomplete in the western part because a section of the wall is missing. The surveys of the site have nevertheless shown the existence, down the entire western side of the structure and about 2-3 m in front of it, of an area about 80 cm deep and averaging 12 m in width. An excavation in this feature showed clear traces of erosion of the coral substrate, indicating that these furrows were originally formed by the rubbing of the thousands of coral blocks rolled towards the structure. The presence of this ditch parallel with the walls, placed precisely in front of the unfinished part of the enclosure, may also indicate that the western part of the structure was fortified by a wooden palisade with a small ditch in front of it. Possible posthole alignments were found in this area during excavation.

Two excavations have been conducted on Hnakudotit. The first, at the base of the wall of the north entrance, showed that the first coral blocks had been placed straight on to the coralline soil. The second excavation,

cut through the center of the upper platform of the wall, made it possible to clarify the internal stratigraphy of the filling, already partially observed in collapsed areas. The top 65 cm of the fill consists of pebbles and small blocks of coral. Below this, uncut coral blocks become larger, sometimes exceeding 80 kg in weight. Due to danger of collapse the wall excavation was halted at a depth of 230 cm without reaching the base of the wall. In all, it can be estimated that, for a wall more than 500 m in length, a total volume of around 20,000 m³ of coral blocks was laid in place.

Waninetit

About 500 m northwest of Hnakudotit is a second fortified structure called Waninetit, "the right-hand wall" (site NC.LMA017). The plan of this site is more complex than that of Hnakudotit. It consists of two main enclosures (Fig. 4). The larger eastern one measures around 110 m in length by 65 m in width. It is bounded on all sides by walls 6 m to 8 m wide and 3.5 m to 4 m high. This enclosure is accessible via six openings. The sizes of the blocks would suggest that the southern opening was the main one.

A second enclosure to the west forms a quadrilateral 50 m by 50 m. Its northern defence is formed almost entirely by a small cliff of natural uplifted coral which extends for several hundred meters beyond the site to the west. The southern and western defences are formed by walls 7 m to 12 m wide by 2 m to 4 m high. This enclosure is pierced by five openings and has two raised platforms in its central section.

It seems that extensions at Waninetit were planned because there are several perfectly constructed wall extensions to the north, southwest and south. The latter wall reaches a length of 70 m. The ends of the south and southwest walls are perfectly bonded, seeming to exclude a sudden abandonment of the construction.

Unlike Hnakudotit, the sizes of the coral blocks do not vary between wall complexes, except for the monumental south opening. In general, the coral blocks and wall heights are smaller at Waninetit than at Hnakudotit.

The date of Hnakudotit

Burnt shells and burnt coral were collected at regular intervals throughout the stratigraphy of the main wall excavation at Hnakudotit. According to Father Dubois (1970), the food scraps of the workers were tossed into the walls of the monument during construction. The external appearance of the shells certainly suggests a non-fossil age and it is reasonable to suppose that they



Figure 5: The north entrance into Hnakudotit after restoration.

are associated with the period of construction of the monument.

Strombus sp. shells, collected within the wall at the base of the excavation at a depth of 230 cm, have been dated to 2190 ± 50 BP (Beta-3233). After C13 correction, with a marine reservoir of $\Delta R = 100 \pm 24$, this calibrates to AD 150(290)430 at 2 sigma (Stuiver and Becker 1993). In order to confirm this date, two further samples of *Strombus* sp. and *Anadara scapha* shell, collected in the deep sections of the north wall restored in 1993, have also been dated. The results are 2290 ± 80 BP (Beta-68324, AD 1(190)400 after C13 correction and calibration) and 2250 ± 50 BP (Beta-68325, AD 80(230)400) (Sand and Ouetcho 1993a). The calibration of marine shell dates still presents many problems, but the consistency of the three results makes it possible to conclude that Hnakudotit was probably built during the first half of the first millennium AD.

DISCUSSION

The size and method of construction of these sites indicates that they must have had a defensive role, situated as they are in a large plain without any natural refuge. The extensions at Waninetit indicate that this structure was probably not built all at once, but had successive additions.

The dating of Hnakudotit to the first half of the first millennium AD raises many questions relating to the prehistory of New Caledonia. It seems that the populations of the central plain of Maré must have feared repeated attacks from outside. Elsewhere (Sand 1995a), I have put forward the hypothesis of relations between Fiji and the New Caledonian archipelago at this period, perhaps leading to the arrival of new population groups. The very notion of refuge or fortification required the completion of the structures as rapidly as possible, a fact that is clearly evident in all the oral traditions about these sites. The impressive size of these fortified complexes also indicates a large population.

In order to muster a workforce to build monuments on this scale it would be necessary to have a strong centralizing political power, able to bring possible recalcitrants into line and to demand collective work. The blocks of fossilized coral were brought from quarries several kilometers from the sites and some weigh more than 2 tonnes. It was necessary to provision the workers, especially with food from the sea 3 km away from Hnaenedre. The rapid "construction" of the "fort" at La Roche by the *si-Puan* is understandable; the La Roche "fort" is located on top of a flat coral peak, 20 m above the plain and 500 m diameter. The builders only had to defend a narrow alleyway giving access to the top of the natural elevation.

The notion of prestige is clearly evident in the oral traditions, which identify a form of power more similar to that of a pyramidal-type hierarchical society (Salhins 1968) than to the traditional semi-egalitarian societies known in New Caledonia (Guiart 1983). The traditions of Maré refer to the *Eletok* as the leaders of a centralised form of chiefdom, before their overthrow and massacre, perhaps at the beginning of the 19th century (Guiart 1963: 323). It does not seem possible to prove from the archaeological data that the *Eletok* can be connected with the construction, more than 1500 years ago, of the monumental complexes in the La Roche region. But the indication in oral tradition that a strong power once existed on Maré makes it possible to view in a new way the evolution of the early societies of New Caledonia. These societies would not have been static in their organisation (Guiart 1983) but would have passed through various more-or-less abrupt phases of development.

The period of construction of the fortified structures at Hnaenedre probably reveals one of these distinctive phases of development. According to archaeological data the Loyalty Islands were settled around 1000 BC (Sand 1995a) by populations of Austronesian origin. During the first millennium of settlement, regular relations with New Caledonia are identifiable through the trade in artefacts (Sand 1995b). During this so-called *Koné* period (equated with *Lapita* elsewhere in Melanesia), which ended at the beginning of the first millennium AD, most areas suitable for habitation and cultivation in the Loyalty Islands were probably settled.

It is suggested that once the vast majority of these areas were occupied, leading to a form of population pressure and the emergence of tensions, trading relations with New Caledonia became restricted. This also led to an evolution in the methods of occupation of the island space, as can be established from excavation results

(Sand 1995b). For example, the regular occupation of the rockshelters seems to have stopped at about this time. This situation might have brought about a change in social organisation, leading to an emergence of strong political groups trying to control relatively vast geographical areas. The chiefs put in place a new political functioning, more hierarchical, maybe of pyramidal type, with ruling groups exercising strong control over the populations of their territories.

Although this evolution after nearly a millennium of Austronesian settlement in Melanesia may seem improbable to some researchers, it corresponds closely to what occurred in parts of central and eastern Polynesia. Thus, in Hawaii, we witness (according to some authorities) after around a thousand years of settlement a transition from a small-scale political system to one of strong territorial chiefdoms (Hommon 1986: 60). In the southern Cook Islands, trade between the islands also seems to decrease markedly after several centuries of settlement (Walter 1989). In New Zealand, the last centuries before European contact are marked by an increase in defensive construction, related to the emergence of tensions between groups and the setting up of political groupings over large areas (Davidson 1984). Thus, the appearance of monumental structures on Maré Island during the first half of the first millennium AD should not be seen as an isolated development in the Oceanian context.

The emergence of strong political structures at an early date on the coral islands of the Loyalty Islands must now be seriously envisaged. These structures were always more complex and centralized than those identified by ethnologists in New Caledonia. Although some of these differences may be due to historical changes (Sand 1995a), it should be noted that horticultural production would always have been more subject to risk in the Loyalty Islands than in New Caledonia, principally because of the variability of soils and the absence of surface streams. Research in other archipelagos has shown a clear tendency for groups living in areas of unreliable horticultural production to favour territorial expansion and/or a greater degree of political centralization. This is the case, for example, in the eastern districts (Noatau and Oinafa) of Rotuma (Ladefoged 1993), the Alo district on Futuna (Kirch 1994), Tongatapu in western Polynesia (Kirch 1984) and the groups occupying the dry regions in the Hawaiian archipelago (Kirch 1990).

Although Maré is well-known for its large traditional yams, it is clear that the island has never been able to produce as much as the complex horticultural structures,

dry or wet, of New Caledonia's Grande Terre (Sand 1995a). The development of strong political structures in the Loyalty Islands may thus be due to a combination of factors, including population increase, limitations of soils and production, a periodic territorial expansion of indigenous groups and the arrival of new populations.

CONCLUSION

The architectural study of the monumental complexes at Hnakudotit and Waninetit, as well as their dating, have made it possible to situate these structures in an overall cultural context. These sites contain valuable information on certain aspects of the prehistory of Southern Melanesia during the first millennium A.D. They show that major political and cultural developments took place during prehistoric times and that the social systems of New Caledonia were not static for 3000 years, as the ethnological studies done so far would seem to indicate. Other monumental structures exist on Maré Island as well as on neighbouring Lifou Island (Sand 1995b:38; Sand and Ouetcho 1992). For the most part, these sites are still waiting to be studied from an archaeological point of view. Their presence in the Loyalty Islands, as well as the development of complex horticultural structures (Sand in press a) and housing complexes of a monumental character in New Caledonia (Sand in press b) invite a reconsideration of the forms that social and political organizations took in New Caledonia before European contact (Sand 1995a).

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SAND, MONUMENTAL FORTS OF MARE ISLAND

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