THEMES IN THE PREHISTORY OF COASTAL PAPUA
AND THE MASSIM

Geoffrey Irwin
University of Auckland

While mainland New Guinea and its nearby islands have been occupied for at least 40,000 years as yet little evidence has been found on the south Papuan Coast, or in the Massim (Figure 1), which dates earlier than 2000 years ago. However, from that time, there have been communities of people similar in many ways to their descendants still living in the same areas today.

This paper attempts to relate a number of contiguous local prehistories with a set of more continuous themes. Papua and the Massim form a continuous region and, after nearly 20 years of modern although piecemeal archaeology, there is now a context of information full enough for a wider regional integration.

COLONISATION (0-400 A.D.)

The visible prehistory of the area began with an episode of colonisation and with the appearance of a number of communities making a kind of pottery which has been called Early Papuan Ware. This material will probably prove to be derived ultimately from Lapita pottery but the gap in time and space has yet to be documented. Certainly there are some tenuous stylistic links between Early Papuan Ware and pottery in the Bismarcks currently thought to be Lapita derived also, as at the island of Watom just north of east New Britain which has been recently re-excavated (Green and Anson 1987).

The spread of Early Papuan sites has the following characteristics:

1. It moved very rapidly by sea.
2. Early sites were conspicuously alike in their material culture throughout the distribution.
3. The living sites appear to have been villages or hamlets whose economies were based on gardening and fishing and with hunting at times. Many communities were generalised in function rather than specialised and much of the pottery was locally made.
4. There was a widespread early distribution of obsidian from a known source, in this case, from Fergusson Island.
5. In most places, the new sites flow into the landscape without any sign of stress or competition from populations already living in the area. One possible exception is around Port Moresby where seasonality of climate may have imposed some extra constraints on food production. Here some Early Papuan pottery sites are known on hilltops which, elsewhere, often implies some concern for defence.

Variability of colonisation - Cores and peripheries

It is possible to distinguish an area of primary distribution of Early Papuan sites from areas of secondary distribution where the pottery itself is delayed and occasionally derived from elsewhere. In other words, the original colonisation followed a variable pattern. The primary distribution passed through the inner Massim and westwards along the Papuan coast. One deviant example is the Gulf of Papua, where it took some hundreds of years for pottery use to penetrate the Kikori River (Rhoads 1980) and where the pottery was evidently imported from elsewhere even at this early time.

The Massim offers a more striking case. Figure 2 is a contour map of the southern Massim and the Louisiade Archipelago showing the percentages of all sites which contain some variant of Early Papuan Ware. From west to east both the number and proportion of known Early sites generally diminishes and it is unlikely that many remain, from Sudest eastwards, still to be discovered. Typological study also suggests that after the main burst of colonisation close along the mainland coast there was a slow penetration of the outer islands. It seems clear that in prehistory there were core areas and peripheries. Both the Papuan Gulf and the Louisiades are relative geographical isolates and this affected the process of their colonisation. It is also to be seen in the persistence of a non-Austronesian language spoken on Rossel, cut off by fast currents and difficult reefs and located in the extreme east of the Louisiade Archipelago. In the other islands, non-Austronesian languages were presumably superseded by Austronesian ones in the period after 2000 years ago. Further, the relative isolation of peripheral areas has affected their exposure to all subsequent widespread cultural influences, down to modern times.
DEEPENING REGIONAL ISOLATION (400-1000 A.D.)

During this period an original cultural horizon which stretched some 1200 km fragmented into a series of local traditions. Where this was first seen was in the divergence in the pottery tradition at Mailu (Irwin 1985) from those of the west around Port Moresby and Yule Island (Allen 1972; Vanderwal 1973). Localisation of pottery styles is evident in parts of the Massim too, in this same time period, but all within the context of the continuing Early Papuan ceramic tradition. At this time, so far as the data now tells, there is little specialised pottery production or long-distance trade. However, here once again the peripheries prove the exception. All of the Papuan Gulf pottery appears to be imported at this time from somewhere to the east and possibly in exchange for sago as it was ethnographically. Similarly, there are indications of some movements in parts of the Massim too, although these have yet to be confirmed.

The local style provinces which become visible at this time in the Gulf and in the vicinity of Yule Island, Port Moresby, Mailu and in parts of the Massim, generally were maintained and elaborated until the time of European contact. To an extent, their distributions are distinguishable ecologically as in the case of the low-lying sago-rich swamps and river systems of the Gulf and in the seasonally-stressed climate of the Port Moresby region. Also, in the Calvados Chain of the Massim and the large islands at its either end, one can trace the beginnings of a divergence in subsistence and settlement between large islands rich in garden lands, sago and pig production and the smaller islands with greater access to fish and transport. This emerging complementarity of economic emphasis was supported by contact between them. However, to a large extent the divergence of these style provinces does not correlate with ecological differences. For much of the Papuan coast and Massim the environment is fairly uniform. These regions seem also to be frequency-bounded spaces in which the amount of internal communication exceeded that between them.

Obsidian supplies another source of information on the subsequent break-up of the initial horizon of coloniser communities. Figure 3 plots the numbers of pieces of excavated obsidian against the distance of sites from the only demonstrated source of the obsidian which is Fergusson Island. There is a clear pattern of falling frequency with increased distance from the source from some thousands of known pieces at Mailu, to approximately 50 from Port Moresby and only three in Yule Island.

There is time difference to be found in the data too. Obsidian quickly diminished in use in Mailu as compared to local chert. While communication was maintained with the Massim, evidently its frequency was greatly reduced (Irwin 1985:212). However, obsidian became abundant in Mailu again later, especially

Figure 1. Coastal Papua and the Massim
Figure 2. Distribution of Sites with Early Papuan Ware Pottery (by Percentage)
around 3-400 years ago. It was reaching the site of Maopa on the Aroma Coast at this later time too. However, obsidian apparently was not taken much further west than there after some time in the first millennium A.D., and quite possibly some time prior to the end of that.

There is more information to be had from inspection of the mean weight of obsidian chips through time which is plotted for excavated Mailu sites in Figure 4. Here it can be seen that, in two early sites there, the mean weight of all obsidian pieces was nearly 2 grams but then it very quickly fell to approximately half a gram and remained there for 2000 years. One might say that it was abundant to start with, but thereafter fell to its smallest practicable technological size. The mean size remained the same in spite of later changes in the overall amount of obsidian coming through. A case can be made that there is a distinction between such an imported material in “coloniser mode” and later on in “trader mode”. It is likely that an initial thrust of colonisation could carry a pulse of a valuable non-bulky item, like obsidian, along with it to its early limit. The only securely provenanced piece of obsidian at Yule Island occurs in the lowest layer of the Oposisi site (Vanderwal 1973:127). One can draw a parallel, too, to the Lapita site on Naigani Island, Fiji, which has a pottery design inventory described as early and two pieces of obsidian which have been sourced to Talasea (Best 1987:31-2). There may be something to be gained by comparing different episodes of colonisation with one another to see what they have in common as processes (Irwin 1977:421-2).

A POTTERY STYLE TRANSFORMATION (800-1200 A.D.)

Early Papuan pottery, or Red Slip as it was called then, was first recognised on the south Papuan coast, around Yule Island and Port Moresby and, later, in the Papuan Gulf and Mailu areas. It was, in its various forms, part of the common base for all of the known pottery sequences of the Massim and the Papuan coast.
However, in the period 800-1200 A.D., and it is difficult to control chronology more finely because of the vagaries of sampling and dating, this pottery everywhere was apparently abruptly replaced. Pottery of this tradition was present in surface collections in Collingwood Bay but gone before the construction of the Wanigela mounds after approximately 800 years ago (Egloff 1979). It has been found by the writer among surface collections made by Lauer on Goodenough Island (Lauer 1970) and in the Trobriand Islands where it occurs in open sites and in association with megaliths. It has also been identified by the writer in drawings of surface collections made by Egloff in Murua (Woodlark) island (Egloff personal communication 1985) and by Kirch (personal communication 1988) on Budibudi (the Laughlans). During field work in 1979, 1980 and 1985, it was found to be widespread in the southern Massim and Louisiade Archipelago (Figure 2).

After 20 years of work by some 10 archaeologists, this change can be now seen as a general event. In the early days of Papuan research, this hiccup in each sequence was defined with a local focus. There was no wider background as local events could not be related to as many other sequences as they can now. However, there is still room for some argument about the dates and some archaeologists who have worked in the Port Moresby area might prefer two breaks rather than one. Certainly there may have been some ceramic variability there at around this time. However, we are presented with broad evidence for similar widespread change. The chance of all of these local examples occurring independently, at roughly the same time, is remote.

It is interesting to compare this with the equally sudden appearance of the common ancestor of this pottery 1000 years before. That was a transformation expressed everywhere in the same terms. This was a widespread transformation expressed everywhere in local terms insofar as all of the replacement pottery industries were different from one another as well as from what preceded them. There are broad similarities between groups of the new regional styles (Irwin 1981), whereas the pottery first introduced a thousand years before was everywhere very alike. This is an essential difference between the two episodes.

Field survey of the Papuan coast and Massim is now adequate to rule out, with some confidence, an external origin for the new industries. For example, it seems less likely that a migrant group of maritime specialists brought early Motupore pottery into the Port Moresby area some 750 years ago (Allen 1977:393) now that no homeland has been found for such a group anywhere else in the wider region. So it would seem that while the stimulus for change was external, being widely shared, the response was local in that every regional instance was individual.

Early attempts to interpret local versions of this widespread change favoured migrations until it became unfashionable or untenable to do so. This position was not unreasonable given that the archaeologists working in the region had generally agreed that the earliest pottery had appeared with the arrival of migrant communities (e.g. Vanderwal 1973), so there was an argument for invoking more when different pottery appeared. However, in the Mailu case it became clear that while the pottery changed there was evidence of continuity in other data. The settlement pattern after the break was substantially the same. In the use and
proportions of local chert and imported obsidian there was no measurable change. Even with regard to the pottery itself, four of the same five clay sources were still used without any major discernible shift in their proportions. It was clear that there had been a radical and archaeologically sudden change in pottery style, but that this had taken place in the context of local social continuity. Moreover, it is likely that this situation applies throughout coastal Papua and the Massim. Not everyone agrees. For example, Susan Bulmer originally proposed an external introduction for Port Moresby pottery she designated “Massim” (1971). Later she found more continuity and even in the pottery itself from the Early Papuan Ware to what followed it (1978). However, neither of these extremes conforms to other evidence known to the writer.

The simple explanation is that there was a sudden pottery change in most local sequences, while many other things carried on. There was continuity in another sense too, which is that the diverging stylistic regions of Papua and the Massim which were showing up in the latter part of the first millennium A.D. remained distinct after the break and were on their way to becoming the cultural groups later on described ethnographically in finer grain.

Evidently, new attitudes to pottery-making spread through a set of on-going and interacting settlement systems in an elapsed time perhaps as short as five or ten human generations. How this may have happened is presently under study.

Once again, in this matter as in others, there was a systematic difference between the cores and the peripheries. In the Papuan Gulf, in the Kikori River survey area, Rhoads (1980) found no pottery sites of the immediate post-1000 A.D. period. So this region remains as deviant as ever. In the Louisiade Archipelago there is the intriguing possibility that the ceramic change was delayed and “antique” Early Ware was produced for a few centuries more. Whatever happened elsewhere, the message was not received here. The case is still uncertain but there are two lines of evidence for it. Firstly, the early stages of the Tubetube/Wari tradition, which date to the early part of the second millennium A.D., while present in the Engineer Group appear to be absent from the Louisiades to the east. There, a version of Early Ware may have continued locally for a time until it was taken into the expanding orbit of the Tubetube/Wari tradition.

Secondly, in Figure 2 it can be seen that the percentage of all archaeological sites that is early is approximately 20% around the mainland coast and in the inner Massim. Further east, this pottery generally reduces and does not appear, on present evidence, to reach the end of the Louisiades. This is simply a case of greater elapsed time being needed for a trait to spread from a central area into the margins and much the same can be said of the gradual penetration of pottery inland from the Papuan coast into the Owen Stanley Range north from Mailu and south from Wanigela (Irwin 1985:242). However, there is another point to be noted. In Figure 2, the percentage of Early Ware sites actually rises to a value of 40% beyond the Engineer Group in the inner western part of the Louisiades, before it falls again. The greater frequency of Early Ware sites may be the result of that pottery having been made here longer.

Following this general discontinuity, there was often stylistic continuity in pottery down to modern times. In the Mailu area, Mayri ware gave rise to modern Mailu (Irwin 1985). Research by the writer suggests the same continuity for the Tubetube/Wari industry of the southern Massim. Egloff (1979) has identified the ancestor of modern Amphlett Islands pottery possibly as far back as 800 years ago although he could not confidently establish a link between the prehistoric Collingwood Bay ware of the second millennium A.D. and modern Wanigela pottery of the same area. The situation for Port Moresby is unclear. Allen traces a development from Motupore ware to historic Motu whereas Bulmer (1978) finds a discontinuity among some of her late prehistoric styles. For the Yule Island area, the suggestion has been made that the ethnographic Roro pottery was not a development of the local Urourina ware, but possibly derivative of Motu (Vanderwal 1973). Many of these uncertainties are in the nature of domestic disputes and cannot be resolved here. However, the chances are that once we can see past the idiosyncrasies of each case, continuity in the local pottery industries of the second millennium A.D. will be shown to be more general than they seemed at the time each was first studied.

INTERACTION, SPECIALISATION AND EXCHANGE (1200-1800 A.D.)

After the break, local stylistic regions are more visible archaeologically and, in the Massim, sub-regions as well. The evidence suggests that these areas were becoming integrated locally by internal communication and more differentiated from one another. During the last five or six hundred years, New Guinea has been ringed by coastal communications systems whose spatial fields have expanded, shifted and sometimes shrunk.

At the same time there is evidence within them for the emergence of influential communities which became centres of specialised manufacture and trade. The growth of these communities was supported by, and further increased, the level of regional integration. Ethnographic examples are many and several now have an archaeological dimension. Included are the potters and traders of the Western Motu, the Mailu, Collingwood Bay and the D’Entrecasteaux Islands, the long-distance sailors and middleman traders of Tubetube and the
Siassi, the important centres of trade and Kula in the Trobriand Islands. There are many other examples as well including some newly discovered in the Massim.

While, individually, their development can be explained in a local context, their occurrence within the same general time range is more than coincidence. A number of themes recur although the differences between cases sometimes are as great as what they hold in common. Mailu Island can be taken as one example of a specialised place (Irwin 1985). Some 2000 years ago this community was much the same as its peers. At contact it was described as a Melanesian "metropolis" (Saville 1926:19) with a trading fleet, a regional monopoly of trade pottery and a key role in the long-distance movement of both valuables and utilities. Socially it was showing more complexity than its neighbours. A number of factors were associated with the differentiation of this place, including ecology and centrality and, as time passed, its dominance was secured in warfare. In a similar vein the pioneer anthropologist Seligman (1906:240) likened the Tubetube of the southern Massim to the English "merchant venturer": "laden for trade, but armed for combat".

It is important to note that these were assorted centres which emerged at slightly different times. They were engaged in different kinds of production and, to a greater or lesser extent, this was to trade for food for their own subsistence. They were engaged to different degrees in the distribution of their products or sometimes, as in the case of the craft specialists of Kuboma in the Trobriands, scarcely at all. One observation that holds in a number of cases is that the ethnographic state of technology reflects the prehistory of the changing economic and social context of production. To give just one example at Mailu, which depended heavily on pottery for subsistence trade, the pottery shifted from local, low volume and domestic to centralised, high volume and specialised. For the Amphletts, which were supported by pottery but less engaged in its distribution, the increasing formal standardisation and fineness of the pottery was even more marked. However, for the Tubetube Islanders, who lived more on middleman trade than on their pottery, no comparable sophistication is seen (Irwin 1981).

Through time these regional systems of interaction and trade were evidently more fluid than static. There are various lines of evidence for this. Firstly, it seems that the location of central places changed. For example Motupore, an ancestral Motu village, may have been abandoned before European contact. On the other hand Tubetube, which was described ethnographically as an important centre, did not provide archaeological evidence for having been established long at that place.

A second aspect of fluidity is in the changing patterns of articulation between adjacent regional systems. For example, in the case of interaction between the Mailu area and the Massim, there is good evidence for substantially increasing communication approximately 3-400 years ago, which subsequently reduced to virtually nothing. Then, at approximately the end of prehistory, the lines of communication and trade reopened.

A third aspect of change in these regional systems is contingent on the second. Changes in the equilibrium of relations between neighbouring systems led to internal changes within the systems themselves and vice-versa. As one case in point the Kula, as described by Malinowski (1922), was systematically related to the trading systems of coastal Papua. Important categories of shell valuables regularly passed into and out of the Kula (Irwin 1981). The Kula, as such, could only have existed following the reopening of the link between the Massim and Mailu and is therefore historic in age and not virtually timeless as Malinowski described it. Another comparable example of change has been described by Egloff (1978). Subsequent changes in modern times confirm how very ephemeral these system were in the past, and still are (Irwin 1981, Leach and Leach 1983).

SUMMARY
The prehistory of coastal Papua and the Massim can be expressed as a number of themes which generally applied everywhere but were expressed as particular regional variations. Some regions changed in typical ways, while others were typically deviant. Among these themes can be included the following: colonisation, divergence of regional systems, ceramic transformation, economic specialisation, integration of exchange systems, changes in social complexity and the increasing differentiation of both people and their communities.

REFERENCES
Following the initial work of Ralph and Susan Bulmer in the early 1960s, research into the early prehistory of the Highlands of Papua New Guinea has produced a considerable body of evidence, both archaeological and environmental. Although the picture is far from clear, it is possible to present a scenario of human interaction with the changing environment from 40,000 years ago on the northern coast of Papua New Guinea to the first record of agricultural development in the Highlands between 9-6,000 years ago. A plausible hypothesis can be made that these Late Pleistocene hunter-gatherers were manipulating their environment, targeting the forest edges and disturbance zones to increase desirable plant and animal resources. Data from the site of Nombe rockshelter shows development through the end of the Pleistocene period towards more permanent and intense activity with marked increases in artefact and bone density at the beginning of the Holocene period.

INTRODUCTION

In 1969, when the prospect of working in the Highlands of Papua New Guinea became a possibility, I read the 1964 American Anthropologist's Special Publication on The Central Highlands of New Guinea. The article by Ralph and Susan Bulmer, 'The Prehistory of the Australian New Guinea Highlands', formed the beginning of my understanding of the development of the region throughout its prehistory. Ralph Bulmer was Professor of Anthropology when I arrived in his Department at the University of Papua New Guinea in October 1971. His work in the Highlands provided me with many ideas for the integration of various disciplinary approaches to research. In particular his insight into the multifaceted but always interdependent relationship between Highland people and the fauna and flora of their environment was always in my mind whilst I battled through the sorting, identification and computerisation of over 50kg of archaeological bone from Nombe rockshelter. Bulmer was one of a handful of researchers working within Papua New Guinea who incorporated local knowledge of plants and animals into western theory and I pay tribute to his unique efforts, especially to his vision of the production of the series of publications begun with Majnep and Bulmer 1977. I wish every success to Majnep and Pawley, now working to finalise those publications.