

## CHAPTER 1

### INFORMATION PROCESSING AND AUSTRALIAN PREHISTORY

#### 1.1 INTRODUCTION

This thesis has two primary aims. The first is to examine a range of ethnohistorical and archaeological data in an attempt to establish the patterns of settlement and subsistence of the prehistoric Aboriginal inhabitants of northeastern New South Wales. I focus particular attention on the New England Tablelands and the rugged gorge country lying between the coastal hinterland and the tablelands. Secondly, I will describe the patterns of social intercourse and alliance in the region, using both historic and archaeological data. I will then consider the relationship between these, and social arrangements seen elsewhere in Australia. Finally, I will examine the potential of information theory to explain the processes and changes which occurred in the New England area and across Australia during the middle and late Holocene.

It will be demonstrated that social relations between groups in northeastern NSW were extremely fluid at contact, and that this fluidity is reflected in the archaeological record of this region. Ethnohistorically, clans in coastal areas sought to establish autonomy from their neighbours, continually forging alliances, which collapsed and then re-emerged as differences were mediated. This is reflected in the complex linguistic arrangements seen in coastal areas, with large numbers of dialects being used by individual clans, but no break being of such depth or of sufficient time for a new language to emerge. We will also see that linguistic evidence suggests a joint ancestry for tableland groups and certain coastal peoples, and that barriers developed between these peoples such that extreme divergence between tableland and the related coastal languages took place. By the time of European settlement, the tableland social organisation, art and exchange networks had far more in common with people to the west than their coastal brethren. The people of northeastern New South Wales sustained themselves with a sophisticated subsistence round encompassing elements of both foraging and logistical organisation interwoven with a complex mosaic of secular and ceremonial interaction.

The existence of extensive and highly plastic social networks of this kind has been documented in many areas of Australia. Lourandos, in his meticulous reconstructive anthropological study of southwestern Victoria (1980a and 1980b) has illustrated one case, while the social networks of the central arid zone of Australia are still the subject of much modern anthropological investigation.

Prehistorians have begun to examine the antecedents of these systems in a number of regions. It is generally thought that they began to emerge in the middle and late Holocene, at the same time as other major changes in the archaeological record were occurring (e.g. Lourandos, 1980, 1983, 1985; Bowdler, 1981a; Beaton, 1983, 1985; Hughes and Lampert, 1982; Williams, 1988; Ross, 1985; Morwood, 1987; Veth, 1987). Increases in the numbers of sites, increases in the amount of discard in sites, changes in settlement patterns (often associated with the appearance of new types of sites), changes in material technology and subsistence strategies, more intense occupation of areas that had only been sparsely visited in the past and expansion into marginal areas, regional development of new art styles, and development of long-distance exchange networks have all been noted as demonstrating a rate of change and development not previously seen.

Various explanations have been offered for these changes and developments. These include environmental functionalism (Morwood, 1987), arguments of demographic change focusing on inherent population growth with strong foundations in cultural materialism (Hughes and Lampert, 1982; Beaton, 1983 and 1985) and arguments examining the role of social processes to force change (Lourandos, 1980 and 1983; Ross, 1985). These hypotheses have all fallen within what has been somewhat loosely called *intensification*. Generally, this is taken to mean a growing complexity in social and technological arrangements that continued to escalate and was, in Lourandos' words, "nipped in the bud" by the coming of the Europeans (Lourandos, 1983).

Recently, Hiscock (1986a) has argued that some evidence sustains a case in which, rather than a steady climb towards ever greater sophistication, there may have been devolution of the system over the last thousand years. Similarly, Attenbrow (1987) has presented a case that there is evidence that populations were static and possibly decreasing over the last thousand years in numerous areas of southeastern Australia.

I will not review each model in detail here. Numerous critiques of the various explanations for these developments are available in the literature: Beaton's (1983) trenchant review of Lourandos (1983); Lourandos' (1984) rebuttal of Beaton's (1983) cultural materialism; Lourandos' (1980a) puncturing of arguments relying on environmental determinism; Hiscock's (1986a) questioning of the methods of quantifying intensification. Rather, I simply note that there has not been a general acceptance of any one model, as each has been found wanting in certain key elements. Instead of attempting to find a single, all-inclusive explanation of change we might do well to approach the problem in a more piece-meal fashion. In this thesis I will consider the utility of information theory in explaining some components of social and economic change in Aboriginal society in the middle and late Holocene.

For most Australian prehistorians, the knowledge that Aborigines possessed about the environment, both social and natural, is taken for granted. It is accepted that systems for the processing of social information were necessary to sustain the social organisation, and it is obvious that people must have possessed detailed knowledge of their environment to extract resources from it. There has not, however, been a detailed review of the impact of information processing systems as a driving force in shaping Aboriginal prehistory in the way that has been considered both in Europe and America (notably Wobst [1977], Hodder [1981], Moore [1981] and Gamble [1981]). As Moore (1983: 173) has observed, this lack of interest in information systems and their effects stems from most archaeologists viewing society as 'an energy-consuming organisation' with archaeologists 'emphasizing the control of energy resources and energy-producing technology' rather than seeing society as 'an information-processing organisation'.

Bowdler (1977) is one of the few who has touched the issue, albeit tangentially, in her coastal colonisation model. In essence what she was saying was that people stuck to the coast for a very long time because they did not possess the requisite knowledge to strike out into the interior. She did not, however, pursue what the implications of acquiring this knowledge were in terms of social organisation. Indeed, she assumed that the social systems in place at contact had existed for many millenia, and so borrowed Stanner's (1965) model of territorial organisation to explain away the arguments of the theorists of sea-level rise catastrophe. Those interested in Aboriginal art have closely examined the role of art in storing and encoding information on a diverse range of subjects, and how this may have aided social and economic change (e.g. Morwood, 1987; Smith, 1989). They have tended, however, to view the information system as a consequence of changes in other areas of Aboriginal social organisation, settlement and subsistence, and have not considered the possibility that developments in the area of information processing may have been catalyst for changes in prehistoric settlement, subsistence, ceremony and ritual.

Information is a resource that must be acquired, and processing of it is an ability that must be learned. Nor does it come without costs to the acquirers and users of that information. Further, the social consequences of the evolution of information processing systems can be profound. It is possible that the evolution of information processing played a significant role in Australian prehistory, and that viewing the archaeological record of this continent from this perspective might prove fruitful.

I will offer an hypothesis in which the mid-Holocene is not seen as a period primarily of major change in social relations or demography, but rather as a point, albeit a highly significant one, in the evolution of information processing systems which had consequences both for social organisation and subsistence strategies. The ultimate consequence of the evolution of this system

of information processing was to set in motion social processes which developed a momentum all their own. These produced an inherently unstable political situation which had a more general impact on other aspects of social organisation, such as group interaction as well as alliance and exchange networks. They could also have provided a mechanism for the stagnation of Aboriginal society in the last 1,000 years, as hinted at by Hiscock (1986a) and Attenbrow (1987).

In the remainder of this chapter I briefly examine the form and nature of information processing systems. I then consider the process of information validation, how this can be manipulated by politically astute individuals, and the place of art in information processing systems. The main body of the thesis consists of a thorough reappraisal of ethnohistoric and archaeological evidence from northern New South Wales to demonstrate the complexity which existed in this region at contact and during the late Holocene. In chapter 12 I review elements of the Australian archaeological record with particular emphasis on information processing and validation, drawing on the discussion presented below.

## 1.2 INFORMATION PROCESSING SYSTEMS

The need for systems of processing information are as necessary for hunter-gatherers as they are for an economist attempting to develop complex macro-economic models, perhaps more so since the very lives of the hunter-gatherers depend on the accuracy of the information and the conclusions they draw from it (Moore, 1981). Over the course of their lives, hunter-gatherers collect and organise knowledge about vast areas of land. Binford (1983), for instance, has documented that the average Nunamiut hunter gathers data on an area of 300,000 square kilometres over the course of his life. In Aboriginal society there is an equally large source of knowledge which can be incorporated into both day to day decision-making, and into planning longer term strategies both seasonally and annually (see Gould, 1969 and Cane, 1984). There is an equally large data bank available on the social environment: who constitute allies, who are kin, who can be relied on and who should be avoided.

It is the realisation of the need to know a wide range of complex data, and possessing mechanisms for collating, storing and distributing information which provides hunter-gatherers with a safety net. Only then are options available so that crises caused by the failure of one resource in one area can be solved by recourse to another, perhaps less-highly ranked, alternative. Accurate information and methods of collation and transmission are, therefore, a vital resource to the survival of hunter-gatherers. Knowledge about the environment, however, no matter what Parmenides thought and most archaeologists believe, is no more innate within hunter-gatherers than any other group. Information is no different from any other resource in that it must be collected, stored, maintained and correctly applied if it is to be of any use, and,

as is the case with other resources, it comes at a cost. Its primary cost is time taken to collect, assess, store and disseminate.

Any information system is composed of three fundamental elements:

- a. procurement;
- b. evaluation of the quality and usefulness of data; and,
- c. dissemination to appropriate parties.

Each of these is not without costs and problems.

Procurement is a relatively straightforward process involving individuals moving around the landscape observing and registering pieces of information about what resources they have seen, and in what quantities they were available. It is highly unlikely that people would undertake such 'voyages of discovery' for no other purpose but to collect information. Commonly, data would be gathered while other activities were being undertaken, thereby reducing time cost involved. In effect, the cost of procuring the data is defrayed by embedding this process within other activities. However, it takes a considerable period of time to assemble enough pieces of information to construct a series of subsistence options. Moreover, because the environment is continually changing, in both the short and long term, information will be made obsolete. Consequently, information procurement is a never-ending process of collection and revision.

Assessment and evaluation is a more difficult procedure. It involves three separate activities: the pooling of the data, sifting of that data to remove extraneous/irrelevant or plainly wrong items, and a decision whether the data provides important information in the short or long term. This final component requires either the rapid dispersal of knowledge for immediate return, or the storage of information for use at a later time. The immediate expense of assessment can be reduced by undertaking it while engaged in other mundane activities: manufacturing or fixing tools, chatting round the campfire while eating.

The mechanical aspects of distribution are relatively straightforward and can be embedded within the larger network of social interchange. They can range from informal campfire chats to large-scale ceremonial gatherings with clearly defined roles of exchange between individuals.

There is, however, one principal cost that can not be absorbed in this way. While an information system must achieve a certain critical mass of input (i.e. minimum number of individuals) to provide enough data to function effectively (Wobst, 1974), Johnson (1978 and 1982) has shown that there is a limit to the amount of information with which any one individual can cope: that is, the system can suffer information-overload. Thus an information catchment can only remain open-ended, with any one free to input, assess, distribute and receive information, until it

reaches a certain size. Thereafter, the costs of monitoring and evaluating data escalate way beyond the value of the information being entered into the system.

It becomes necessary to impose constraints on the information catchment, to filter and reduce the amount of data, some of which will be dubious and/or plainly wrong, entering the process. Johnson has suggested two methods of limiting the catchment. Firstly, one can establish a hierarchical mechanism to reduce the number of people who input, handle assessment of, and distribute, information. Secondly, one can move to restrict the size of the information catchment, by implementing horizontal segregation: excluding individuals or whole groups from the system.

Moore (1983) proposed that in order for this social sifting to function, there is a need to create a subsidiary information network. He has referred to this process as 'information validation'. It is a 'communications code that has referents only to the social status positions and social groups in the information field' (Moore, 1983: 185). The operation of this subsidiary information system serves to validate the receiver's access to the information, and . . . identifies the sender as a legitimate source of a particular information' (Moore, 1983: 185). Information can then be taken at face value, obviating the need to filter it to avoid possibilities of 'garbage in, garbage out'.

Validation operates via the use of metacodes, in which 'information is evaluated according to the sender's ability to use the metacode to identify himself as an appropriate source of the information transmitted' (Moore, 1983). We might also add that it identifies those who may receive information as well. Many of the media used to transmit such metacodes are, of necessity, visible in the public domain, thereby reducing costs in ascertaining a person's status (Johnson, 1982). Such media include use of ritual languages and jargon, body marking (both painting and permanent mutilations: tooth evulsion, subincision, circumcision, chest cicatrices), possession of exotic material culture, and use of particular forms and styles of art and decoration. The access to the information encoded in such media, however, is restricted. The information about what such symbols and items mean, and the great body of arcane information which goes with their acquisition, is firmly centred in secret/sacred ceremony, access to which is strictly controlled.

In establishing such constructs, however, information becomes an asymmetrically-distributed resource to which only some in a society have access, providing ample opportunity, for those who possess it, or control the metacodes, to extort personal benefit. It is extremely dangerous to implant inaccurate primary ecological data, but manipulation and control of the metacodes and validation processes allows those individuals who control them to simply deny access to the requisite metacode or primary data (see Meillassoux, 1960 for discussion of authority by monopolisation of social knowledge: rules of alliance, genealogies, customs, marriage regulation

history, and magic). Control of individuals who are not as well versed in the metacode becomes thereby a relatively easy matter.

Tonkinson (1978) provides example of Mardudjara men 'dreaming' new songs and myths, which if accepted, validated their claims to certain areas, and custodianship of the resources therein. Von Sturmer (1978) reports something similar by 'boss men' in western Cape York when claiming critical resource areas for themselves and their clans. Paintings amongst the Yolngu are used to ' . . . *make* and justify claims over land and, as symbols of agreement, they are involved in the creation of new clan groupings' (Morphy, 1977: 339). Because non-figurative motifs are used to transmit these messages they are open to a continual reappraisal and extension of interpretation. Lewis and Rose (1988) document the manipulation of information contained in paintings by selective memory and reinterpretation of the art which encodes that information. Old men amongst the Tiwi justify and sustain their polygyny which denies young men opportunity to marry young women, by requiring them to proceed through four stages of initiation by which time they are thirty to thirty five years of age (Rose, 1968). To gain the requisite level of ritual knowledge, a young man must indenture himself to one of higher degree. The nature of this relationship has been likened to that of master and servant (Rose, 1968).

In the central desert, procedures are in place to restrict the possibility of subversion of artistic interpretation by enforcing strict stylistic conventions and imposing harsh penalties on those who break them (Strehlow, 1964). The simple fact that rules of these sorts exist to safeguard the conventions of expression and interpretation clearly indicates that individuals manipulate it to their own ends.

These are clear demonstrations of the power that control of such metacodes can confer. The potential for ambitious individuals to assert themselves and extend their personal power base, and institutionalise hierarchical structures and inequities in distribution of resources is obvious. Moreover, once these processes are set in train, the use of the validating metacodes for personal advancement can become an end in itself, with little reference to its primary purpose, so that in a sense the medium becomes the message. Thus, individuals may seek to play the system in ways that may, ultimately, have serious and debilitating consequences for the information network as a whole, leading to the collapse of the network, and thereby reducing the efficacy one of the primary tools a population needs to plan and implement a strategy ensuring its survival.

I have alluded above to the necessity of storing information and have mentioned a few of the means of doing this. I offer a few further observations about this issue before passing to other matters. While some information was simply stored in people's memories, and older people were probably relied on to a great extent in this regard, much was stored in more formal ways

along with all the arcane information on kinship, ceremonial and myth cycles necessary for maintenance of the social fabric of society. A perusal of many of the myths told by Aboriginal people, and recounted, for instance, in Berndt and Berndt (1989), reveals the large amount of data stored in them. Many of the natural sites of significance in northern N.S.W. documented by Creamer and Kelly (see Creamer, 1981 as well as N.P.W.S. site information) are major and significant features of the landscape mentioned in myth cycles. This is in part a means of providing a ready referent for the landscape of which you were a part but for which no formal map existed.

Similarly, art is also a medium for storing extremely detailed knowledge about the landscape and its resources, albeit with some need for the necessary arcane knowledge to interpret it (see Morphy, 1977). Taylor's (1979) fascinating study of *kulpidgi* provides an excellent example of this. These sacred engraved boards contain stylised representations of the routes of various dream-time creators with various sacred and prominent land marks included on them. He has further shown that the rock art of this area, and indeed the patterns of cicatricing on the chest associated with the initiation of young men, are likewise representations of these paths and environmental features. In one sense, therefore, every initiated man carries a map of significant places in his territory with him, though, of course, it is by no means a direct depiction of that region. At the very least, however, such representations must have served as semi-permanent mnemonic devices, once access to the requisite arcane interpretive knowledge had been gained.

The prehistory of art in Australia assumes some importance in the arguments I present in this thesis. Some comments, therefore, about the meaning of style in this medium are apposite. Within archaeology there have been two distinct schools in the interpretation of style (see also Collins, 1989 and Smith, 1989 for discussion of this issue). The first is commonly called 'social interaction theory' (see Davidson, 1937; Strehlow, 1964; Deetz, 1965). In this school, stylistic similarities and differences are seen as a simple function of the degree of interaction between groups. There is an epicentre for a particular stylistic tradition and the style becomes more diffuse as one moves away from this epicentre because there is less interaction due to either geographical or social distance. As a network of interaction broadens to include a wider cross-section of groups, the style is thought to become more diffuse, and it is therefore assumed that the degree of similarity between groups can be used as a direct estimate of interaction between these groups: the greater the degree of stylistic similarity, the more intense and restricted the level of contact (Smith, 1989: 1).

A number of challenges have been made to premises underpinning, and conclusions deriving from, social interaction theory. These include the role played by style in group communication: social interaction theory sees style as reflecting purely the level of social interaction rather than as a

central component in the communication process. There have also been specific challenges to key assumptions. Braun and Plog (1982: 509) note that stylistic heterogeneity stems, not so much from lack of opportunity, as from a conscious decision not to copy a style from neighbours. Hodder (1977) found that there were marked differences in stylistic traditions amongst certain groups in Kenya even though they had an high levels of social interaction and marital exchange.

With the weakening of key elements of social interaction theory, it has largely been replaced by information exchange theory (Wobst, 1977; Hill, 1985; Kintigh, 1985; Smith, 1989). In this school, style is seen as a critical element in communication between groups. Style is seen as 'both functional and adaptive, . . . conveying information that helps foster group identity, integration and boundary maintenance' (Hill, 1985: 366). Groups can choose either to share or eschew elements of style of their neighbours depending on the type of relationship that exists between themselves and a neighbour, rather than as simple function of distance (both geographical and social) from the epicentre (Smith, 1989).

Numerous archaeologists (e.g. Gamble, 1981; Jochim, 1983) have posited that stylistic homogeneity equates with open social systems required by rigorous environmental conditions, because of the adaptive value of groups having periodic access to each others resources in harsh environments. Until recently, however, the validity of such assumptions had not been tested. Smith (1989) undertook this and was able to demonstrate, by comparing the *contemporary* art of the western desert of Australia with that of Arnhem Land, that there was a correlation between environment, type of social network and degree of stylistic heterogeneity/homogeneity as suggested by Wobst (1977): homogeneous art styles and open social networks were found in the harsher environment of the western desert, while the reverse held true in the richer environment of Arnhem Land.

It is platitudinous to note the centrality of art to ceremonial, political and social aspects of Aboriginal society, reason enough for supposing that changes in these non-material spheres would be reflected in the art (e.g. Morphy, 1977; Munn, 1973). The art itself is loaded with meaning, often being multi-valent: Morphy (1977) has shown that a single painting can include details of an individual's clan association, totems, and land custodianship. The extraction of such information encoded within the art requires the adoption of conventions of representation to ensure consistent interpretation (Strehlow, 1964). From this it can be expected that the distribution of a style of art is a reflection of the extent of a particular communication network, or at least common notions of how information should be conveyed.

Beyond this, however, Moore (1983) has pointed out that redundancy of information transmission, particularly validation, is an essential element in preventing the fraudulent use of

metacodes. One must be able to validate oneself through various media to be accepted, for any information supplied to be given credence, and for this precious resource to be shared in return. In this Aboriginal society was no different to any other. Taylor's (1979) study highlights redundancy or duplication of this sort. Here the same information was being transmitted in three different media: rock art, ritual scarring, and engravings on sacred boards. In view of this redundancy of transmission, rock art may be a sensitive datum of changes in other media.

The final point to be made here is that as the information system becomes more complex, as the need to convey more and more detailed messages to define one's position and guard against fraudulent misappropriation increases, so too the mechanisms for transmitting information become more sophisticated (Moore, 1983). New methods of information transmission will be developed and existing means will be modified to allow increased information content.

## CHAPTER 2

### THE ENVIRONMENTAL CONTEXT - PAST AND PRESENT

One of the dominant, and continuing, debates in Australian archaeology, and anthropology generally, has centred on what role, if any, various environmental factors have played in shaping prehistoric Aboriginal society. This debate has ranged from strict environmental determinism (e.g. Birdsell, 1953) through arguments tinged with an ecological functionalist orientation (e.g. Yengoyan, 1968), to models in which social rather than environmental forces are considered to be the major factor in determining the form of the society seen at contact (e.g. Lourandos, 1980a, 1980b, 1983 and 1985). Thomas (1981) provides a succinct appraisal of the relative merits of environmental versus social factors in the context of the debate on the evolutionary trends of the Tasmanians, and Attenbrow (1987) provides a general summary of the debate in Australia. One of the themes to be pursued in this study is of establishing to what degree environmental and social factors influenced the direction taken by the Aborigines of this region in the moulding of their subsistence strategies and economy generally. Consequently, in this chapter I seek to isolate various environmental features which may be relevant to this question. I also attempt to establish which environmental variables have affected site preservation and the likelihood of sites being detected during ground survey.

I have approached these questions in the following way. Firstly, I describe the study area as it exists today. Then, recognizing the major changes that have been wrought in some aspects of the regional environment since contact I develop a model of the region as it was before European transformation of the landscape, using the records of early explorers and settlers. Finally, I consider what the environment may have been like in the late Pleistocene and Holocene.

#### 2.1 THE PRESENT DAY

The region under consideration here can be divided into two broad zones: the tablelands and the coastal hinterland/gorge country. To simplify discussion I consider various aspects of these two zones separately.

##### 2.1.1 The Tablelands

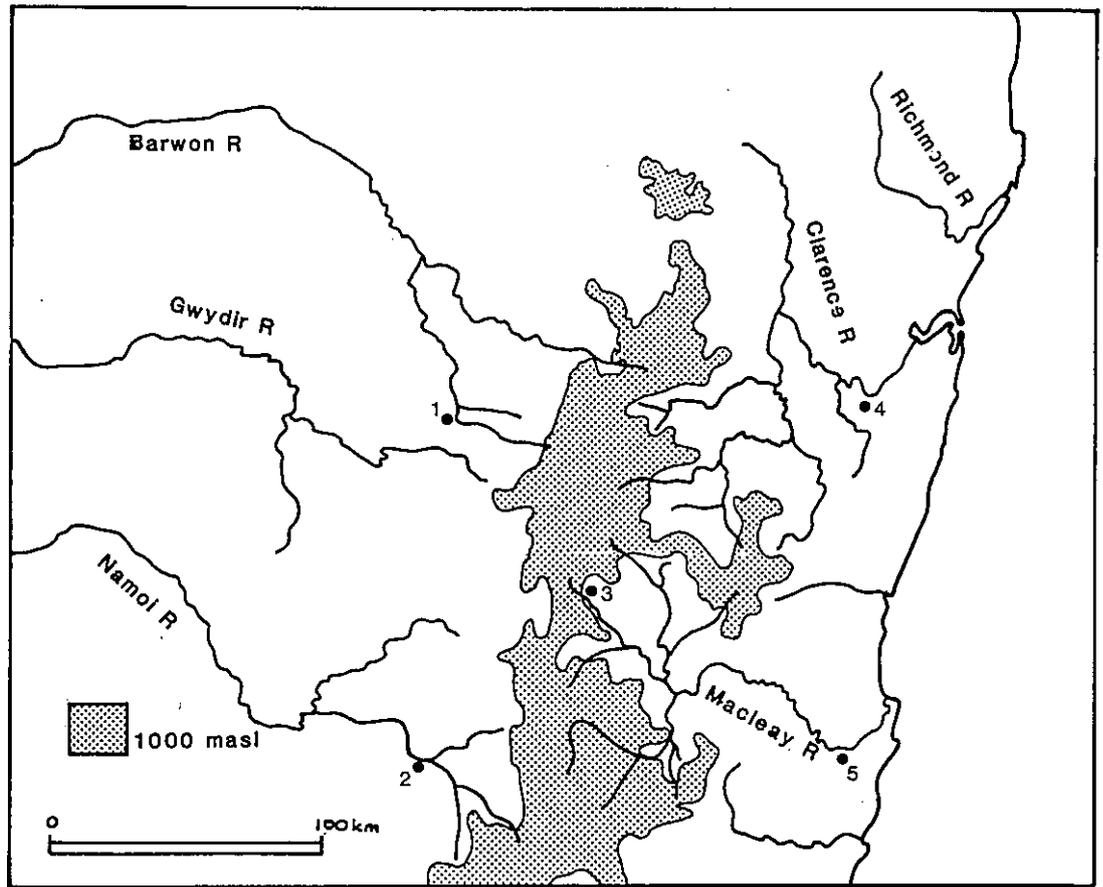
###### 2.1.1.1 Definition

The New England Tablelands largely consist of an expanse of uplifted marine sediments of Paleozoic age constituting part of the eastern highlands which extend along the east coast of Australia from far north Queensland to south-western Victoria and which are sometimes known as the Great Dividing Range (cf. Ollier, 1977). The tablelands have an obvious topographic

boundary in the east, where the rugged escarpment and gorge country referred to as 'the Falls' mark the break between coastal plain and highlands. Geologically, the eastern escarpment consists of the Demon Fault and the Eastern Serpentine Belt (Harrington, 1977; Voisey, 1963). To the west, however, the boundary between tablelands and western slopes is far less distinct. There is not the marked topographic discontinuity seen in the east, except in the Moonbi area in the southwest, where highly dissected country is encountered. A boundary is afforded by the geological formation known as the Bundarra Granite, an outcrop running in a long spine from Bendemeer to the Queensland border near Texas (Harrington, 1977: 25-7). This correlates quite closely with a major break in the floristic communities found on the tablelands and western slopes. The tablelands are taken to include all land above 750 m.a.s.l. or the upper distribution of white box (*Eucalyptus albens*) (Williams, 1963: 46). The geological division also closely parallels that seen on soil maps, which is not surprising in view of the close relationship that exists between rock and soil type (see McGarity, 1977: 47).

As their name implies, the tablelands consist of fairly open, flat country. Slope maps of the region show that gradients generally lie in the  $1^{\circ}$ - $3^{\circ}$  range. Only rarely do they exceed this (Swan, 1977). Slope does not vary in relation to altitude, that is the higher areas of the tablelands show no more or less degree of slope than is found across the tablelands as a whole. The relief of the region, however, varies considerably. There is a slight but distinct general trend of decreasing attitude from east to west. The highest locations on the tablelands are in the east near Ebor, where altitudes of 1400 m are reached. The Guyra district lies well over 1,000 m.a.s.l., whilst the Armidale district ranges between 800 m.a.s.l. and 1,100 m.a.s.l. Heights of 700-800 m.a.s.l. are common in the western-most parts of the tableland.

The tablelands constitute the watershed of rivers flowing east to the sea and those that flow west to join the Murray-Darling system. Although it contains the headwaters of a number of relatively large rivers, the tablelands itself does not possess any major waterway, although the rivers that are present are permanent. There are also numerous small but permanently flowing streams found. These are most common in the east for reasons of rainfall gradient (see below). They may be reduced to a trickle for long periods, but waterholes can be found along them even during quite long droughts (Douglas and Douglas, 1977: 101). Two other important sources of fresh water exist; these being the lagoons and swamps (see also below). These sources are mainly ephemeral supplies but some, such as the Llangothlin lagoons between Guyra and Glen Innes, are virtually permanent and serve as refuges for large waterfowl population. There are at least thirty five lagoons on the tablelands, distributed along a north-south axis (Walker, n.d.:1).



- 1 Inverell
- 2 Tamworth
- 3 Armidale
- 4 Grafton
- 5 Kempsey

Figure 2.1: The general study area, showing the major towns, rivers and land above 1,000 m.a.s.l. in northeastern N.S.W.

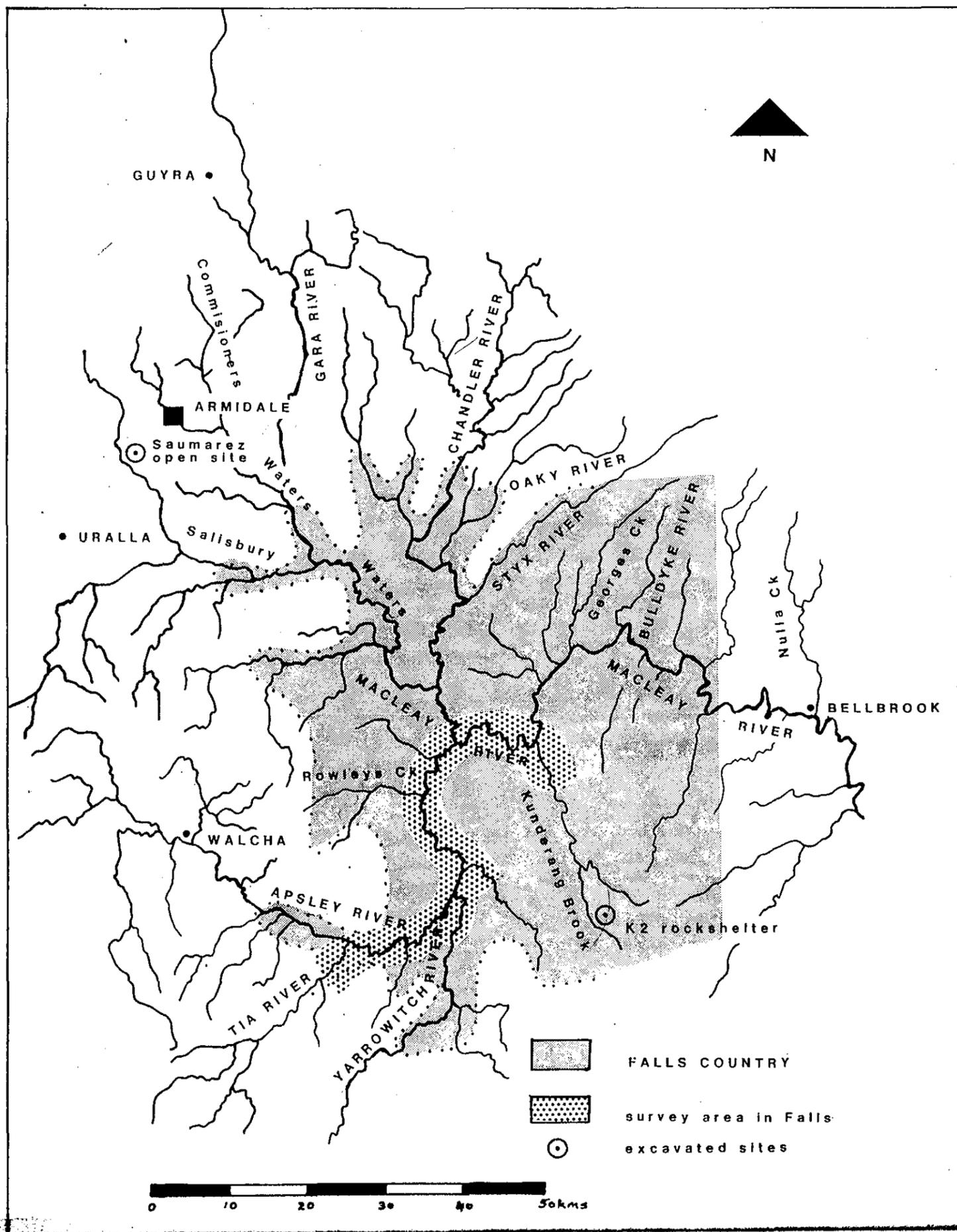


Figure 2.2: The study area: the upper and middle Macleay River catchment, northeastern N.S.W.

### 2.1.1.2 Climate

Climate on the tablelands shows clinal variation from east to west. Rainfall, number of wet days and number of frosts per year are all highest in the east. Conversely, temperatures and evaporation levels are highest in the west. This pattern reflects altitudes and distance from the sea (Hobbs and Jackson, 1977). Rainfall is highest in late summer- early autumn with an average of 140mm falling in the east in each month of this period, decreasing to 75mm in the west over the same period. Winter has the lowest mean monthly rainfall with 75mm per month and 25-40mm per month in the east and west respectively. In the east temperatures have a mean monthly maximum of 28°C, rising to 32°C in the west. The mean monthly minimum temperature occurs in July when 0°C is consistently recorded (Hobbs and Jackson, 1977).

The tablelands experience a frost period which extends for five months of the year with an average of 100 frosts in this period (Hobbs and Jackson, 1977: Table 8.13). Nevertheless, Armidale, Bundarra and Inverell do not differ significantly from each other or from localities on the western slopes, such as Tamworth, in the length and overall severity of winter. Bundarra has a frost period of some 176 days, Tamworth some 158 days (Foley, 1945). During the months of May-September the mean monthly minimum temperatures of Barraba are consistently lower than Armidale. During the same period the mean monthly temperatures of Inverell are higher than those of Tamworth (Hobbs and Jackson 1977:95, Table 8.11).

Even in extremely localized situations there can be major variations in temperature. For instance, mean temperatures on low-lying ground are up to 4.3°C in spring and 7.8°C in autumn. No appreciable differences (0.7°C) have been recorded in summer (Linacre and Hobbs, 1977: Table 7.2). The simplistic models of group movement involving appeals to the supposed harshness of the tablelands as an explanation for movement to the western slopes have not taken stock of two points:

1. movement to the western slopes does not guarantee less harsh climatic conditions in winter; and
2. broad regional trends mask major variations in local conditions that may have been significant in determining human behaviour.

### 2.1.1.3 Geology and Pedology

The basal geology of the region is dominated by marine sediments of Paleozoic age. There are also large expanses of granodiorites and granites though these are more common in the Glen Innes-Tenterfield districts. Basalts dating to 50-20 million years are also found (Harrington, 1977). In terms of raw materials for stone artefact manufacture the tablelands offer a wide

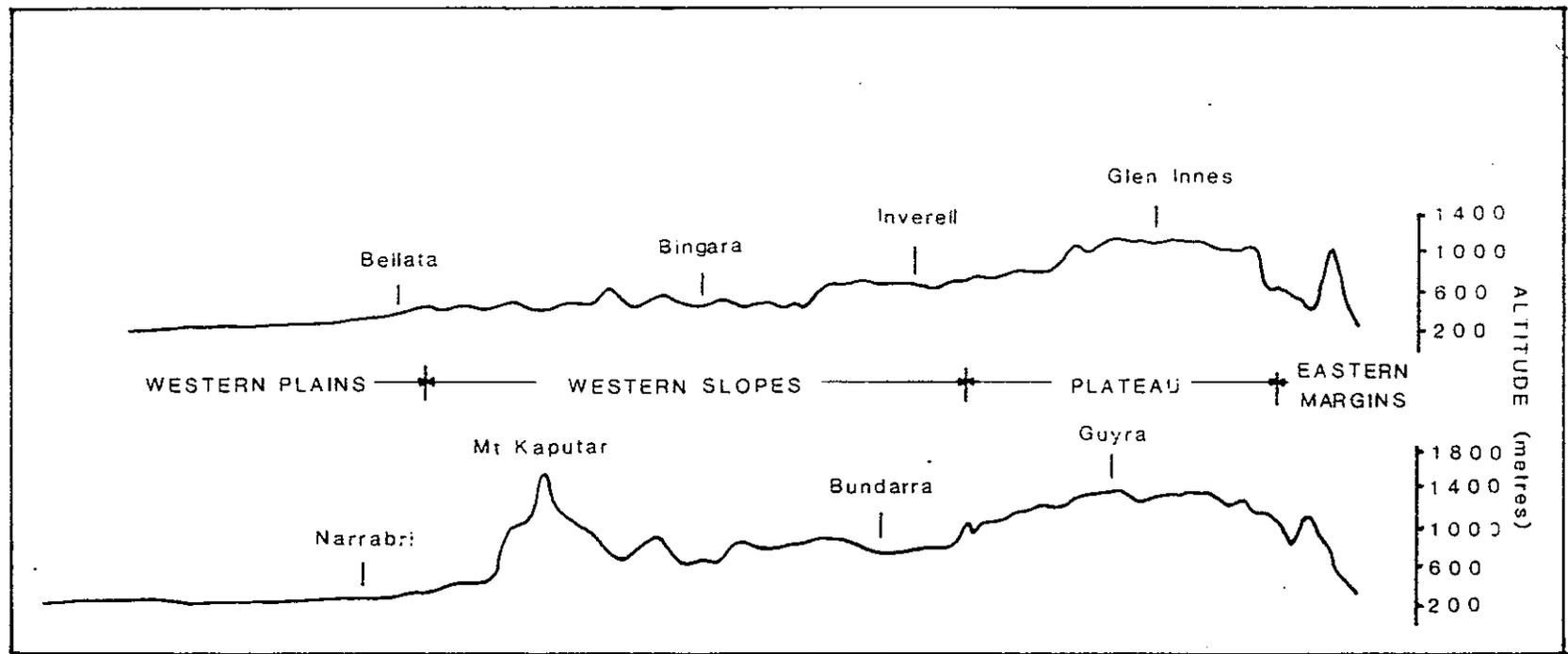


Figure 2.3: Section across the New England Tablelands and western slopes.

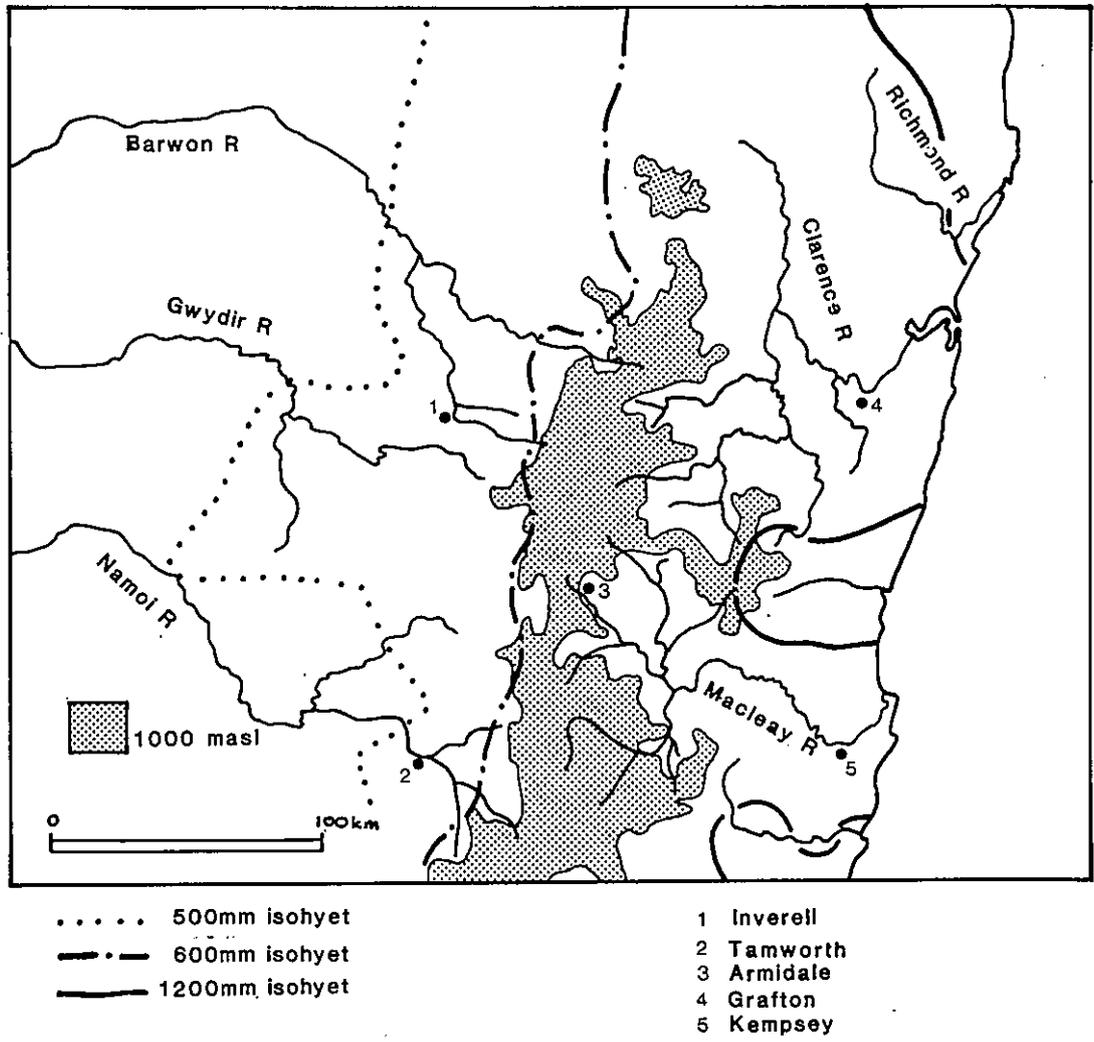


Figure 2.4: Annual rainfall patterns in northeastern N.S.W.

diversity, and widespread but limited outcrops, of crystocrystallines of good quality. The Paleozoic rocks offer cherts, mudstone, jasper and greywacke. These are widespread in their distribution, but faulting has resulted in much of this stone being unsuitable for knapping. Volcanics and metamorphics provide the raw material for high-quality ground-edge tools. Finally, whatever their origin (see Connolly, 1985), there are outcrops of silcrete throughout the southern portions of the tablelands though quality is somewhat variable. Basalt flows also produce numerous freshwater springs as a consequence of the vesicular layers in columnar basalts and at the contacts of the various flows and the underlying rock, offering another source of water.

Unfortunately, no detailed land system analysis has yet been undertaken of the New England Tablelands. In lieu of such a study the following observations are offered. Firstly, erosion is not considered to be a major problem on the tablelands, though it should certainly not be considered a depositional environment. While sheet erosion and gulying are present, such processes have not wrought major changes in soil type. For instance, gulying is found on less than 30% of watercourses even though large-scale land clearance has been undertaken. The tablelands could therefore, be said to be a highly stable environmental zone. This observation has two implications for the present study:

1. present-day soil distribution will closely reflect the pre-European pattern; and
2. exposure of archaeological sites will largely be restricted to localized erosional events and soil disturbance. This has had a major impact on the design of survey strategy on the tablelands utilized in this study.

While there is relationship between parent material and soil type it is by no means simple or direct. The soil situation in the region is very complex with 29 great soil groups found, their location and extent varying in relation to factors such as rainfall, temperature and topography as well as geology (McGarity, 1977: 53). Comments below refer to the relative productivity of soils on the tablelands. Although they have been made by soil scientists concerned with modern agricultural practises in mind, they do serve as a guide to the prehistoric situation, particularly as they have a major bearing on vegetation across the tablelands (see following section). Soils are categorised according to great soil type, as against Northcote or other systems, simply because this is the system used by those agronomists who have worked on the tablelands.

In the Armidale-Walcha area, which forms the focus of this study, yellow and red podzolic soils are used for pasturing sheep and cattle, but heavy additions of fertilizer are required for

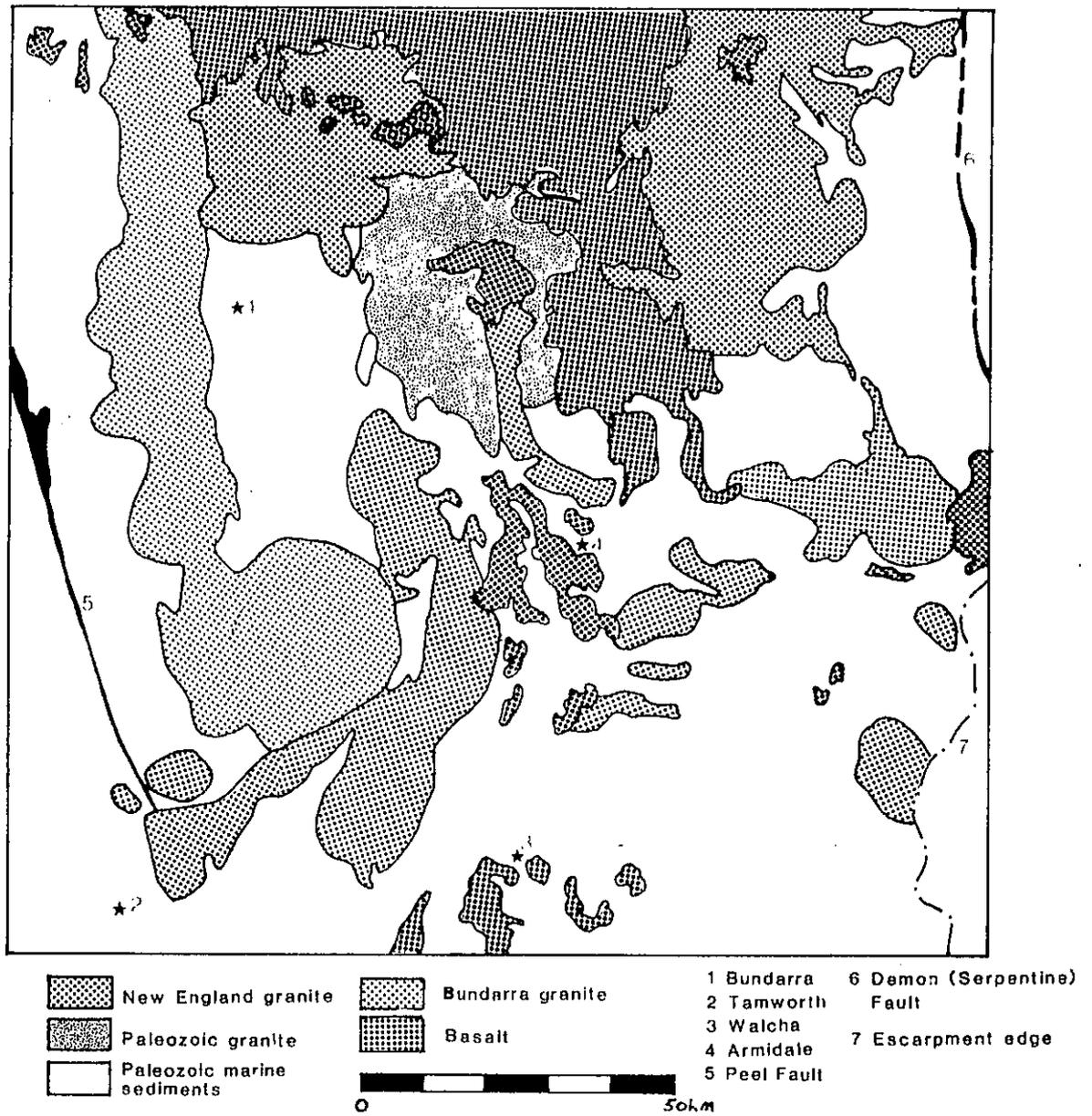


Figure 2.5: Geology of the northern tablelands and western slopes of New South Wales (after Harrington, 1977).

good stock carrying capacity. The red podzolics can be very good soils and require little fertilizer for high yields (McGarity, 1977: 65-9). However, along much of the eastern sections of the tablelands these red podzols tend towards a skeletal form, with substantially lower productivity. The yellow podzolic-grey podzolic association is a poor soil and has low productivity. Similarly, the solodized-solonetz yellow earths are deficient in certain minerals and have low productivity, particularly in the extensive skeletal form found across the tablelands. The occurrences of chocolate prairie, krasnozem and euchrozem soils on the tablelands are more limited than the podzols and solodized-solonetz. The prairies, krasnozems and euchrozems, however, are extremely rich and highly productive (McGarity 1977: 67; see also Jessup, 1965). Although there are extensive areas of red and yellow podzolic soils on the tablelands, large patches of other soil types occur commonly within these podzolic areas. In this way, the tablelands are very different to the north-western slopes and plains, which for vast areas are dominated by the self-mulching black and brown soils.

#### 2.1.1.4 Vegetation

The vegetational communities of the New England Tablelands have been much altered by modern land-use practices. Much of the tablelands is now totally devoid of tree cover; only in the east do any extensive tracts of forest occur. This large-scale clearance along with the ravages of eucalypt dieback has done much to create an image of a harsh and depauperate environment. Be this as it may, Williams (1963:46) was able to discern ten major vegetational communities in a transect running from east to west. These include wet sclerophyll forest, grass forest, tall woodland, savannah woodland, dry sclerophyll forest, sclerophyll shrub woodland, heath, scrub fen and bog.

Wet sclerophyll forest is found only in the extreme eastern portion of the tableland where rainfall is above 1,125mm annually. It is dominated below 1,100m by *E. salignad*, *E. laeropinae* and *E. campanulata* while above 1,100m *E. oblique*, *E. fastigata* and *E. dalrympleana* are the major species. By far the most common vegetational forms, however, are the woodlands and grassy forests which form a continuously intergrading series of communities across the tablelands. The dominant species are *E. viminalis* and *E. pauciflora*. The differences in these communities are minor, hinging on tree height and shape, and distance between trees. Some variation in species is also discernable. On the fertile chocolate and prairie soils which derive from basalt flows an *E. viminalis* community is more common. Above 1,500 m.a.s.l. *E. pauciflora* monopolizes the community. On the poorer red and yellow podzolics, tall or savannah woodlands are common, with *E. blakelyi* and *E. melliodora* the dominant species.

Dry sclerophyll forests, heath and scrub communities are restricted to stony, skeletal or sandy podzolics, are most common on the eastern edge of the tablelands and are only found in very

small areas elsewhere. The shrub layers of these communities are very dense, but most of the species present belong to only five or six families. Fen and bog are to be found in the granite areas of the wet, high-altitude eastern portion of the plateau. Here there are to be found broad, shallow valleys which are waterlogged for much of the year. Trees are excluded from these valleys, which are dominated by species of *Restio*, *Lepidosperma* and *Juncus*.

It is apparent then that open woodlands with a thick grass pasture are the dominant vegetational form of the tablelands: evidence presented below suggests this reflects the pattern at contact. It is necessary, for the arguments later developed to have a clear idea of the nature of these grasslands. Once again, modern land-use practises have led to the introduction of exotic pastures to improve fodder quality. As part of a long-term project into the economic viability of native grasses, Whalley and others (see Lodge and Whalley, 1985) have attempted to define the indigenous native grasses common to the New England Tablelands. The following discussion draws on the results of this study.

The native grasses of the tablelands can be divided into two main categories and five distinct sub-groups, on the basis of growth pattern characteristics. The two main categories are the annuals and perennials, that is, respectively, those that germinate, grow, flower, seed and die each year and those that flower, seed and then lie dormant but not dead for another part of the year. These can then be sub-divided into the following groups:

1. Warm season perennials - these are frost susceptible, start their growth in late spring, flower and seed in summer and lie dormant for autumn and winter.
2. Cool season perennials - these grow in winter, flower and seed in spring, lie dormant in summer and are frost tolerant;
3. Year-long green perennials - these are frost tolerant and are green throughout the year, and although they mainly grow in summer, flower and seed in both spring and autumn and constitute good fodder in winter;
4. Warm season annuals - these germinate in spring, grow in summer, flower, seed and die in autumn as they are extremely frost sensitive; and,
5. Cool season annuals - these are frost tolerant, grow in winter, flower, seed and die in late spring.

In terms of species diversity warm season perennials dominate with more than 60 species having been recorded (Norton, 1970). Next comes the year-long green perennials with some 20 species, followed by the cool season perennials with 4 species, the cool season annuals with 2 species and the warm season annuals with 1 species. In terms of abundance warm season perennials are dominant, followed by year-long green perennials. Cool season perennials are at their peak in fodder in summer when they are high in energy, protein and moisture content. The year-long green perennials are at their best in summer but are highly nutritious and succulent even in the harshest time of winter particularly if growing under trees where the canopy protects them from frost. The cool season perennials are the reverse of the warm season varieties, being at their prime during the winter months.

Whalley (personal communication; see also Norton, 1971:8) considers that firing practises may be critical in the expansion and contraction of these various grasses. Early spring firing will reduce the cool season and year long green perennials and favour warm season perennials by reducing shade competition. Summer burning on the other hand will disadvantage the warm season perennials by destroying them before they go to seed and will thus favour the cool season and year long green perennials.

One consequence of this year-round availability of succulent fodder relates to macropod behaviour. With nutritious and moist pasture forming a major part of their diet, macropods do not have to frequent sources of fresh water such as creeks and springs as they can obtain their moisture requirements from their food (P. J. Jarman personal communication). Therefore, they do not become more or less restricted in their range over the course of a year.

#### 2.1.1.5 Fauna

There is a very diverse fauna on the tablelands with more than 50 species of native mammal having been recorded, over 2120 species of birds, a wide range of reptiles and amphibians and a number of species of fish. Some interesting features of each group are discussed below, with greatest weight being attached to macropods for reasons which will become more obvious when we consider Aboriginal subsistence strategies.

##### 2.1.1.5.1 *Mammals*

These are all land mammals and include at least 11 macropod species, 2 species of possum, koalas, wombats, and bandicoots to name those of major economic importance. The macropods include the eastern grey kangaroo (*M. giganteus*), wallaroo (*M. robustus*), red-necked wallaby (*M. ruogriseus*), whiptail wallaby (*M. parryi*), black-striped wallaby (*M. dorsalis*), swamp wallaby (*M. bicolor*), brush-tailed rock wallaby (*Petrogale penicillata*), rufous bettongs (*Aepyprymnus rufescens*), red-legged pademelons (*Thylogale stigmatica*), red-necked pademelons (*Thylogale thetis*) and long-nosed potoroo (*Potorous tridactylus*) (Southwell, 1982;

Jarman *et. al.*, 1987). Of these the eastern grey kangaroo, red-necked wallaby, wallaroo and whiptail wallaby are the most common and it is these I will concentrate on here.

1. Eastern grey kangaroo - this is by far the most common macropod on the tableland. In a recent study densities of 0.5 individuals per hectare were recorded (Southwell, 1987: 17). Densities approaching almost one individual per hectare have also been recorded but these are rare (Southwell, 1984: 427). This was in an area with very high biomass. Density is directly related to biomass, particularly of grasses and herbs (Southwell, 1984: 425 and 427, Figure 2 and Table 1). Its highest densities are to be found on cleared grazing land and open forest (Southwell, 1982: 14; 1987: 18ff). Studies undertaken both in the New England Tablelands and elsewhere (Southwell, 1982 and 1987) have shown that the distribution of grey kangaroos is very closely governed by the availability of good quality pasture, with the 'roos actively seeking out green feed. Firebreaks and prescribed burning have been noted to attract grey kangaroos to new areas by opening up dense undergrowth and thereby encouraging the growth of grass; there being a very close inverse relationship between canopy density and herbage biomass. Indeed in a recent study (P.J. Jarman, personal communication) it was found that grey kangaroos were grazing on newly-fired ground within a matter of days of burning. The number of animals grazing on the fired areas reached a peak in the second month after firing and thereafter decreased until after 14 months biomass of the fired area was lower than that of the unburnt areas. However, throughout the 14 month period after firing numbers (and density) of grey kangaroos grazing on the burnt areas was always significantly higher than that of the unburnt areas.

Grey kangaroos are favoured by partial clearing of land - they are uncommon in heavy forest. Indeed Southwell (1987:29) has documented a case where grey kangaroos, previously unknown in a heavily-wooded area, immediately colonized it once clearing and pasture establishment had taken place.

Group size of grey kangaroos does not appear to vary significantly on a seasonal basis on the tablelands (Southwell, 1984:431). Size of social units seems to be closely related to overall population density but does not fluctuate markedly with seasonal change. On the tablelands mean group size averages 5.5 individuals, ranging from 4.8 in winter to 6.3 in summer (P. J. Jarman, personal communication). These figures should not, however, be read as indicating that large groupings do not occur. Viewing an hypothetical case, in a population of 100 individuals in a given area, 60 will be found in 3 groups of 20. The remaining 40 will be found in 10-15 groups ranging from 2 to 4 individuals (P.J. Jarman, personal communication). As a consequence one is more likely to encounter a small group simply because there are more of them even though the majority of individuals live in larger groups. Although not highly significant, the smaller

mean group size in winter will result in there being more smaller groups in this season than in summer (P.J. Jarman personal communication). This is the case with all the larger macropods on the tablelands.

The grey kangaroo is a fairly sedentary animal on the tablelands, moving very little in the course of the year. Availability of year-round moist, nutritious fodder (see above) is partly responsible for this which also explains the insignificant variation in group size (Southwell, 1984). Where individuals live close to a woodland/pasture ecozone it is normal for them to retreat into the woodland in summer (P.J. Jarman, personal communication).

2. Red-necked wallabies rest and pasture. It is normally seen as individuals or in small groups (Jarman et al, 1987). Densities of up to 0.31 animals per hectare in unfired environments have been recorded. However, on fired areas densities as high as 0.8/hectare have been noted. In contrast to the grey kangaroo which moves well into pastured areas away from woodland (Southwell, 1987), the red-necked wallaby prefers to stay close to the edge of woodland. This seems to be related to food requirements with a wider species diversity including dicotyledons as well as grasses being an essential element of red-necked wallaby diet, and such diversity is greatest close to the interface of forest and pasture (Southwell, 1987). Also in contrast to grey kangaroos, red-necked wallabies do not move onto burnt ground until some four to five months after the burning event. The reasons for this are not clear but simplistic arguments involving successional theory do not seem to fit. However, once they started to exploit the fired area their utilization of this area was constant and densities remained at least two times as high as for non-burnt areas for the next 9 months (P.J. Jarman, personal communication).

3. Whiptail wallabies - although this has been recorded as the third most common species in studies on the tablelands (Southwell, 1987), it comes a distant third: only a few relatively isolated populations exist. Whiptails have been recorded at densities of 0.025 per hectare in the Wallaby Creek area (Southwell, 1987). They prefer open forest and tussock-dominated pasture (Jarman *et. al.*, 1987: 11). Although elsewhere on the tablelands they have been recorded in higher densities (for example Kaufman, 1974) and moving around in large groups, in the Wallaby Creek locale they are most commonly seen singly or in groups of up to six individuals. They are active both diurnally and nocturnally and are mainly grazers. Of considerable interest is the fact that this species did not alter its behaviour in response to availability of fired pasture. There was no significant difference in densities of whiptails seen on fired and unfired areas in the study area. In contrast to grey kangaroos, however, whiptail wallabies did show a significant change in group size on a seasonal basis. Group size was greatest during later winter and spring when good pasture was available (Kaufman, 1974).

4. Wallaroos - this animal mainly frequents rocky hill country during the daytime, coming out at night to feed on fringing pasture. They do not like to move far from their sheltering areas when feeding. In winter they will move further and feed for longer away from rocky areas than they do in summer (Taylor, 1981: 322). Mean group size of wallaroos varies between 1.4 and 2.2 individuals (Taylor, 1982: 235). The implication of this is that many more wallaroos were seen as single individuals than was the case for the macropod species considered here. However, as with grey kangaroos mean group size did not vary from season to season. It did, however, vary with total population density and at feeding and resting times, being larger at feeding times (Taylor, 1982). This largely reflects the problems individuals have in maintaining group cohesion in rough, heavily wooded country.

2.1.1.5.2 *Avifauna*

A wide variety of bird species are found on the tablelands, and more than 50% are both widespread and abundant in their distribution (Noske, 1982). There are 30 species of waterfowl. For these birds the time of greatest prevalence is February through April. This is a function of two related factors. Studies undertaken on the tablelands indicate that the numbers of waterbirds at lagoons and swamps rise and fall in direct relation to the water level of these bodies of water. This period (February-April) is also the time of greatest rainfall and hence water availability on the tablelands. While numbers of waterbirds decrease from approximately May to December due to migration and decreased water levels, numbers on some near-permanent lagoons do not drop as markedly as those on more ephemeral water sources. Llangothlin and Little Llangothlin lagoons appear to attract birds from ephemeral sources to their more constant riparian conditions, that is waterfowl populations remain steady, if not actually increasing, on these larger bodies of water. Little is known of the ecology of other birds found on the tablelands.

2.1.1.5.3 *Reptiles, Amphibians and Crustaceans*

There has been virtually no detailed study of the reptiles and amphibians of this region. Tortoises can be found in large numbers in the lagoons, swamps and marches particularly during spring and summer, when they come out of hibernation and their eggs hatch. A wide range of snakes are present with tiger snakes, brown snakes and red-bellied black snakes being the most common. Goannas and larger lizards, other than the common blue-tongue are fairly rare. It is noteworthy that during the last major drought, which was a four year event, a number of species have become very rare on the tablelands due to the limited availability of water and swampy conditions (Taylor, 1983).

Yabbies or crayfish are very common in lagoons, small creeks and farm dams. The large size attained is a feature of these crustaceans (see Wyndham, 1889; personal observation).

#### 2.1.1.5.4 Fish

The fish species of the tablelands are extremely restricted, and can be divided into two groups: those of eastern flowing and those of the western flowing rivers. In the rivers of the eastern watershed only one fish species reaches the tablelands, this being the long-finned eel (*Anguilla reinhardtii*), but it is very common, and can be found in most creeks. By and large, the eastern tablelands are depauperate of fish species because of the high waterfalls at the heads of the various gorges through which these rivers flow. Only the long-finned eel can circumvent these because of their ability to travel along damp ground rather than attempt the impossible swim up the falls. Long-finned eels are known to extend to the extremities of the eastern-flowing streams of the tablelands (Pidgeon, 1982: 48). Adult members of this species migrate to the sea in autumn and winter, and return with year-old elvers in spring and early summer. However, eels are available in the lagoons and swamps throughout the year, as not all adults migrate at the same time. Large numbers of these eels have been collected from lagoons on the eastern watershed when water levels have dropped dramatically during droughts (Davidson, 1982).

In the western flowing rivers, species common to the Murray-Darling system are recorded. However, these fish, which include Murray cod and silver perch amongst others, are normally found in the lower reaches rather than in the upper reaches of such rivers on the tablelands proper.

### 2.1.2 The Sub-Coastal Zone and Gorges

#### 2.1.2.1 Definition

The area under review here comprises the middle reaches of the Macleay River catchment. The upper reaches of this system are to be found on the tablelands, while the lower reaches are to be found in the very small lower Macleay flood plain and coastal fringe. This latter area comprises less than 6% of the total area of the Macleay catchment. The greater proportion is to be found in the middle reaches of the system where narrow flood plain in steeply dissected, mountainous country is the norm.

This mountainous country forms a part of the enormous geomorphological zone that runs the length of the Australian east coast and is referred to as the Great Escarpment: a zone clearly dividing the narrow coastal plain of the east coast from the eastern uplands, or Great Divide. This zone commenced development at the completion of the Tertiary uplifts that produced the eastern uplands. The highly dissected form of the country is a result of the active erosion of the

tablelands by eastern flowing rivers, following the series of uplifts (Ollier, 1977). The present landscapes evolved in the Tertiary and Quaternary periods. The heads of the gorges are the most active areas of erosion due to the steep gradients achieved there, ranging between  $40^{\circ}$  and  $60^{\circ}$ . Local relief in the gorges can be up to 600m, and the bases of some gorges are only a few metres wide. In the Apsley gorge relief is as high as 1,000 metres (King, 1980). A number of rivers, all tributaries of the Macleay, flow through this area. They include the Apsley, Styx and Gara Rivers, all of which are permanent water courses.

#### 2.1.2.2 Climate

This region is characterized by a rainshadow effect in many parts of the system, so that while there are some areas with rainfall of over 1,000mm per annum, most receive less than 900mm and some parts only 750mm annually. As on the tablelands, the pattern of rainfall in the gorges consists of a wet summer and dry winter. Average rainfall in the driest months is less than half that of the wettest. Nor is rainfall consistent from year to year: the area has been described as being of moderately high variability and moderately low reliability.

Temperatures in the gorges are controlled by altitude and topography. With an altitudinal thermal gradient of  $5^{\circ}$  C every 1,000m, temperatures on the valley floors are significantly warmer than those on the tablelands, at least during the day. As a general rule, however, this should be tempered with the observation of two points:

1. shading effects are likely to decrease daytime maxima, and reduce day length; and,
2. katabatic effects, or cold air drainage, from the tablelands is common in winter. This varies depending on valley width - the wider the valley the more profound is the effect. In very narrow valleys warm air seems to be trapped in the gorges at night and so below zero temperatures are a rarity (King, 1980). Elsewhere, however, over 100 days of frost per year are experienced.

As a rule it is true that extremes of temperature are much less in the gorges than is the case on the tablelands (Hobbs and Jackson, 1977).

#### 2.1.2.3 Geology, Pedology and Land Systems

The geology of the region is fairly simple. The dominant geological formations are the early Paleozoic marine sediments, consisting mainly of greywackes and argillites with a concentration of cherts and jaspers in a small area centred on the Front Tableland and the Apsley River between the Double Gullies and Green Creek. In the later Permian period when there was igneous activity, grandiorites and diorites were laid down in the Hillgrove and

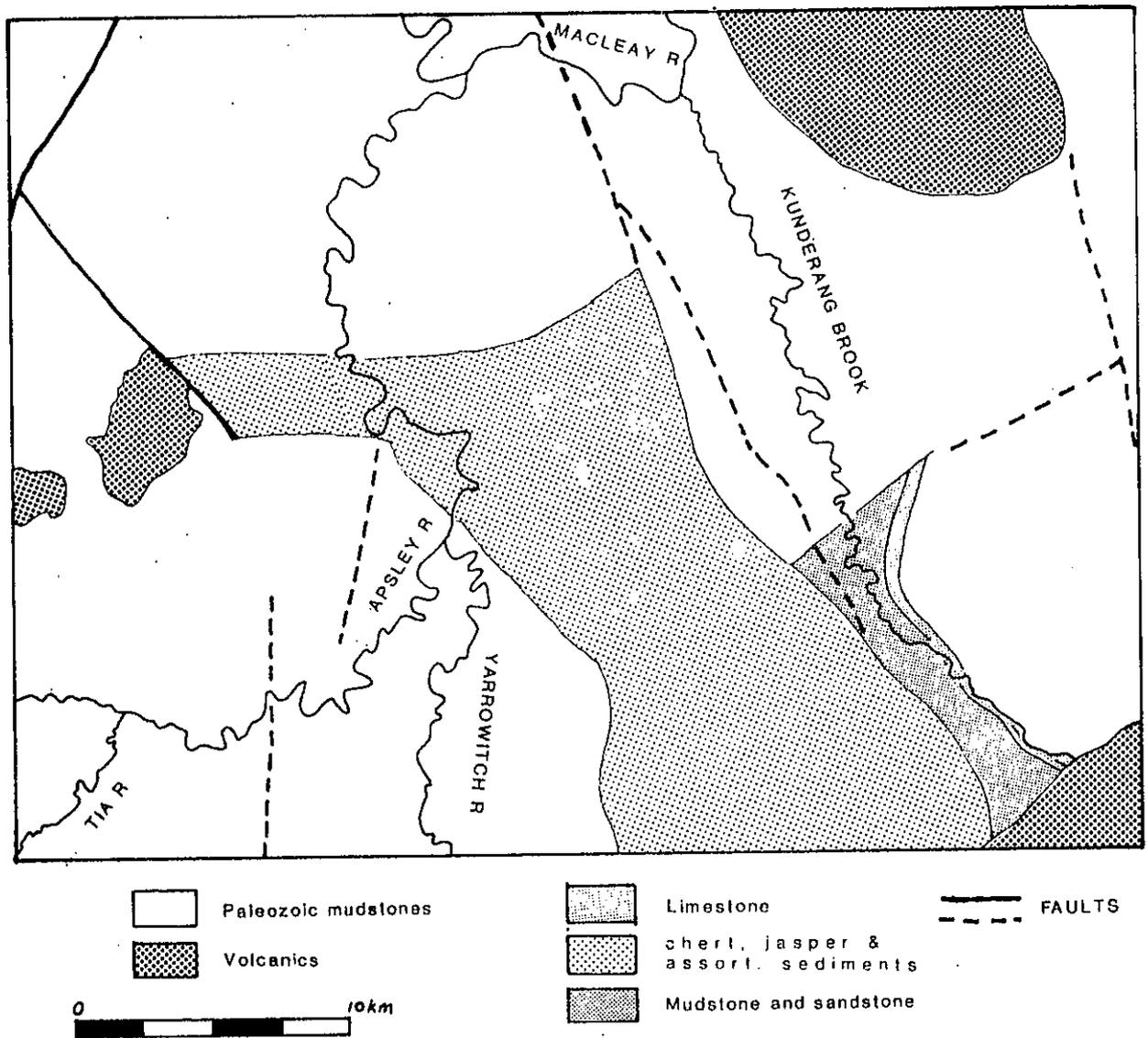


Figure 2.6: Geology of the Apsley-Macleay River system.

Rowley's Creek-Rusden Creek areas. Then during the Tertiary lava flows, common to a large area of northeastern New South Wales, deposited basalts which are largely restricted to the gorge tops (Harrington, 1977; cf. Ollier, 1982). The final geological unit is a belt of limestone, of Permian age, which runs west from Kempsey into the gorge system outcropping at various places. It extends into the Kunderang Brook locale. Points of archaeological interest stemming from this geological appraisal of the area are:

1. the Paleozoic marine sediments are not conducive to cavernous weathering or exfoliation, and hence there is little rockshelter formation;
2. the rockshelter formation that does occur is largely limited to the limestone outcrops; and,
3. while the general area is dominated by sedimentary rock in which argillite is common, the only large outcrop of chert and jasper is in the vicinity of Front Tableland.

Viewed in the most general terms it can be said that the steep slopes of the gorges are mainly composed of skeletal soils with narrow strips of alluvium being found on the valley floor (McGarity, 1977). Such a description, however, simplifies a complex mozaic of land systems in which geology and alluvial development play a significant role. Morgan (1985) in a comprehensive analysis of land systems utilizing factors such as basal geology, slope form, soil formation, altitude and vegetational communities was able to define a wide range of different units in the study area. The results are too complex to discuss in detail here, but the following salient points emerge:

1. the area with the best development of alluvial deposits in the whole system is those sections of the Apsley and Yarrowitch Rivers, identified as the Apsley-Yarrowitch land system in figure 2.7, lying at the southern end of Front Tableland; and,
2. those areas with good alluvial development can also be viewed as the most productive parts, in terms of animal populations and variety of plant communities, of the whole middle reaches of the Macleay catchment.
3. in the gorge bottom, there is little floristic and faunal diversity (see below), but the density of various resources will be higher in the areas with good alluvial development.

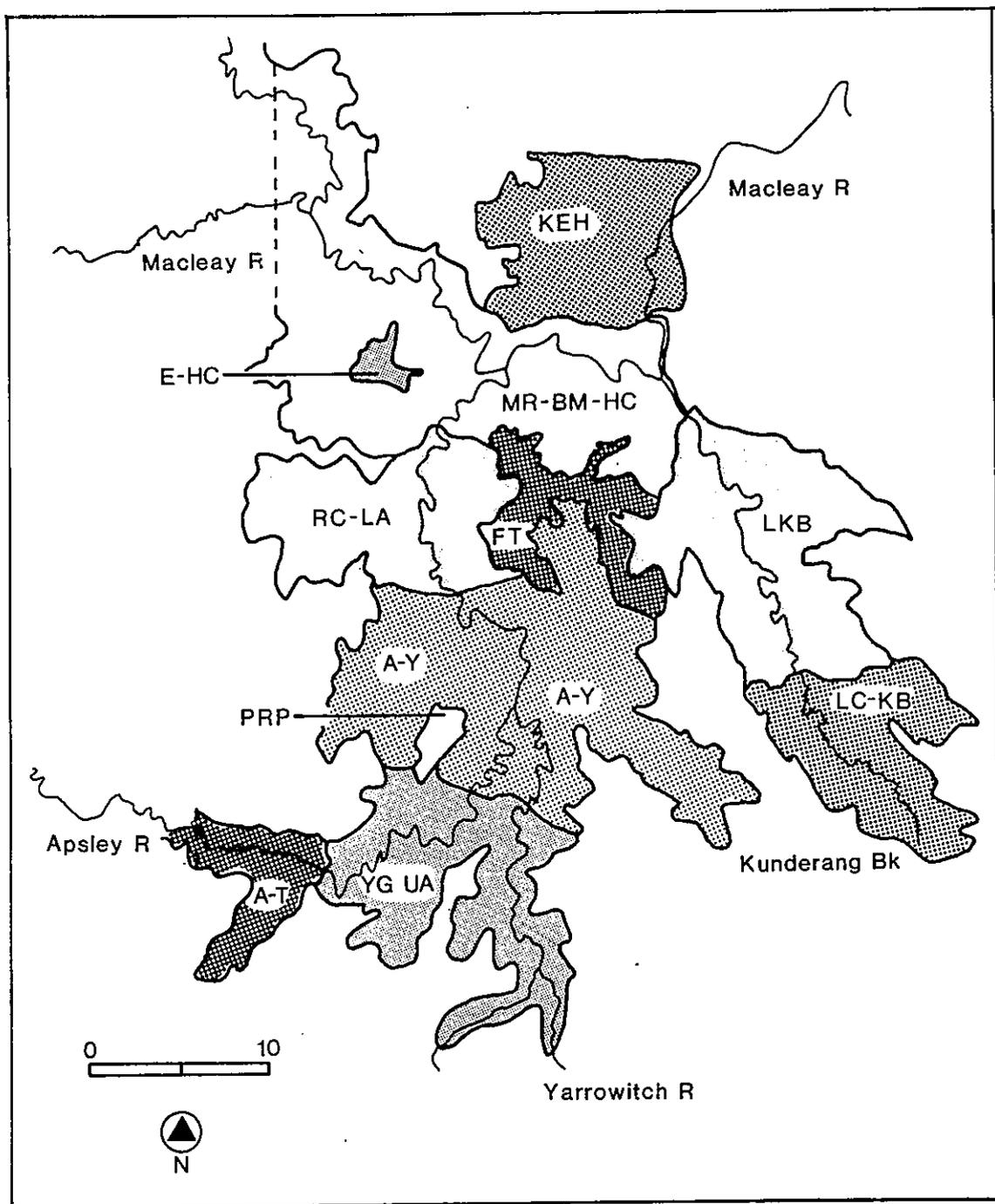


Figure 2.7: Landsystems in the Upper and Middle Macleay River system (after Morgan, 1985). Explanations of each area given on next page.

KEH	KUNDERANG EAST HILLS
MR-BM-HC	MACLEAY RIVER VALLEY, BLUE MTN/HOLE CK GORGES
E-HC	ENMORE STATE FOREST, HOLE CREEK NATURE RESERVE
RC-LA	ROWLEYS CREEK - LOWER APSLEY RIVER
FT	FRONT TABLELAND
LKB	LOWER KUNDERANG BROOK
LC-KB	LIMESTONE CREEK - KUNDERANG BROOK
A-Y	APSLEY - YARROWITCH VALLEYS
YG-UA	YARROWITCH GORGE - UPPER APSLEY RIVER
A-T	APSLEY AND TIA GORGES
PRP	PARADISE ROCKS PLATEAU

#### 2.1.2.4 Vegetation

The floristic structure of this area represents the interaction of topography, climate, soil formation/geology, and the differential distribution of tableland and coastal species of plants. Without wishing to oversimplify what is in fact a complex mosaic of vegetational communities, we can define three broad types. The dominant vegetational form is open sclerophyll woodland (King, 1980: 1). This is found both on the steep gorge slopes and on some parts of the valley floors. A wide range of eucalypts are found, with over 24 species having been recorded in the upper part of the system alone (Whalley and Griffith, 1982: 6).

A narrow gallery woodland extends along the banks of the rivers. *Casuarina cunninghamiana* is the major tree species, with an understorey composed of *Callistemon viminalis* and *Melaleuca bracteata*. This gallery woodland sometimes extends up the tributaries of the main river system and merges into the third vegetation type - dry rainforest (Whalley and Griffiths, 1982).

The rainforest is restricted to the gorges, as opposed to the tablelands, because of warmer minimum temperatures, greater shelter from wind and greater availability of ground water. Significantly the stands do *not* run down to the valley floors where frost would kill them. Although the individual stands of dry rainforest are relatively small there are a large number of them and total area is quite large - over 4% of vegetation in the middle Macleay system is composed of this type. The Macleay catchment dry rainforest has a very high species diversity; far greater than that encountered in stands in other parts of New South Wales and Queensland. Sixty-five species of trees and shrubs, twenty-five vines and twelve species of vascular epiphytes have been recorded. The most common tree species are: *Backhousia sciadophora*, *Diospyros australis*, and *Notelaea microcarpa var. velutina* (King, 1981).

#### 2.1.2.5 Fauna

The gorge country shares many of the animals found on the tablelands. There is a very wide species diversity throughout the system. Thus, 60 species of land mammals are believed to be present, along with 153 species of birds, 83 species of reptile and 5 fish species with economic potential (Noske, 1982; Edgar, 1982; Southwell, 1982; Taylor, 1982; Pidgeon, 1982).

Unfortunately, no detailed ecological studies have been undertaken in the gorge system. The following brief observations have been made.

##### 2.1.2.5.1 Mammals

In addition to a very wide variety of small mammals which include two types of bandicoot, four possum species, wombats, numerous bat species, echidna and platypus (see Edgar, 1982: Table 1), five species of macropods are found in the gorges. The following comments relate to these species of animals.

1. Eastern grey kangaroos - these are found in the gorge system but at very much lower densities than on the tablelands. They are restricted to the flats and gallery woodland on the floor of the valleys. No grey kangaroos have been sighted in the rainforest or on the steep slopes (Southwell, 1982:14).
2. Wallaroos - no detailed counts of this species have been made but it is relatively common in the gorges. It is found at all elevations about the valley floor, but is more abundant at lower elevations. Observations suggest that it moves to the gallery woodland to feed and then retreats to the lower slopes to rest and sleep (Southwell, 1982: 14; Robertshaw, personal communication).
3. Red-necked wallabies - these are found either on the tablelands or in the more open country closer to the coast. They do not frequent the highly dissected gorge country (Southwell, 1982:15; personal observation).
4. Swamp wallabies - this species occurs in low numbers in open forest on the gorge rim and in the woodlands within a few hundred metres of the valley floor, exploiting small patches of grasses (Southwell, 1982: 15). Swamp wallabies rarely venture onto cleared land, and may sometimes be found in dry rainforest.
5. Brush-tailed wallabies - these are restricted to cliff faces and boulder piles, and as such their distribution is somewhat independent of vegetation type. Cliff faces and boulder piles are quite common on the steep gorge slopes, particularly on the upper parts of the Apsley and Macleay Rivers. Suitable sites for habitation may occur at any elevation from valley floor to gorge top (Southwell, 1982: 15).

#### 2.1.2.5.2 *Avifauna*

Little is known of bird ecology in the gorges (Noske, 1982). However, there are a large number of species including numerous species of waterfowl. In view of the permanent water available in the system the diminution of numbers and more restricted range of waterfowl found on the tablelands in winter (see above) is not likely to be a feature of their behaviour in the gorges.

#### 2.1.2.5.3 *Reptiles, Amphibians and Crustaceans*

Other than species lists for the area, virtually nothing is known of reptile behaviour in the gorge system. Taylor (1983:13) has noted that few reptiles, other than the Lace Monitor, *Varanus varius*, were found on the steep slopes of the gorges. Nearly all were observed within 0.5 km of the river, where reasonable vegetation cover occurred. It also seems likely that the Apsley River is an important refuge for reptiles and amphibians in time of drought as it is an area where cover and associated insect life (the food of most reptiles and frogs) is maintained over such times of stress. Furthermore, during moister periods it is also likely that the Apsley gorge afforded suitable habitats to a number of species normally only found further downstream. It is reasonable to expect these species to expand to fill this larger niche (Taylor, 1983:14).

#### 2.1.2.5.4 *Fish*

Of the eleven species of fish recorded in the streams flowing through the gorges, only seven are large enough to have any economic potential. Two species of eel (*Anguilla reinhardtii* and *Anguilla australis*) occur, as do two species of mullet: *Mugil cephalus*, the common sea mullet, and *Trachystoma petardi*, the fresh water mullet (Pidgeon, 1982: 46-7). As well as these, bass (*Macquaria nobemaculeata*), freshwater catfish (*Tandanus tandanus*) and freshwater herring (*Potanalosa richmondia*) have also been recorded in the middle reaches of the Macleay system (Pidgeon, 1982: 46-8).

Herring and sea mullet are by far the most common species, but the other species are by no means rare. Other than catfish, all these species are catadromous, migrating from freshwater reaches of the Apsley-Macleay system to the estuary and open sea for spawning (Pidgeon, 1983: 3). These movements take place largely in late autumn and early winter. The fish return in early spring (Pidgeon, 1983: 44). During spring and summer the fish population is static. It should be noted, however, that at no time do all members of a species migrate. That is, there is always a sizable population present in the Apsley-Macleay system, though it is larger in spring and summer than autumn and winter.

## 2.2 THE REGIONAL ENVIRONMENT AT CONTACT

In the view of most people concerned with documenting prehistoric Aboriginal society on the Tablelands emphasis has been placed on the apparent harshness of the environment. These people's perceptions have been influenced by present-day images of a barren, tree-less highland standing in marked contrast to the luxuriant vegetation of the coastal plain (see for example Belshaw, 1978: 69; Bowdler, 1981a: 105). Few have made any use, however, of the records of early settlers and explorers to examine in any detail the environment as its Aboriginal occupants would have known it. These paint a very different picture of the environment, one that displayed markedly different vegetational patterns and availability of resources to that we now see which reflects the results of 100 years of land clearance. It is my intention to challenge here the long-standing impression that the tablelands were a marginal environment for hunter-gatherers. Plant foods are not covered here: they are reviewed with in chapter 7.

### 2.2.1 Vegetation and Resource Zones of the Tablelands

Examination of early historical records makes it clear that while the New England Tablelands are perhaps not so rich an environment as the north coast, nevertheless they possessed a number of resource zones that would have made them an attractive proposition to prehistoric Aborigines. Four distinct zones can be identified.

The most extensive of these four was that which the early settlers described as 'parklands'. Oxley, the first European to traverse the tablelands in 1818, wrote: 'we proceeded through the finest open country, or rather park, imaginable' (1820: 291). He gave a more refined view of this parkland, describing it as 'broad ... open forest' of stringy bark and blue gum with good grass cover (Oxley, 1820: 289). This image of the tablelands is confirmed by a number of early settlers and visitors to the region. Henderson, who travelled up the Moonbi Range and along the tablelands on his way to taking up a station on the Macleay river, recorded lightly forested country over much of the area he covered (1851: vol 1: 244). He noted the 'openness of the country and the thinness of the wood'.

Mundy, on a trip through the region in the 1840's, described it similarly. He and his party rode ten miles through 'undulating, open woodland, affording excellent pasturage' (1852: vol 2:32). He noted that the area around Walcha was very lightly wooded. A government surveyor of the Uralla district, P.H. Henderson (1859), remarked that it was 'a well-watered, rugged area with poor granitic soil which was quite well, if rather openly, timbered with gum of various sorts and abounding in coarse grasses'. Such descriptions indicate that the woodlands and grassy forests argued by Williams (1963) as the dominant vegetation on the tablelands, were widely spread and were of some antiquity on the tablelands. There may have been, however,

slight variations in density of tree cover, with the hills being more heavily timbered and broad-bottomed valleys being more open (Whalley *et. al.*, 1978).

The second zone I have defined is that of large, grassy clearings, or 'plains' as some settlers called them (for example Crawford, 1939:1). There were areas devoid of any tree cover, surrounded by parklands or, in the Dorrigo district, rainforests (Henderson, 1980:121-6). Crawford (1939:1) records that a number of these 'plains' were found in the Tenterfield district. They varied in size from 200 to 1,000 acres (80.94 to 404.7 hectares respectively). He described them as being well-grassed, open and undulating, and with very few trees. McDonald, first Commissioner for Crown Lands in the Armidale district, established his headquarters on an extensive open plain at Armidale (Gilbert, 1982: 14). The Salisbury Plain to the southeast of Uralla was noted for its open and treeless form. One visitor remarked 'Salisbury Plain is an undulating tract, clear of trees and scrub, and clothed in good grass' (Anon cited in Norton, 1971: 3). Henderson (1851: vol 1: 242) wrote of the same area: 'The country now assumed the appearance of open and undulating downs, intersected here and there by low, wooded ranges'. Thus it can be seen that cleared areas such as these were widely distributed, though their areal extent varied considerably. The factors responsible for these 'plains' are discussed below.

Swamps/marshes and lagoons constitute the third major environmental zone. Like the 'plains' these were to be found over a wide area of the tablelands and varied considerably in their extent. Surface areas of the lagoons range from 24 to 455 hectares. Thirty five lagoon features have been recorded between Uralla and Glen Innes. The number of lagoons has not decreased since European settlement and though a number have filled with silt they are still an obvious landscape feature. Such is not the case, however, with swamps/marshes and smaller waterholes. In the last 150 years a large number of these have been drained, either fortuitously through the action of cattle or, in other cases, purposely by digging, or ploughing, of drainage ditches with the intention of stopping footrot and liver fluke in flocks of sheep (Cane, 1949: 25). Prior to this they were common. Oxley (1820: 293) noted that there were numerous wet hollows and swamps to the east of Walcha. On Salisbury Plain, a chain of waterholes and swamps 'of considerable extent' were to be found (Henderson, 1851: vol 1: 244; Mundy, 1852: vol II: 37-8). Crawford (1979:1) reports a 'number of treeless swamps' were recorded in the Tenterfield-Glen Innes district. Wyndham's (1890: 114) observations would seem to imply that swamps/wetlands were quite common on the tablelands.

The fourth zone that can be identified consists of the rivers and creeks flowing off the tablelands. As noted earlier, few of these can be considered permanent. Those that are, however, would have been quite important. These streams figure little in early accounts, perhaps emphasizing the small number that exist. Oxley's comments stand as the only specific

description of rivers and their bordering vegetation on the tablelands at contact. On the McDonald River, which flows west to join the Peel-Namoi system, the banks of the river were gently sloping and clear of timber (1820: 288-9), whereas the upper reaches of the Apsley were thickly forested and this dense vegetation extended up to two miles from the river before thinning out into 'parkland' (1820: 291). Whether this can be taken as a general pattern with some marked difference between rivers in the east and west of the tablelands, or purely a localized phenomenon is open to conjecture. I suspect, however, it is the latter, as the gallery woodland along rivers is the norm.

#### 2.2.1.2 Prevalence of fauna at contact

In contrast to Norton's (1907) comment that there were few resources for Aborigines on the tablelands, oft-quoted in recent studies (for example McBryde, 1974; Belshaw, 1978), most early observers emphasize the large amounts of game on the tablelands. Thus, Oxley (1820: 291-3) noted abundant game in the Walcha area, with prolific numbers of kangaroos, emus, ducks and swans. He was moved to write:

I think the most fastidious sportsman would have derived ample amusement during our day's journey. He might without moving have seen the finest coursing, from commencement of the chase to the death of the game: when tired of kangaroos, he might have seen emus hunted with equal success. We numbered swans and ducks among our acquisitions, which in truth were caught without much exertion (1820: 293).

Shortly after he again wrote of the wildlife that 'kangaroos abounded on it, and tracks of emus were to be seen' (1820: 296). Likewise, Henderson (1851: vol II: 244 and passim) records many waterfowl on the Salisbury Plain, along with large numbers of kangaroos. This view was reinforced by Mundy (1852: vol II: 38), who noted large numbers of emus and bustards along with plenty of other game. Crawford (1939) refers to large numbers of grey kangaroos in the woodlands, and states that possums were available in quantity. Blomfield (1945: 25) reminiscing on the mid to late 1880's, remarked that over 100 possums were shot in one night on his station, and that rat kangaroos (*Aepyprymnus rufescens*) were available in prolific quantities. In the Glen Innes area, Cameron (1975) records his father noting the profusion of wildlife on his station, taken up in 1866, with kangaroos, wallabies, possums and other wildlife being very numerous. On a drive from the station to town, a distance of 16 miles (25 kms) he recalls counting more than 100 koalas (Cameron, 1975: 19).

Many of these animals were in veritable plague proportions in the 1880's. For instance, on one property in the Glen Innes area, 10,000 kangaroos were killed in one year and 20,000 over a four year period (Norton, 1971: 5). In the period 1883-6, the Glen Innes Pastures Protection Board paid bounties on 23,453 grey kangaroo scalps (Cameron, 1975: 20). The number of bounties paid on wallabies varied from 5,000 to 15,000 per year throughout the 1880's and 1890's. In 1889,

11,264 bounties were paid on kangaroo rats in that district. In the Tenterfield district 61,531 bounties were paid on wallabies alone in 1892, and 1,429 on rat kangaroos (Cameron, 1975: 21).

Some have suggested this plague was due to decreased predation by Aborigines and dingoes (for example Cameron, 1975). There can, however, be little doubt, in view of the very early accounts, that the tablelands was extremely rich in animals prior to the coming of Europeans, and the decimation of the Aboriginal population. Indeed, the open forest and woodland, along with the 'plains', would have provided an optimal habitat for grey kangaroos.

While I have concentrated on land animals, aquatic ones should also be mentioned. Eels, for instance, would have been more common due to more extensive wetlands (see above). Crayfish, too, known to have reached a very large size, and tortoises would also have been available in large quantities because of this, as would waterfowl. All in all, the waterways and wetlands would have had abundant wildlife, making them worthy of the attention of the prehistoric inhabitants of the region.

#### 2.2.2 The Gorge Country and Coastal Plain: Vegetation and Resource Zones

Unlike the tablelands, where we must reconstruct the vegetational patterns from snippets of informations, we are fortunate in having the detailed description of Clement Hodgkinson, a trained surveyor who travelled extensively through along the coastal plain and in the gorges in the mid-1830's. The following draws largely on his work, but it is corroborated by Henderson's less authoritative study (1851: vols I and II). Hodgkinson (1845) delineated five distinct zones:

1. extensive mangrove swamps with thickets of myrtle palm and swamp oak were to be found immediately behind the frontal dune system (1845: 3-4);
2. dense alluvial brushes (rainforest) formed a gallery along the Macleay River some 2k wide, once one had proceeded a few kilometres inland from the river estuary. Backing this rainforest were extensive swamps of many thousands of acres in extent. Hodgkinson (1845: 9) notes that there were several large lagoons in these swamps. It is not clear what he means by this, but possibly he is referring to more permanent expanses of water as against the more ephemeral swamps;
3. further inland (up to 25 kms from the coast) small, alluvial plains clear of trees were found. These varied from 50 to 100 acres in area (Hodgkinson, 1845: 10);

4. above Kempsey the river was much shallower. Hodgkinson (1845: 15) records a 'park-like forest' with grassy flats which were lightly timbered close to the river. Patches of rainforest grew on the hills flanking the river and along small tributaries; and
5. in the gorges proper there was good land but it was very limited in extent because of the mountain ranges which hemmed it in. There were few trees on the limited areas of pasturage, though the surrounding slopes were quite well-covered (Hodgkinson, 1845: 21). Henderson's (1851: vol 1: 260-300) account of these up-river areas matches closely that of Hodgkinson.

#### 2.2.2.2 Availability of food resources in the Gorge Country

Because of the extremely sparse European occupation of this area data on animal resources is very thin. It should be noted that Oxley (1820), though writing of the Hastings, Hodgkinson (1845) and Henderson (1851) all recorded that many animals were common in the gorge country. In view of the lack of detail in such reports, it is probably safer to rely on modern accounts rather than speculate. Given that the gorge country has not been radically altered in the last 150 years this is not an unwarranted assumption. It may be taken, therefore, that the fauna described in the gorges earlier in this chapter were distributed in the same way prior to contact and European settlement.

On the score of edible plants we are far better served. Both Hodgkinson and Henderson list a number of edible plants exploited in the Macleay Valley and these can be augmented with the works of J.H. Maiden and others to provide a fairly complete list of edible resources. Such a list should not be thought to imply that all these were utilized, but one can hardly take the ethnohistorical works alone as a definitive statement of edible plants that were exploited. How can we think these early sources noted every plant food exploited when activities like shellfish collecting are almost totally ignored - selectivity and omission are a constant worry. As in the case of the tablelands, I assess this data in more detail in chapter 7.

#### 2.2.3 Aboriginal firing as an agent of environmental change

As Cook travelled along the east coast of Australia in 1770, he and his men saw numerous instances of fires believed to have been deliberately lit. At one place he was so impressed by this he gave it the name Smoky Cape; the headland near the mouth of the Macleay (Callaghan, 1980). Although others who visited the region somewhat later also commented on

Source	observation	Time of year	Comment
Oxley, 1820: 290	'The great number of fallen trees was in some measure accounted for by the men observing about a dozen trees on fire near this camp*, no doubt the more easily to expel the opossums, rats and other vermin which inhabit their hollows	September	small scale burning associated with hunting on the tablelands * Aboriginal camp of 8-10 men, plus women and children
Oxley, 1820: 310	"numerous smokes arising from natives' fires announced a country well-inhabited	late September	refers to camp fires (?) in the gorges
Henderson, 1854: vol 1: 232	'At one time a distant fire led me to suppose that I was near . . . black camp (sic), but I soon found that the bush had been on fire, and that the burning trees and logs were scattered all around	June	not definitely attributable to Aborigines, but description similar to Oxley's observation: natural cause unlikely as lightning strikes uncommon at this time of year
Henderson, 1854: vol 2: 13	Large tracts of country are also frequently burned (sic) by the natives sometimes in hunting, at others by accident, from the dropping of sparks from their fire sticks	-	refers to the upper reaches of the Macleay
Irby, 1908: 72	'The country around three sides of the station is now on fire, and on some days we have it as dark here from smoke as you have from fogs in November. It is generally supposed that these large fires are caused by the natives dropping their fire sticks accidentally, and not from any design on their part of trying to burn the settlers out of their station. They sometimes burn the old grass off, in order that they may have a chance of killing the kangaroo when they go to feed on the young grass that springs up, and also when they think they are likely to be pursued they fire it to prevent their track being seen'	December	large-scale firing of countryside, but only presumed to be by Aborigines definite use of fire for hunting purposes, but probably of a small-scale nature

Table 2.1: references to Aboriginal burning practices on the New England Tablelands and gorge country

the use of fire by Aborigines on both the tablelands and the subcoastal zone, it is not an issue that has engendered much discussion amongst prehistorians interested in the region.

Table 2.1 provides a list of references to burning in this region. For the tablelands we have four references to burning, three of which can be definitely attributed to Aboriginal activity. Different types of burning operations are described in these. One refers to large-scale fires being lit (Irby, 1908: 72); two others to small-scale burning for hunting purposes (Irby, 1908: 72). With reference to the gorges there are two mentions of fires, but only one of these states that they were more than camp fires. Henderson (1851: vol II: 18) indicates that large-scale fires were lit. The question remains what effect such firing would have had on the vegetation? To resolve this question we must turn to a wider literature.

There is no simple answer to this problem and wide differences of opinion exist. Debate has tended to polarize on two extreme positions. The first of these is that Aborigines have had a profound effect on the long-term vegetational patterns and environment generally. Some, such as Jones (1968), Merrilees (1968) have argued that Aborigines wrought major changes in distribution of grasslands and trees which are more or less fire sensitive. Indeed the extinction of the megafauna may have been a direct result of such behaviour. Less extreme than this are the arguments of Latz (1984) and Hallam (1975) (amongst others - see Vietch, 1985 for a review), in which Aborigines consciously modified their environment by the use of fire, turning unproductive climax vegetation into immature, but more productive vegetational communities. Implicit in this argument is the acceptance of climax and successional vegetation theory, something which may not be warranted (see Clarke, 1983 and below).

At the other end of the spectrum lie the arguments of Horton (1982) in which Aboriginal firing is not seen as a major factor in environmental modification: fire-stick farming is not a serious possibility. Horton and others (for example McBryde and Nicholson, 1978) have attacked arguments citing anomalies in the pollen records used to support them, that fire can be as much a disadvantage to some species as it is an advantage to others, that supposedly fire-modified environments are those that could be predicted on the basis of soil and climate rather than fire, and that there simply would not have been enough fuel to sustain a firing programme greater than that which could have occurred naturally. Horton (1982: 249) concludes by arguing that Aboriginal firing practises followed the natural firing regimes, merely providing an alternative source of fire ignition and helping to maintain the existing environment rather than radically altering it.

Be that as it may, there can be no doubt that ethnographically, Aborigines did light fires to consciously modify their environment, whether or not this had long-term ramifications. It is

another question again how predictable were the results of such behaviour. Clarke (1983: 33) has pointed out that in recent times climax theory of vegetational succession has increasingly come under attack. She writes:

Pollen studies of long-term change show vegetation to be far more dynamic than previously thought, changing in composition and structure as individuals and species interact with each other and the environment. Distinct communities do not succeed each other in predictable sequences, with only the last stage in equilibrium with its environment . . . Fire is not a disturbance which disrupts that equilibrium, returning vegetation to an earlier unstable successional stage, but rather an integral part of the interaction between plants and their environment. Aboriginal burning must be regarded as one factor in a complex of processes.

Thus, while there can be no disputing that Aborigines did seek to create a particular form of environment through the use of fire, it is debatable that they could with any certainty produce the desired result, or ensure that it did not have deleterious effects in the short or long term.

Where does this place us in regards to understanding Aboriginal firing on the tablelands and in the gorges? Unfortunately, although farmers have continued to burn their country regularly (see Norton, 1971), the heavy clearing of timber does not allow us to draw many conclusions. Where timber does grow on hilltops and where it is fenced off from cattle, dense stands of timber do result. Can this be taken to mean that Aboriginal firing was necessary to produce the 'parklands'. This is a tempting conclusion but not substantiated by this observation: we have already noted that hills in the parklands were more heavily timbered than other areas anyway. Perhaps, however, Aboriginal firing of the landscape did play a part in *maintaining* a certain mosaic of vegetation, if not actually *creating* it. For instance, might the continued existence of the 'plains' have been in part due to Aboriginal burning? Clarke (1983:35) has noted: 'it is likely that Aborigines neither created nor maintained vast areas of grassland, although their burning may have been responsible for the continuation of patches of grassland'.

It should be noted, however, that other explanations of such clearings have been proffered. Waterlogged soil and frost hollow effect have been suggested as possible causes for those found on the Dorrigo plateau (see Henderson, 1980: 121-6 for a more detailed discussion). As has been seen in previous section, edaphic and climatic conditions are significant factors in the maintenance of the woodland-open forest.

Questions might be raised whether we should attribute some of the references to large-scale firing to Aborigines or to natural causes (for example lightning strikes) (see McBryde and Nicholson, 1978; also comments in Table 2.1). Thus, the value of references from a source such as the Irby brothers diary is a moot point (see chapter 3). It is quantifiably demonstrable,

however, that burning of an area does result in significantly higher numbers of macropods in that area for many months after the firing event (see section 2.1.1.5.1; Southwell and Jarman, 1987): this is the reason given by the Irbys for some of the fires Aborigines lit. Similarly, it has been observed by Gould (1980) that bustards (*Eupodatis australis*) are very common on freshly burnt ground. This bird, not found now on the tablelands, was once abundant, and firing of small areas may have served to concentrate it as a resource. Sabine (1970) has recorded some oral testimony from old Aboriginal informants that areas would be fired to create conditions of maximum growth of yams.

Burning at particular times of the year could possibly have significantly modified pastures. Thus, the firing of large areas in December as observed by the Irbys would destroy warm season perennials before they got to seed and favour year-round green perennials and cool season perennials. (European firing of pasture in late autumn and early spring would have swung the balance the other way and might be partially responsible for the dominance of warm season perennials now seen - Norton, 1971). Movement towards year-round green perennials and cool season perennials would have ensured quantities of succulent, high energy-high protein pasture throughout the year, thereby helping maintain optimal conditions for high kangaroo populations.

### 2.3 LATE PLEISTOCENE AND HOLOCENE ENVIRONMENTS

It is unfortunate, but as yet virtually no attention has been given to late Pleistocene and Holocene environments on the New England Tablelands. The situation is marginally better for the coastal zone for there we at least have some data on fluvial processes during this time (for example Hails, 1968; Walker, 1970). The reasons for this are not clear. In my view, the numerous swamps and lagoons seem to offer scope for studies similar to those undertaken in other regions of southeastern Australia. Such opportunities have yet to be grasped: a project of the scale necessary to resolve regional issues is clearly beyond what could be encompassed within the confines of this present research programme. Consequently, the great majority of what follows is drawn from analogy with other regions, particularly the southern highlands of New South Wales. I did, however, undertake some limited geomorphological investigations in the gorge country aimed at elucidating environmental change in that area over the last few thousand years and this is presented here.

Adoption of this admittedly coarse approach does pose certain problems (discussed below) but there is some justification and worth to it as well. It is preferable to have some idea of what changes may have occurred in the past rather than ignore the issue completely. Recent syntheses of palaeoclimatic and palaeoenvironmental reconstructions (for example Bowler *et al*, 1976; Ross, 1984; Attenbrow, 1987) have outlined and refined certain climatic trends which are

consistently found throughout much of southeastern Australia. Some evidence has demonstrated that major *structural* changes in highland vegetation were broadly synchronous across this area. There is, therefore, some rationale for painting with a broad brush. What of the problems?

Firstly, while there are certain clear trends in climate throughout southeastern Australia, it is equally true that the intensity of these varies markedly from region to region. For instance, mean summer temperatures in the southern alps during the last glacial maximum (c. 18,000 b.p.) are estimated to have been 8° or 9° C cooler than those obtaining today. Evidence from the western plains of NSW points strongly to a regional drop in mean temperature of significantly less than 6° C for the same period (Bowler, 1976: 69).

Secondly, the broad trends also mask significant but regionally specific consequences. So, for example, fluctuations in water levels of lakes and lagoons may vary widely depending on local topographic features, which can in turn severely influence hydrological regimes and thereby regional geomorphological processes (see Bowler, 1976; Ross, 1986 and personal communication). The same broad trends may be at play but the regional outworking of these may be very different.

Finally, there may be local stochastic events which have no parallel in any other region but which are significant nonetheless. Indeed, they may not be replicated in even the adjoining river catchment. I discuss an example of one such event/process later in this section.

What can we conclude from this? There can be little doubt that the general outline of environmental change, for example periods of relatively lower or higher temperatures and rates of effective precipitation, observed elsewhere would be duplicated in the New England region. However, the intensity of such events may have been significantly different to those of the southern tablelands. In view of the lower latitude, temperatures during the last glacial maximum may have been somewhat warmer on the New England Tablelands, in the summer months at least. What effect this had on evaporation rates is debatable, but it is possible they were significantly higher than on the southern tablelands. However, the same general patterns of vegetational change might be expected. In summary it might be said that temperatures and hydrological processes were probably different between the northern and southern highlands over the last 30,000 years but changes in vegetational communities at the structural level may well be comparable.

Before passing to a more detailed consideration of the palaeoenvironments of the tablelands and sub-coastal zone I should add that wherever possible such local data as is available has been

utilized. Using the results of work by Nanson (1986) and others, as well as some undertaken by myself in conjunction with a geomorphologist, it has been possible to build a strong model of changing alluvial conditions in the Macleay valley during the late Holocene. However, given the paucity of data for the tablelands and the fact that the basis of the model presented here for them is material for the southern tablelands the following outline should be seen as speculative requiring independent substantiation.

### 2.3.1 The New England Tablelands

There are a number of geographical similarities between the New England Tablelands and the southern tablelands of New South Wales. Geology, temperature and rainfall all display a marked likeness (see Bowdler, 1981a: 105, Table 1). It is because of this similarity that I have chosen the southern tablelands, an area about which much is known of later Pleistocene and Holocene environments, as the major analogue for the New England Tablelands. However, significant differences also do exist: rainfall distribution is even throughout the year in the south while being largely a summer event in the northern tablelands. Whether this was so in the later Pleistocene, and in what ways this may have affected evaporation and effective precipitation are unknowns. It is possible that this variation in rainfall regime meant that during the increased aridity of the late Pleistocene dry spells in on the northern tablelands may well have been more pronounced and had more profound long-term consequences. However, the periglacial conditions of the southern tablelands may have balanced this out. All that can be done at present is to offer some suggestions and wait for data from the New England region to establish how wide of the mark they are.

The palaeoenvironmental data for the southern tablelands have been synthesized by Bowler *et al.* (1976), with more recent developments reported in CLIMANZ. I draw extensively on this source in the following reconstruction. The period 40,000 b.p. to the present is conventionally divided into five phases: 40,000 to 30,000 b.p.; 30,000 to 15,000 b.p.; 15,000 to 10,000 b.p.; 10,000 to 5,000 b.p. (this can be sub-divided further into 10,000 to 7,000 b.p. and 7,000 to 5,000 b.p.); and 5,000 b.p. to the present.

1. 40,000 to 30,000 b.p. - this seems to have been a period that was cooler and moister. In the southern tablelands stands of *Nothofagus* and high water levels in Lake George point to slightly lower temperatures and more effective precipitation. It is conceivable that the rainforest now found along the eastern edge of the New England Tablelands extended further west at this time and woodlands were more closed than those seen at contact (see above). Presuming the lagoons existed at this time their water level would have been high.

2. 30,000 to 15,000 b.p. - over this time there was on the southern tablelands a steady decrease in temperatures until about 20,000 b.p. whereon they stabilized at a level some 8° to 10°C (summer mean) colder than at present with glaciers forming and periglacial conditions effecting much of this area. Although there was decreased precipitation water levels in Lake George remained high due to decreased summer evaporation. There was, however, increased erosion of slope mantles due to decreased vegetative cover, a response to lower temperatures and lower rainfall. Extensive areas of grassland were the net result. In the New England region temperatures did not drop as radically as in the southern tablelands hence there were no glacial or widespread periglacial conditions. However, the higher temperatures (and higher evaporation) along with a decrease in precipitation probably lead to a drying of the lagoons. Walker (n.d.) argues that lunette formation along the margins of some lagoons is an associated process. Dating of the lunettes, however, is purely on the basis of analogy with similar features in southwestern NSW (Bowler, 1976). We should be mindful of the differences that exist between the hydrological regimes responsible for the lakes of southwestern NSW and the lagoons of the New England Tablelands. A more open vegetation and contraction of rainforest may also have resulted. This may have included formation of extensive areas of grassland, as suggested by the presence of relict grasslands believed to date to this period in the rainforest-clad Bunyah Mountains (Baur, 1964).

3. 15,000 to 10,000 b.p. - during this time temperatures started to rise on the southern tablelands and meant a rise in the tree line and more extensive woodlands. A rise in water levels in Lake George perhaps points to a short humid phase between 15,000 and 14,000 b.p. On the New England Tablelands we might expect a response in vegetation with open woodlands or savannah. The lagoons would have remained low unless an increase in effective precipitation more than offset the rise in rate of evaporation, as was possibly the case (Ross, 1984).

4. 10,000 to 5,000 b.p. - as noted earlier, this phase can be sub-divided into two sub-units. Between 10,000 b.p. and 7,500 b.p. both temperatures and precipitation rose. This saw the establishment of eucalypt woodlands in the southern alps, but Lake George suffered a drop in water level due to increased summer evaporation. It is likely that the New England Tablelands were also clothed in woodlands from this time as well. 7,500 to 5,000 b.p. represents a climatic optimum with dense vegetation and rates of precipitation perhaps more than 20% higher than at present (Bowler, 1983). Ground water was more widely available in many regions than at any time in the previous 15,000 years (see Ross, 1981). The New England Tablelands were no exception with the basal dates of swamps in the vicinity of Round Mountain dating to this time (6,100 ± 180 b.p. - L.Cameron, personal communication). The lagoons, too, probably held more water but would not have been as full as they were before 30,000 b.p.. It is also likely that a flush of vegetation accompanied this with dense woodland and forest developing.

5. 5,000 b.p. to present - during the last 5,000 years there has been a decrease in effective precipitation and a drop in temperature of c. 2° C to present levels. Lake George and other major water bodies suffered major fluctuations in water levels due to oscillations in evaporative regimes. Between 3,000 and 2,000 b.p. represents the period of maximum aridity. There has been a slight amelioration of conditions over the last 2,000 years.

What effect these perturbations had on the New England Tablelands is difficult to judge. It was during this time the park-like vegetation that dominated the region at contact took shape. It may, however, have been slightly more open than now between 3,000 and 2,000 b.p., with increased pasture and less tree cover. Consequences for the swamps, marshes and lagoons are more equivocal. MacPhail and Hope (1983) have demonstrated a marked increase in deposition in swamps in the southern tablelands, the north Victorian high country and the Tasmanian highlands in the last 2,000 years. Such may have been the case on the New England Tablelands. Cameron's (personal communication) research on the stratigraphy of the Round Mountain swamps do not suggest any major hiatus in deposition at any time in the last 5,000 years. An age-depth curve shows a near-constant rate of deposition throughout the last 6,000 years with only the most marginal increase in the last 1,500 years. Significantly, MacPhail and Hope (1983) also note swamp formation continued at all times throughout the last 5,000 years, including the period of maximum aridity. Thus, the process of drying and refilling seen now during and after droughts may have been more accentuated between 3,000 and 2,000 b.p. but these wetlands continued as a rich, if at times somewhat unpredictable, resource throughout the past 5,000 years.

How the lagoons fared is a moot point. It is reasonable to suppose that like similar bodies of water at this time, levels dropped from the relatively high levels of the previous 5,000 years and have fluctuated between low and intermediate ever since (Ross, 1986: 12). Thus, when they were full they too were a rich resource, but not one to be counted on during an extended dry spell.

### 2.3.2 The Gorges

Here I will concentrate on the late Holocene geomorphology of the gorges. The environment of the gorges is dominated by the alluvial processes operating on the river. By understanding these we are in a position to make some firm statements about what the environment of this area was like over the last few thousand years at least. Little research has been done into the alluvial processes operating in the upper and middle reaches of eastern-flowing rivers in northern NSW. Some recent studies, however, have examined issues of alluvial development in watercourses of the eastern seaboard of NSW over the last 10-20 thousand years with particular reference to the regional and extra-regional climatic implications of these (Nanson

*et. al.* 1987; Proser, 1987). Nanson (1986) has described the processes and history of flood plain development on the upper reaches of the Manning River, just to the south of the Apsley. These provided a platform for my own investigations.

The first point to be made concerns the timing of environmental change in the gorges. Nanson *et. al.* (1987) and Proser (1987) have argued convincingly that alluvial infilling in eastern Australia does not demonstrate any general pattern that can be related to either regional or extra-regional climatic events in the late Pleistocene or Holocene or to changes in Aboriginal land management practises (in this case, the use of fire - Hughes and Sullivan, 1981). Plotting of relevant carbon assays for episodes of valley-infilling along the east coast reveals a totally random distribution of dates. Therefore, we can not expect the timing of developments in the Apsley to fit the more general regional models of environmental change but rather they will reflect circumstances peculiar to this gorge system.

Most studies of flood plain development have concentrated on rivers in broad, open valleys in the mid-latitudes of the northern hemisphere. From these comes the classic meandering river/vertical accretion model of floodplain development. Recently, however, various studies have identified another process of floodplain formation referred to as vertical accretion (Nanson, 1986). These occur in conditions where channel migration is constrained by geological barriers, such as the Apsley-Macleay gorges. The following account of the process is drawn from Nanson (1986).

In vertical accretion systems, the channel 'hugs the bedrock valley wall before switching sides at river bends that also abut bedrock' and 'alternating strips of disjunct floodplain form between the channel and the farthest wall' (Nanson, 1986: 1469). When flooding occurs, energy is dissipated by bank overflow and this results in the deposition of alluvial fines on the floodplain, which thereby rises in height. This process continues until such time as the bank height is greater than the flood flow. This represents a critical point in plain evolution, because the flood, now restricted to a very narrow channel simply scours out the greater part of the existing floodplain in a single catastrophic episode. The process of accretion and erosion of the floodplain is depicted in figure 2.8.

The floodplain characteristics in vertical accretion systems are very different to those of laterally accreting rivers. Firstly, the levee often possesses a series of terrace-like steps. These are actually erosion levels marking normal, bank-full and overbank river flows. Secondly, floodplains develop on alternate sides of the river usually behind protective outcrops of bedrock at river bends. Parallel floodplains are extremely rare in vertically accreting systems. The basal deposits consist a layer of coarse-grained material with a high percentage of gravel,

which represents the normal stream bed. On either one side or other of the river this is then overlain by fine overbank deposits which become grade finer as floodplain height increases. These deposits lack the interleaving coarse beds, indicative of point bar development, found in lateral accretion systems. Also, they contain an abundance of silt, and high carbon particle content indicative of a series of well-vegetated land surfaces. Development of soil-like qualities such as ped formation can also be expected, dependent on the spacing of the catastrophic scouring episodes.

Nanson (1986) has argued that the rate of deposition and timing of scouring is controlled by micro-environmental factors of valley width, sediment loads, catchment run-off and stream velocity (associated with bed slope), and therefore varies considerably from river to river. The cycle of deposition and scouring of the floodplain can vary anywhere between a couple of hundred and a couple of thousand years.

It was apparent to me that the Apsley-Macleay gorges which constituted a part of my study area demonstrated many of the classic features associated with a vertical accretion system. Firstly, the river is confined to a valley which is very narrow at its base, with opportunity for migration prevented by bedrock. Secondly, sections of floodplain were found behind protective outcrops of bedrock at bends in the river. Thirdly, the terrace-like steps of normal, bankfull and overbank flow were evident. To further test this possibility I enlisted the help of a geomorphologist, Ms Pam Dean-Jones, who had extensive experience in Holocene alluvial geomorphology and has undertaken considerable work for the Department of Water Resources on sedimentary processes in the rivers of northern NSW.

Procedures used were:

1. To clean back sections of the river bank to identify layers of carbon fragments indicative of well-developed vegetation on old floodplain surfaces and to obtain a visual characterisation of the sediments.
2. To collect carbon fragments from clean sections for radiocarbon assay.
3. Boring a series of auger holes to at least 5 metres depth to test sediment characteristics at depth in a number of locations on the floodplains.
4. Collection of samples from different parts and depths of the floodplains for a detailed characterisation of the sediments. Some basic field tests were also undertaken.

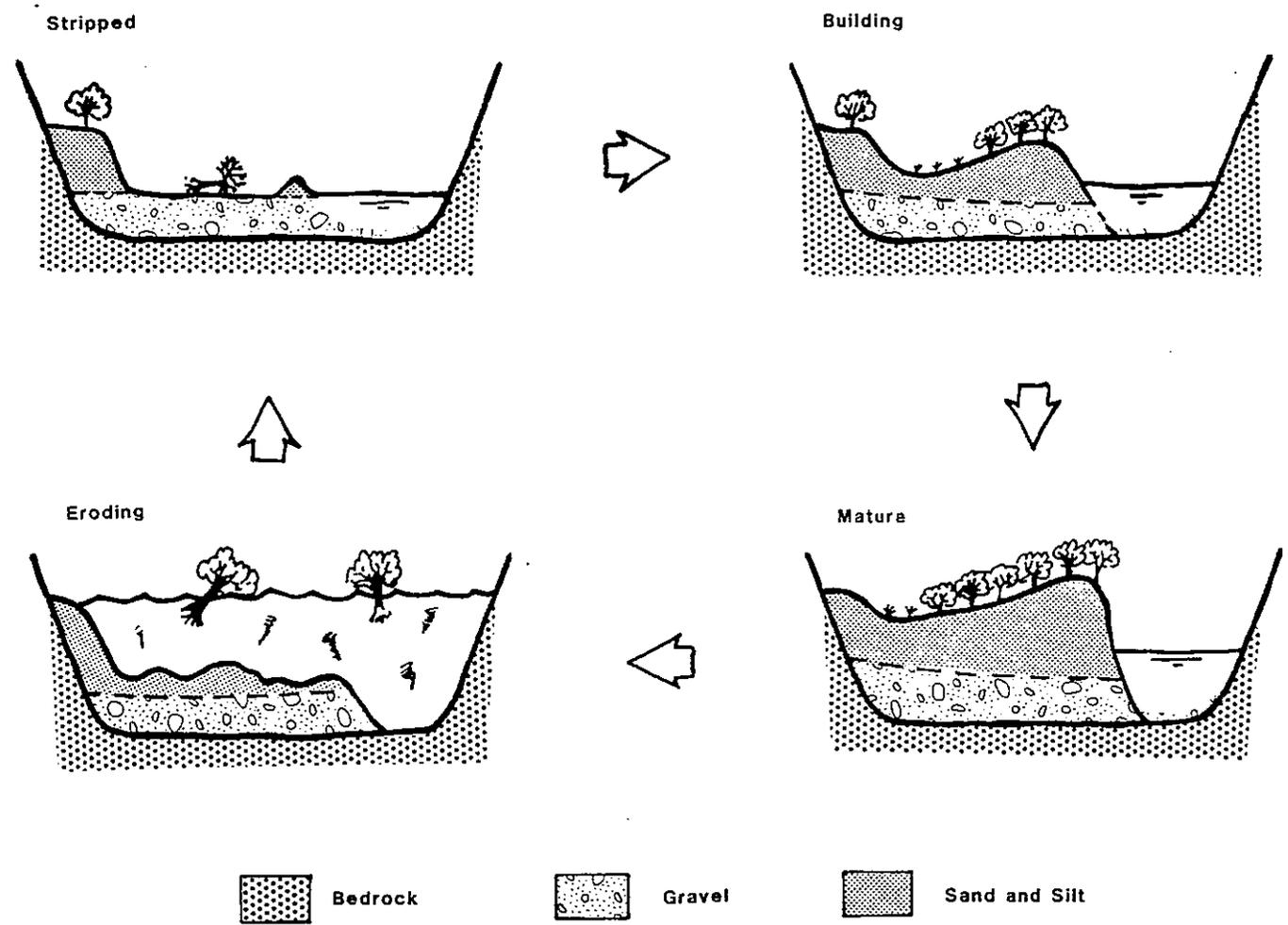


Figure 2.8: Evolution of vertical accretion floodplains (after Nanson, 1986).

Detailed results are not yet available, but Dean-Jones has made the following preliminary observations. A series of 12 auger holes in three floodplains were dug to a depth of approximately 2.5 metres. In each case, the only material removed from each auger hole was fine-grained material, either sand in the lower units or silty sand in the upper units. No gravel, even at the smaller end of the size range, was found. Examination of a series of cleaned sections clearly showed that there was considerable carbonised material in the sediments. Indeed, definite layers could be discerned, and these might indicate old floodplain surfaces. There was evidence of ped formation, suggesting *in situ* soil development which points to the land surface of the floodplain being of some age. These characteristics when taken with the general morphology of the floodplains points clearly to the floodplains being those of a vertical accretion system.

One charcoal sample was submitted for assay. This came from a freshly-cleaned face at a depth 2.3 metres below ground level of the floodplain, and about 1 metre above an outcrop of bedrock. All material came from a single charcoal lens approximately 3 cms thick visible in section. A sample of 5 grams was submitted for dating. This provided a date of  $3,110 \pm 80$  b.p. (Beta-13947). Davidson (personal communication) has also obtained a date from alluvial deposits on the system at Lower Creek. This was also assayed on charcoal. The sample returned a date of  $2,410 \pm 100$  b.p. (SUA-506).

I interpret these date to indicate that the most recent phase of floodplain development by vertical accretion commenced about 3,000 years ago, following an episode of alluvial stripping of the sort described by Nanson. Significantly, Walker (1970) determined that there was a major influx of up-river sediments into the Macleay estuary at approximately this time. Walker dated this to 3,300 years ago, and argued on sedimentological grounds that the greatest part of the infilling of the Macleay palaeo-estuary was related to this event (Walker, 1970: 686-8). This may well represent the last catastrophic scouring event, setting in train the processes which led to the initiation of floodplain formation in the upper reaches of the river.

What does this mean in terms of mid to late Holocene environment in the gorges? Essentially, the major elements of climate and environment would have been little effected by the regional changes: the open woodland of the gorge slopes would be the same as today and stands of rainforest would have been present throughout the system. However, the riparian environment would have exhibited considerable change over time. Prior to the last episode of stripping (i.e. before 3000 b.p.) the gorges were probably the same as today. However, for a substantial time after the scouring the gorge floor would have been greatly altered. While it is difficult to put a figure on the time taken by the process, it is safe to say that for a substantial time, possibly 1,000 to 1,500 years, after the scouring episode the floodplains would have been very immature.

Their recolonisation by gallery woodland species would have been very slow and subject to regular interruption due to regular overbank flows killing or removing juvenile or shallowly-rooted plants. The fauna dependent on this gallery would have been similarly restricted in their re-expansion into, and establishment of viable populations in, the upper gorges.

This model has two implications for the present study, one of them concerning the pattern of hunter-gatherer use of the area and the second relating to patterns the archaeologist might discern in the gorges. In the first case, prehistoric use of the gorges would have been inhibited by the absence and immaturity of the floodplains, not only by the depauperate floral and faunal resources but probably also by the absence of suitable camping areas, until such time as the floodplains developed to a point where every minor increase in stream flow did not result in inundation of the plains. In the second instance, any use of the gorges prior to the re-emergence of mature floodplains would have, if prior to 3000 b.p., been totally obliterated or, while they were still immature, either buried under sediment or removed. Thus any archaeological sites which are present there now post-date the development of mature floodplains. Any notions of late Holocene 'intensification' of use of this marginal area must be tempered by the realisation that this pattern is purely a result of complex geomorphological and site taphonomic processes over the last 3,000 years.

## 2.4 SUMMARY OF ENVIRONMENTAL FACTORS

### 2.4.1 The Tablelands

The tablelands can be described as a fine-grained environment in which soil, water and food resources are widely distributed. There are some areas which have a greater density of certain resources (e.g. grey kangaroos will be more plentiful in areas with better pasture and high woodland/pasture ecotone, or in areas with better soils and therefore richer pasture), but a significant number of the resources described here can be found in most most locations. The only exception to this is availability of good-quality stone for knapping, which is quite scarce. Far from being a depauperate environment, the tablelands offer a wide range of animal resources (some in great abundance), and many would have been available throughout the year with little alteration in their behaviour on a seasonal basis.

The historical evidence indicates that this pattern is one which pertained at contact, and, if anything, there may have been a wider range of animal resources (e.g. emus and bustards) present in greater abundance than is the case now (e.g. kangaroos until clearing reduced the amount of woodland/pasture ecotone). Although inconclusive, the palaeoenvironmental data suggests that these conditions have changed little over the last 4-5,000 years. Forests may have thinned to woodlands, but this would actually have favoured some animals (particularly macropods) due to more pasture. While overall rainfall may have been lower, the wetlands

continued to exist, although some probably dried out, and others decreased in size during droughts, but resources would quickly recolonise/repopulate such areas once rain fell.

#### 2.4.2 The Gorges

Again, the gorges of the Falls country can be characterised as a fine-grained environment, with the exception of some stone resources. While further downstream, there are a wider range of environments, in the deep gorges, the area is dominated by a narrow gallery woodland along watercourses, and open woodland elsewhere, with small patches of rainforest evenly distributed through the area. A wide range of resources are available, but tend to be concentrated on the gorge floors, within a few hundred metres either side of the watercourse. The only exception to this is the dry rainforest which is found on the steep slopes of the gorge walls. Human habitation would be largely restricted to the valley floors, as it is only here that suitable flat areas and water are found. While most resources are widely distributed, the density of the terrestrial, non-rainforest resources is likely to be higher in those areas with better alluvial development (i.e the Apsley-Yarrowitch land system).

These conditions have only existed for a relatively short time, possibly only 2,000 years. Prior to the emergence of mature alluvial flood plains, the area would have been depauperate in those resources clustered on these flood plains, until the flood plains reached sufficient height to reduce the number of flooding events, and thereby allow recolonisation of the flood plains by animals and plants. Areas suitable for human occupation would not have been available until the process of flood plain formation was well in train.

## CHAPTER 3

### THE CONTACT PERIOD: A HISTORY AND HISTORIOGRAPHICAL REVIEW

#### 3.1 INTRODUCTION

The need for a careful review of historical sources to identify error and bias in those sources is clear. As Prentis has noted 'people can lie, be prejudiced and report inaccurately' (1972:28). It has, however, been somewhat overlooked in ethnohistorical studies of northeastern New South Wales. McBryde (1974) was certainly aware of the problem and offered some comments in this direction in the introduction to her survey of the region's archaeology, but others have tended to skate over the issues involved (e.g. Belshaw, 1978; Bowdler, 1981a; Bowdler and Coleman, 1981). Rather, sources have been treated as of equal value, with little discrimination as to their relative quality. As will become apparent in chapters 4, 5 and 6, this is an important matter. Assessment of the relative worth of various sources is a valuable aid in sorting out some of the apparent contradictions present in these sources. This allows us to critically examine the merits of various models and, where necessary, modify these or construct new ones. This chapter attempts to come to grips with some of the issues involved. It has two objectives: first, to review the history of contact in northeastern New South Wales, so as to establish the context in which the sources discussed were written. I then turn to a review of the historical literature itself.

#### 3.2 THE CONTACT PERIOD

I hope to make clear that there are major differences in certain aspects of contact history of the coast and the highlands. It is, therefore, worth considering each region separately; I examine first the tablelands and then the coastal zone.

##### 3.2.1 Contact History of the New England Tablelands

The explorer John Oxley was the first European to encounter the Aborigines of the tablelands during his journey of 1818. His record of them was far from complimentary, but there were no violent incidents (Oxley, 1820:289-91, 302). Despite the very favourable reports of Oxley and other, later explorers about the pastoral potential, it was not until 1832 that the first property was taken up on the tablelands with a station being established by a Mr. Semphill near the present town of Walcha (Walker, 1966:12). After this, however, European settlement proceeded rapidly: by 1839 stations were established as far north as Tenterfield. Initially, relations between whites and blacks were reasonable. If not based on a high degree of mutual goodwill and cordiality, there was at least no violent competition for the land. In some cases Aborigines guided settlers to areas that were well-watered and highly suited for depasturing sheep and

cattle (Cane, 1949:21), or in others they supplied the settler with "bush tucker" (Campbell, I.C. 1978:7).

It did not take long for racial hostility to surface, with increasingly violent attacks and reprisals (see C.C.L. McDonald's reports to the Governor from 1839 to 1843; see also Campbell, I.C. 1978). In part this conflict was due to economic circumstances, with competition for the land the most important factor. Within a very few years the squatters wrought a major change to the environment of Tablelands - the destruction of the swamps and marshes. Digging drains and ploughing were undertaken in an attempt to decrease the incidence of liver fluke and foot rot in sheep. In other instances, environmental change was the unintentional result of cattle forming hard paths from the swamps and marshes, which in turn led to increased runoff and their eventually drying out (Cane, 1949:28; see also preceding chapter). The destruction of such rich habitats resulted in considerable damage to Aboriginal subsistence strategies on the Tablelands.

Some squatters also attempted to establish exclusive ownership of the land, thereby dispossessing Aborigines of their hunting grounds. Men such as the Irby brothers drove any groups of Aborigines encountered off their property (Irby, 1908:83). Lord Glenelg's directive to the Governor, Sir Charles Fitzroy (Glenelg, 1848:255), whereby Aborigines were to have hunting access to leased land except in the case of land used for horticultural purposes, came too late for the Aborigines of New England. The economic depression of the late 1830s and early 1840s also served to harden the attitude of the squatters towards the Aborigines. Facing ruin they had little sympathy for a group thought to threaten their livelihood, let alone their lives.

Yarwood and Knowling (1982) have argued, however, that some of the violence encountered on this frontier can be attributed to the nature of the men who formed the working community. Those who had the most contact with Aborigines were shepherds drawn from the convict element of society. This was as true for New England as elsewhere. Not only did these men have the attitude that they belonged to a race far superior to the 'primitive' Aborigines, but they had been brutalised by the system, and harboured long-standing resentment against Aborigines from experiences in the penal settlements where runaways had often been tracked down and returned to the establishment by Aborigines acting as unofficial police. They were only too willing to exact retribution, particularly if encouraged by the landowner (see Harrison, 1978:22-30). One ex-convict, Archie Marlow, was known to take a shot at any Aborigine he saw, whether there was any suggestion of violent intent or not (Bates, 1939).

With a decrease in native resources (see Gardner, 1854:71), convict hostility, dispossession of the land, and other antagonisms (e.g. Dawson, 1929: 45; Gardner, 1854:133), violent retaliation by the Aborigines is easy to understand. A rapidly escalating cycle of homicidal conflict was set

driving off whole herds and flocks (Irby, 1908), and the squatters and their men launching generalised retaliatory raids - in some instances against innocent groups, as was the case at Myall Creek (Campbell, 1969:29).

The period 1838-1844 marked years of heightened violent conflict on the Tablelands (Campbell, 1969:7), with at least 15 shepherds murdered on the white side. It is impossible to even guess Aboriginal casualties, but they were no doubt substantial (see, for instance, Irby, 1908:78-9 for an account of one massacre; see also Blomfield, 1981). It was not, however, a general problem common to all stations. Some squatters maintained good relations with Aborigines throughout this period (e.g. Thomas Tourle of Balala and the Everett brothers on Ollera), but others were in near-continual 'state of war'. Campbell I.C. (1969;1978) has argued cogently that this variability in relations was due to the different backgrounds of the squatters. Those, such as the Everetts, who were gentlemen-squatters coming from landed families possessed of philanthropic ideals (if tainted with notions of Eurocentric racial superiority), had little trouble, and indeed employed Aborigines as servants and station hands. Those with a military career behind them or who were bushmen-squatters adopted violent solutions to the problem of race relations.

The Commissioners of Crown Lands, the officials charged with ensuring justice for, and continued well-being of, the Aboriginal inhabitants of the region, were singularly ineffective in this area of their duties. Massacres were not reported to, or the details were obscured from the Governor by the Commissioner (Campbell I.C. 1969). In at least one instance the Commissioner travelled with a posse of squatters until they neared the Aborigines' camp, only leaving it just before the attack commenced and then submitted a rather hazy and sketchy account to the Governor (Rowley, 1978: 114). While this particular case involved the Commissioner for the Clarence district on the coast, the first Commissioner for New England expended no great energies in establishing the rights and wrongs of those massacres of which he was informed (see section 3.3.2). Neglect of their duties in this regard was the order of the day.

Although sporadic attacks on flocks of sheep launched by Aborigines living in the gorge country to the east of the tablelands continued well into the 1860s (Campbell, I.C. 1978: 10), by the mid 1840s violent conflict had all but ceased. The Aboriginal population was in a state of rapid decline (see Chapter 4 for discussion) due to venereal, respiratory and other introduced diseases. The hunting-gathering lifestyle had been dismantled or destroyed by the destruction of wild game and native foods, and through employment as servants and stockmen (a process hastened by both local and more distant gold rushes). The composition of the white community also radically changed. There were fewer convicts and more free men, and most squatters were from "well-to-do" families: "Almost all the young settlers are Oxford or Cambridge" (Tourle, nd.d:

II, 83). There was also a great influx of women, who had an important mollifying effect on black/white relations (Campbell, 1978: 10).

Aboriginal society on the tablelands was quickly reduced to one of a fringe/dwelling community, dependent on Government handouts and begging from squatters for much of their sustenance (Norton, 1907). White attitudes hardened into one of "an absence of sense of responsibility or commitment" to the problem or its possible resolution. There was an element of sympathy for the Aborigines, but Campbell, I.C. (1978: 13) notes it was more the pity for a lesser being than compassion and respect for an economically-disadvantaged group. Government policy attempted to alleviate the problem by offering land grants of 350 acres to Aborigines in the early 1850s, but this met with little success. It is sufficient to note that this situation has continued down to the present in this area with Aborigines continuing to occupy the lower rungs of the socio-economic ladder. Until 1962 and the establishment of a reserve in Armidale, many Aboriginal families lived in corrugated iron humpies on the perimeter of the local rubbish dump. Unemployment is endemic among the Aboriginal population of the area.

### 3.2.2 Contact History of the North Coast of N.S.W.

Captain James Cook was the first European to make contact with Aborigines of the east coast. However, such encounters were limited to around Botany Bay and near Cooktown. His many observations of them were all otherwise at a considerable distance - such was his comment concerning Aboriginal fires burning at Smoky Cape (see section 2.3.3). It was not until the 1820s, with the establishment of the Port Macquarie penal settlement that the opportunity for any close contact with the Aborigines presented itself. Aborigines entered into various economic transactions with the convicts and guards at the settlement, including prostitution and various other services to acquire European goods. At times they served as trackers for the authorities when in pursuit of runaway convicts; sometimes outlying groups would capture such convicts and return them to the settlement for a reward (cf. the case of William Craig who lived with the Aborigines of this region for a number of years after escaping from Moreton Bay). This earned them the hatred and long-standing enmity of many an ex-convict in later years (see above).

Violent conflict between white and black on the north coast took place only after the arrival of the cedar loggers in the late 1820s and early 1830s. These loggers were mostly ex-convicts who cut the cedar from the rainforest bordering the lower reaches of the Clarence, Nambucca, Bellingen, Macleay and Manning Rivers. They traded rum and cheap grog for sexual access to Aboriginal women or for help locating trees. The violence usually grew out of this, with one or other party feeling cheated in the deal (Massie, 1845:24-5). Such conflicts were very sporadic and shortlived and, it could be argued, had little to do with racial tension. Relations took an

upward turn between the two groups when more white women came to live in the region (Rowley, 1978: 110-2).

From the mid-1830s on, a major change took place in the settlement of the river valleys. Major clearing of land took place in the upper reaches as farmers moved into the region, growing maize and other crops, and grazing sheep and cattle. Prior to this settlement had been restricted to the coastal zone, with only the occasional cedar-getter penetrating the interior. With this change in settlement pattern came a change in the level and nature of inter-racial conflict. Examples abound of Aborigines killing shepherds, stealing sheep, cattle and crops ready for harvest, and destroying property. Equally, there are many tales of raids on Aboriginal camps in retaliation for these depredations (e.g. McMaugh, 1931).

There are also horrendous accounts of mass poisonings of Aborigines by flour mixed with arsenic (see below). As usual, the innocent blacks were punished along with the guilty. This type of violence went on for a number of years: the late 1830s and 1840s being the worst, the situation easing greatly in the 1850s but continuing on with the occasional attack well into the 1860s. This pattern is very similar to that of the tablelands described earlier, but vastly different to that pertaining from the earliest times closer to the coast. This dichotomy between race relations on the coast and the hinterland that has been long noted by, and intrigued historians (e.g. Rowley, 1978:110).

There a number of factors at play in causing these widely different circumstances between coast and hinterland. The first and most obvious is the very different impact of the white settlers of the coast and the farmers further inland. Some of the loggers did clear land and plant crops, and there were substantial numbers of farms on the coastal strip but there was no direct competition between the whites and Aborigines for land. The rich alluvial soils of the coastal plain provided abundantly and while the white population was low there was plenty for all. Furthermore, the coastal Aborigines had an economy oriented very much towards the extremely rich estuaries and littoral zones (see chapter 4) so white occupation did not unduly alter their economic base in the short term. It is worth noting that there were few fringe-dwellers in these early days and that various Commissioners for Crown Lands commented how self-sufficient the coastal Aborigines were (e.g. Merewether, 1851). The complementarity of Aboriginal and European patterns of exploitation, and attendant lack of conflict, goes a long way towards explaining why the culture of coastal Aborigines survived so much longer than that of those living further inland (see Godwin and Creamer, 1984).

In contrast to this, Aborigines and whites further inland were immediately thrown into conflict. Only small tracts of land were available because of the rugged and heavily-wooded nature of

the river valley and surrounding foothills (see section 2.3.2). The Aborigines of the hinterland were far more dependent on terrestrial foods (see Chapter 4) and European land-use practices either destroyed these resources or denied Aborigines access to them. As a consequence, Aborigines stole food, including flour and whole herds of cattle and flocks of sheep. That these latter were stolen for food gains credence from the fact that when some flocks were recovered they were found in good condition in well-constructed yards erected by the Aborigines (Henderson, 1851:II:6). Some have suggested that the intention of stealing flour and stock was to drive the white men out by bankrupting them (e.g. Reece, 1974: 47). Apart from supposing a sophisticated understanding of European economic practises on the part of the Aborigines involved, the more mundane explanation of simply needing food cannot be passed off lightly. Fry (1847) reports an increase in theft and inter-racial homicide occurring in that year and continuing for a number of years which coincides with the start of a drought that saw large numbers of native animals die (Prentis, 1972). Massie (1848), the Commissioner of Crown Lands for the Macleay River at that time, directly attributes stock spearings at that time to diminishing native resources.

As on the tablelands, European response varied in accordance with the milieu of the white protagonist. Shepherds and cedar-getters, who were mainly drawn from the convict population, took a shot at any Aborigine seen wearing a flour-bag shirt, working on the premise that such an article of clothing must have been stolen (Rowley, 1978: 110). Successful officials and colonists from settled parts and educated men of substance from Britain made up 40% of land owners, and had generally good relations with the Aborigines (Prentis, 1972: 138). Military men or those with military connections constituted another 13% of land owners. They, along with bushmen-squatters (30%) had poor relations with the Aborigines, seeing them as an economic threat (particularly during periods of drought) and considering violent methods to be the only means of dealing with this *menace*. Thomas Coutts, charged with poisoning upwards of 30 Aborigines, came from the bushman-squatter class, whilst Edward Ogilvie who bequeathed perpetual rights to a small portion of land on his Baryulgil station to the Aborigines of the area (Crowley, 1978: 3), and who learnt to speak the language (Rowley, 1978:116), was the son of a successful squatter on the Hunter River.

Violent conflict on the upper reaches of the coastal rivers continued on into the 1860's. However, with the arrival of the Native police in the mid-1850's, serious and large-scale episodes of this nature were soon stamped out by use of the infamous 'dispersal' tactics (Morris, 1983: 504), and only token resistance took place.

By the mid-1860's Aboriginal resistance had collapsed totally. Soon many were employed as station hands being paid with rations of tea, flour and sugar. 'Bush tucker' was still the main

source of meat. With changing economic circumstances in the region, Aboriginal fortunes fluctuated (Morris, 1983). Like their tableland brethren, Aborigines of the coastal region are now faced with extremely high levels of unemployment and other attendant social problems.

### 3.3 ETHNOHISTORICAL AND ETHNOGRAPHICAL SOURCES: A REVIEW

From the above we can divide white contact with Aborigines into three phases:

1. The exploration phase
2. The early settlement phase
3. The white consolidation phase

Each of these phases includes different types of data sources from that of the others, and so will be discussed separately.

#### 3.3.1 The Exploration Phase

This period covers the report of early explorers of the region. Unlike other areas of Australia, the tablelands and coast were not explored intensively prior to settlement (see Jones, 1979 for such an example). Only Oxley (1820), Cunningham (1829, in Russell, 1888) and Mitchell (1839) had any dealings with the region, and of these only Oxley traversed it from west to east: Cunningham and Mitchell only touched the western edge, travelling across the Liverpool Plains.

Their short notes and comments on the Aborigines are likely to be fairly accurate as they were seasoned explorers and trained observers. However, the coverage they provide is rather sketchy because of limited examination of the region. Flinders, in his 1799 voyage also made some observations of Aborigines (Steele, 1972), but these were restricted entirely to the littoral zone with no inland exploration whatsoever. Finally, it should be noted that none of these explorers spent very much time in the region. Oxley stayed the longest, but even his visit was only of a few weeks duration. Of course, they do have one major advantage over other sources: their observations relate to a near pristine Aboriginal lifestyle (although see Reynolds 1981 for examples of pre-contact European influences on Aborigines).

#### 3.3.2 The Settlement Phase

This phase covers the period from c.1830 through to c.1850. We have a number of data source types for this phase: reports of government officials, passing references in the letters and diaries of early settlers, and finally reasonably detailed observations in travelogues of the region.

In the group of government documents come the reports filed by surveyors and Commissioners for Crown Lands. These contain a variety of information on the economic base of the Aborigines,

population size, social well-being and conflict between white and black. Such reports might be expected to be reasonably reliable sources given that they were prepared by reasonably well-educated men preparing disinterested and dispassionate reports for other bureaucrats. Of course, nothing can ever be taken at face value, as all who have had dealings with bureaucrats would know. Let us take a closer look at the Commissioners for Crown Lands (C.C.L.) to see what I mean by this.

The C.C.L. had a variety of duties in regards to Aborigines, apart from their other activities of resolving disputes between white land-owners etc. They were expected to conduct inquests or inquiries into the violent deaths of Aborigines. In addition, they were supposed to cultivate amicable intercourse between black and white. Further, they were to act in the Aborigines' interest and obtain redress for any wrongs committed against them. Generally, they were to keep an eye out for the Aborigines and protect them from white depredations. From 1839 they were expected to file a report on the condition of all Aborigines in their district (see Harrison, 1978:49-50). Governor Gipps expected the C.C.L. to be moving around their district collecting information, as is clear in his pronouncement: 'they are required to be constantly on the move; and they live perpetually in the wilderness, or, as it is called in the Colony, The Bush' (cited in Gilbert, 1982:13).

Few of C.C.L.'s lived up to these ideals. C.C.L. McDonald, New England's first, established himself in reasonably spacious living quarters in Armidale. From here he proceeded to ingratiate himself with the local squatters, inviting them to dinner and to stay over for local race meetings (Gilbert, 1982:12). He found plenty of time to write poetry and music and to court one of the local ladies. His reports are deficient, with very little detail in them, apart from which they were often submitted late. He failed to report at least one large massacre of Aborigines (Campbell, I.C. 1969: 40). Thomas Bowden records in his reminiscences being with a party at Falconer Plains near Guyra and seeing an Aborigine chained to the stirrups of a horse and being flogged by the Commissioners Police (Prentis, 1972: 147). This was in 1842, during McDonald's tenure as C.C.L. McDonald may not have directly ordered or condoned such action, but he was at best negligent in stamping them out. Any information he did include in his reports was obtained from officers of his who lived in the bush and had dealings with local Aborigines.

McDonald was not the only one with whom we can find fault or evidence of negligence. Oliver Fry, C.C.L. for the Clarence River district, failed to report the massacre of 17 Aborigines on the upper reaches of the river. Numerous allegations of this type were levelled against him by both whites and blacks, but were dismissed summarily by the local crown magistrate (Prentis, 1972: 190). Fry was the C.C.L. who rode with the vigilante group until shortly before they encountered a group of Aborigines, with Fry departing just before the shooting and the massacre commenced (Rowley, 1978: 114). He did act against Thomas Coutts when a large number of

Aborigines were poisoned on the latter's property. He also had George Wilson, an ex-convict, convicted of assault with intent to commit rape: the only time between 1788 and 1855 a European was tried let alone convicted of a sexual offence against an Aboriginal woman (Prentis, 1972: 194). However, both these white men came from the lower social order, unlike the leader of the posse involved in the massacre referred to above. C.C.L. Oakes, of the Macleay River district, was an old and sick man who owned land in the valley. He had little interest in befriending the Aborigines, because they threatened the profitability of his agricultural endeavours (Prentis, 1972: 135). His replacement, Massie, was a far more dedicated man who took an active interest in Aboriginal affairs.

We must conclude then that the reports of such men must be viewed with a certain amount of circumspection. Information has been omitted or is only partially true and must be weighed carefully against that of other sources available to us. They are a source which varies in quality as much as the character of the men varied.

One government data source that is reliable is the results of Legislative Council surveys on the condition of Aborigines. Such surveys were normally sent to a few people in each town or settlement selected and so we can compare answers given by each person for any given location, to see whether they corroborate or contradict each other.

Information contained in settlers' letters and diaries varies in quality depending on their attitude towards the Aborigines. Those who established good relations (e.g. the Everett brothers of Ollera Station near Guyra) are a good source, reporting first-hand and able to quiz Aboriginal informants on particular points. On the other hand, we have those who had poor and often violent relations and who must have worked by inference because they could never have established good contact (e.g. the Irby brothers of Bolivia Station near Tenterfield). Their information on specific points must be considered to be less reliable than those with good relations, not least because of their loathing of Aborigines in general. Of course, in both cases we face the usual problems of people recording the unusual rather than the mundane and only seeing small snippets of Aboriginal life.

A particularly common literary genre of the 18th century was the travelogue: a chronicle of people, events and places seen during the author's period of habitation in a particular area, published to inform those anticipating visiting at a later date. The information value of these varies with the amount of time spent in an area, and the credentials and experience of the author. In some it is hard to separate local folklore and myth from the actual experiences of the chronicler. For the New England region we have a number of these travelogues ranging from the accounts of a 'new chum' who managed to set his camp alight by building a fire at the base of a

dead tree and who was very scared of the Aborigines (Henderson, 1851), to those of the surveyor Hodgkinson (1845) who travelled around on the coast with Aborigines on numerous occasions, and was an excellent bushman and trained observer. In between these examples lie the accounts of Gardner, which were never published, but are a reliable source all the same. These consist of four volumes containing numerous references to Aboriginal activities on the tablelands and western slopes. The journal prepared by Mrs McPherson (1978) for Keera Station near Bundarra is also a good source, though she could only report that which happened within close vicinity of the homestead. There are a number of others as well.

The value of all these various types of sources is that they were written not long after first contact. The authors also lived in the region for a period of years and thus had opportunity to observe things that would escape the eye of travellers quickly passing through. They were, however, written during a time of tension for both black and white which must colour their opinions and observations. Furthermore, the land use practices these European settlers initiated in the region wrought radical changes in traditional Aboriginal economy (cf. Godwin and Creamer, 1984).

### 3.3.3 The White Consolidation Phase

The final stage, white consolidation, refers to the period following successful European settlement and the end of Aboriginal aggression, that is from the mid-1860's on. Aboriginal lifestyle was largely that of the fringe-dweller, usually unemployed and reliant to a fair degree on government bounty. There are three types of source from this phase: reminiscences of early settlers, belated attempts at systematic anthropology, and a variety of 'stray' articles.

The first of these three data sources suffers two problems. First, there is a tremendous amount of editorializing in the comments. It is often hard to separate the opinion of the commentator as to why something was done, from the observation of what was actually done and the Aboriginal explanation for it. Often more energy is devoted to the opinion than to the event. Further, the opinion is often likely to be coloured by the author's attitude towards the Aborigines. It is also difficult to establish whether the observations were first-hand or related to them by some other 'old-timer'. This would depend to some extent on the nature of the relations between the settler and Aborigines. The worse the relations, the more likely the observation to be inference and supposition or second-hand knowledge. The second problem is obviously that of time: the memory will be clouded and the reminiscence more open to error because of the time that has elapsed between observation and a permanent record being made. The longer the time, the more likely it is the inaccuracies and compounded generalised folklore will creep in.

In respect of the second source a number of problems present themselves. Only a few anthropologists or people with anthropological pretensions undertook work in the area. Fortunately, one of these was R.H. Matthews, a surveyor by training but a man who had a deep interest in Aboriginal culture and established good contacts with Aborigines wherever he went. He wrote prolifically on the ceremonies of different groups in the 1890's publishing well over 100 articles, including a number of papers on the New England region. His understanding of kinship was faulty in some respects and some of his observations have been challenged (e.g. Meggitt, 1966-67), but he provides first-rate descriptions of the actual ceremonies. Another who undertook research was the anthropologist Radcliffe-Brown. His work was mainly reconstructive in nature, being carried out in the first twenty years of the 1900's. There have been challenges to some elements of his model of Aboriginal social organization and ownership of land (e.g. Hiatt, 1968), but his studies are valuable.

The main thrust of such anthropologists was very much towards recording kinship structure and ceremonial activity of these groups. Their writings contain virtually no information on the economic side of Aboriginal life. This is a reflection of the theoretical concerns of anthropology at that time, but is a rather unfortunate omission for us. The fact that these studies were undertaken at best some sixty years after contact is a further worry. How much of what they recorded is a picture of changes since, and possibly as a result of, contact, rather than that of pre-contact times? We should recognize a certain resilience in Aboriginal society in regards to this question of change (Morris, 1983; Godwin and Creamer, 1984). Certainly Calley felt he was able to separate traditional aspects from post-contact changes in Bandjalong social organization as recently as the late 1950's (Calley, 1959). The success of the National Parks and Wildlife Service's *Sites of Significance* Survey in the 1970's in this region also points to strongly-retained traditional information (Creamer, 1981).

Stray articles consist of word lists of various language groups that can be found in a variety of journals, with *Science of Man*, and the volumes of *Mankind* in the early 1930's being the most important, and passing references and snippets of information in articles not directly concerned with the region under review here. Their value varies and corroboration of them is essential if they are to be used.

### 3.4 RECENT RESEARCH

In the past few years there has not been a great deal of work of an anthropological nature undertaken in the region. Calley (1959) attempted a reconstruction of Bandjalong social organization using local informants, and challenged some of Radcliffe-Brown's interpretations. Morris (1983) has analysed in some detail the changing circumstances of Aboriginal employment in the Macleay valley since contact. Some linguistic studies have been carried out (Crowley,

1976 and 1978; Hoddinott, 1978 amongst others). Still others have collected oral history from those who can remember some of the 'old ways' (e.g. Fennell and Grey, 1974; Quinlan, 1983; Howell, n.d.). While the value of these latter sources may be questioned, my earlier comments concerning resilience of Aboriginal society to change should be borne in mind. There are also the numerous ethnohistorical studies undertaken by students of McBryde in the 1960's and early 1970's (e.g. Sullivan, 1964; Pierce, 1971). The coast, tablelands and western slopes were all covered using many of the sources I have reviewed here and will use in subsequent chapters. Few of them, however, view their sources at all critically. Finally, there is the archaeological research undertaken by McBryde, Connah and Coleman. Some of this draws on the ethnohistorical data in interpreting the archaeological material. McBryde sees a close fit between the two; Coleman on the other hand sees major discrepancies (see chapter 4).

### 3.5 CONCLUSIONS

In the above review I have attempted to give the reader some idea of the range of sources available and their relative worth in terms of information content. I have argued that this is very much influenced by contact history, and the biases or otherwise of the authors and their part in this history. Given this inconsistent quality, we are faced with the question of how we can best use this data. Are those sources of perhaps lesser quality to be simply ignored as discredited witnesses, or can we extract worthwhile information from them, and if so, how? One attempt to resolve this problem has been to validate a piece of evidence by counting the number of references that mention it (Allen, 1968). While reasonable on the surface, this approach suffers from one serious flaw: it is a quantitative solution to a largely qualitative problem. A simple hypothetical example demonstrates my concern. Imagine ten sources talk of large-scale infanticide and cannibalism, while one mentions it but says it is not widespread. The ten references come from people known to be hostile to Aborigines, the one from someone who lived with them and entered into their confidence.

The implications are obvious. Evidence from good sources may be ignored using the quantitative method because there is no other source or reference to substantiate an observation. In the following chapter my approach has been to establish in my mind the quality of each source along the lines of the above review. I have determined whether they can be accepted as reliable in both observation and explanation, or whether there is some doubt over their credibility in either of these aspects. Thus, where a source is considered to be of a high quality I have accepted the observations presented, even if there is no corroborative evidence. Where there is some question as to a source's veracity I have been circumspect in accepting the evidence, weighing it against what good sources have to say and on its internal consistency, either

rejecting it or accepting it with qualifications. This data is then used to critically analyse various models of group movement that have been propounded and to offer an alternative model of group movement and interaction (chapters 4, 6 and 7).

## CHAPTER 4

### PREVIOUS MODELS OF GROUP MOVEMENT IN NORTHERN NEW SOUTH WALES

Virtually every historian and archaeologist concerned with describing prehistoric and contact social organization in northern New South Wales has at least mentioned the issue of group movement (e.g. Belshaw, 1978; Bowdler, 1981a; Bowdler and Coleman, 1981; Campbell, I.C. 1978; Campbell, V. 1978; Coleman, 1978 and 1982; McBryde, 1974, 1976 and 1982; Pearson, 1973; Walker, 1966). There is, however, little agreement on this question, with radically different models proliferating and a good deal of confusion resulting. Some of this confusion has stemmed from varying emphasis being placed on different pieces of ethnohistorical evidence. Part may also have resulted from viewing and comparing archaeological evidence from different districts in the region.

In this chapter I will present the bones of these various models and seek to evaluate critically the archaeology and ethnohistorical evidence on which they rely. In chapters 6 and 7 I will offer my own model of the movement of prehistoric people throughout this region.

Following the lead set by earlier researchers, we can gainfully divide the models into those dealing with the coast, and those that have a wider purview and centre on the New England Tablelands. I firstly examine the coastal models.

#### 4.1 MODELS OF GROUP MOVEMENT ON THE NORTH COAST

##### 4.1.1 McBryde (1974, 1976 and 1982)

In the course of her pioneering work in the New England region McBryde developed a model of group movement which utilized the archaeological data she obtained from her excavation of two sites in the Clarence River valley as well as her reading of the ethnohistorical sources. In this model, McBryde argued that there was large-scale movement of people along the Clarence Valley on a seasonal basis with summer being spent on the coast collecting shellfish, particularly oysters. In winter they retreated to the hinterland with the hunting of land mammals being one of the major subsistence activities whilst situated there.

##### 4.1.1.1 Archaeological evidence

McBryde offered as support for this model a range of archaeological data drawn from the results of her excavation of the Wombah shell midden, situated on the northern side of the

Clarence estuary, and the Seelands rockshelter situated some 25 kms inland and also on the Clarence.

Wombah was occupied from c.3,300 b.p. until c.1,500 b.p. It was a large shell midden in which little bone of land mammals was found but from which some fish bone was recovered. Oysters dominated the shellfish component, comprising some 98% by weight of all identifiable shellfish. Also present were some stone artefacts which were sourced to a location on the Nymboida River, a hinterland tributary of the Clarence. McBryde considered that the heavy dominance of oyster in the shellfish component pointed to the occupation of the midden during summer, when the oyster is at its most edible. The presence of stone obtained from the Nymboida pointed, in McBryde's view, to the movement of people from that locale down through the Clarence Valley to the coast. In tandem, the two pieces of evidence suggested to McBryde movement from the hinterland to the coast in summer.

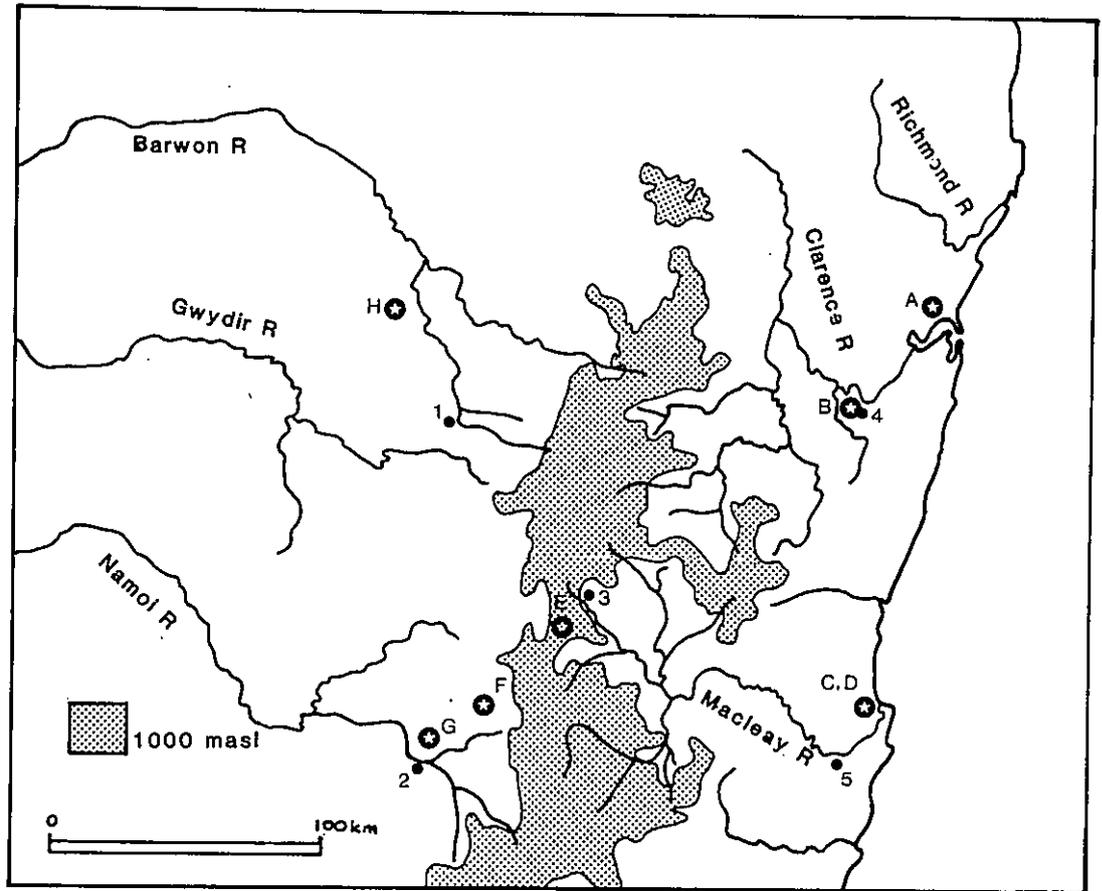
Seelands was a rockshelter occupied during the period 6400 b.p. through to 300 b.p. Unlike Wombah it had virtually no fish and precious little shellfish other than some pipis (*Plebidonax deltoides*: a littoral sandy beach species). Instead the faunal assemblage was dominated by land mammals, particularly the eastern grey kangaroo (*Macropus giganteus*). McBryde considered the absence of fish in this site, which was only a couple of hundred metres from the river, to be significant. She believed it indicated occupation of the site during the non-fishing season, ie. winter in McBryde's estimation. Similarly the predominance of Mcropod remains pointed to a reliance on the hunting of land mammals, with the conclusion being drawn that this was undertaken because the site was occupied at a time when fish were not available.

The presence of the pipi shell, which must have been obtained from an ocean beach lying some 25 kms distant, in the hinterland rockshelter, simply reinforced to McBryde something the Nymboida stone in the Wombah midden apparently indicated: large-scale movement between coast and hinterland.

Wombah and Seelands were, then, seen as representative of two seasonally complementary sites, with the former occupied in the summer months and the latter during winter.

#### 4.1.1.2 Ethnohistorical evidence

McBryde drew on two pieces of ethnohistorical data to bolster the archaeological evidence. The first piece of these was a statement in a letter from Commissioner for Crown Lands in the Clarence district, Mr Oakes to the Governor of New South Wales in which he commented that the hunting season was spent in the hinterland while as soon as the fishing season commenced they moved to the coast. He made no mention of season but McBryde believed these could be



- |                |            |
|----------------|------------|
| A Wombah       | 1 Inverell |
| B Seelands     | 2 Tamworth |
| C Stuarts Pt   | 3 Armidale |
| D Clybucca     | 4 Grafton  |
| E Church Gully | 5 Kempsey  |
| F Bendemeer    |            |
| G Moore Ck     |            |
| H Graman       |            |

Figure 4.1: Location of archaeological sites discussed in chapter 4.

could be read in as winter and summer respectively (1974: 10). The second reference seemingly supportive of McBryde's model comes from the reminiscences of an Aboriginal informant quoted in Dawson (1935). The informant stated:

The Yumbah tribe usually spend the winter some miles inland, getting their food supply from the forest animals and other products of the bush. When a certain plant or shrub called by them 'nu-um-nu-um' came into blossom they knew that the fish were beginning to run and that it was time to shift camp to the Clarence heads to enjoy a change to a fish diet.

#### 4.1.1.3 Critical Evaluation

There are, in both the view of myself and others, a number of serious deficiencies in the evidence McBryde uses to substantiate her model. Turning firstly to the archaeological evidence, it should be noted that neither the presence of stone sourced to the Nymboida in the Wombah midden nor pipi shells in Seelands proves movement of large numbers of people from coast to hinterland and back. Trade/exchange of material items could equally account for the distribution of these items, particularly the stone. It should also be noted that Wombah is actually some miles inland from the coast and could be interpreted as being a summer camp for people who spend the winter exploiting littoral resources. In line with this, Seelands contains no direct evidence of seasonality. Rather McBryde relies on the negative evidence of the absence of fish to posit a winter occupation.

Accepting McBryde's argument that summer was the fishing season and hence that Seelands must have been occupied in winter raises a further problem. It is clear from other ethnohistorical sources and modern observations that the major fish runs took place in late autumn, through into early spring. If the fishing referred to in the ethnohistorical sources centred on such rounds, as would seem likely, then the season for such activity must have included the winter rather than summer months (see also Pierce, 1971: 36). It is worth remembering that Oakes did not actually specify a time of year for the movement, but simply refers to it as the hunting or fishing season.

A detailed consideration of the ethnohistorical sources is also instructive. Oakes, for instance, must be considered as a source of mixed quality. He is known to have participated in at least one, and possibly more, punitive expedition against local Aborigines. Consequently his evidence is unlikely to be first hand and may have been written to *appear* authoritative to the governor, to whom he was required to report, rather than standing as an accurate account of Aboriginal activities. Perhaps this explains why he was not more specific as to what constituted the hunting and fishing seasons.

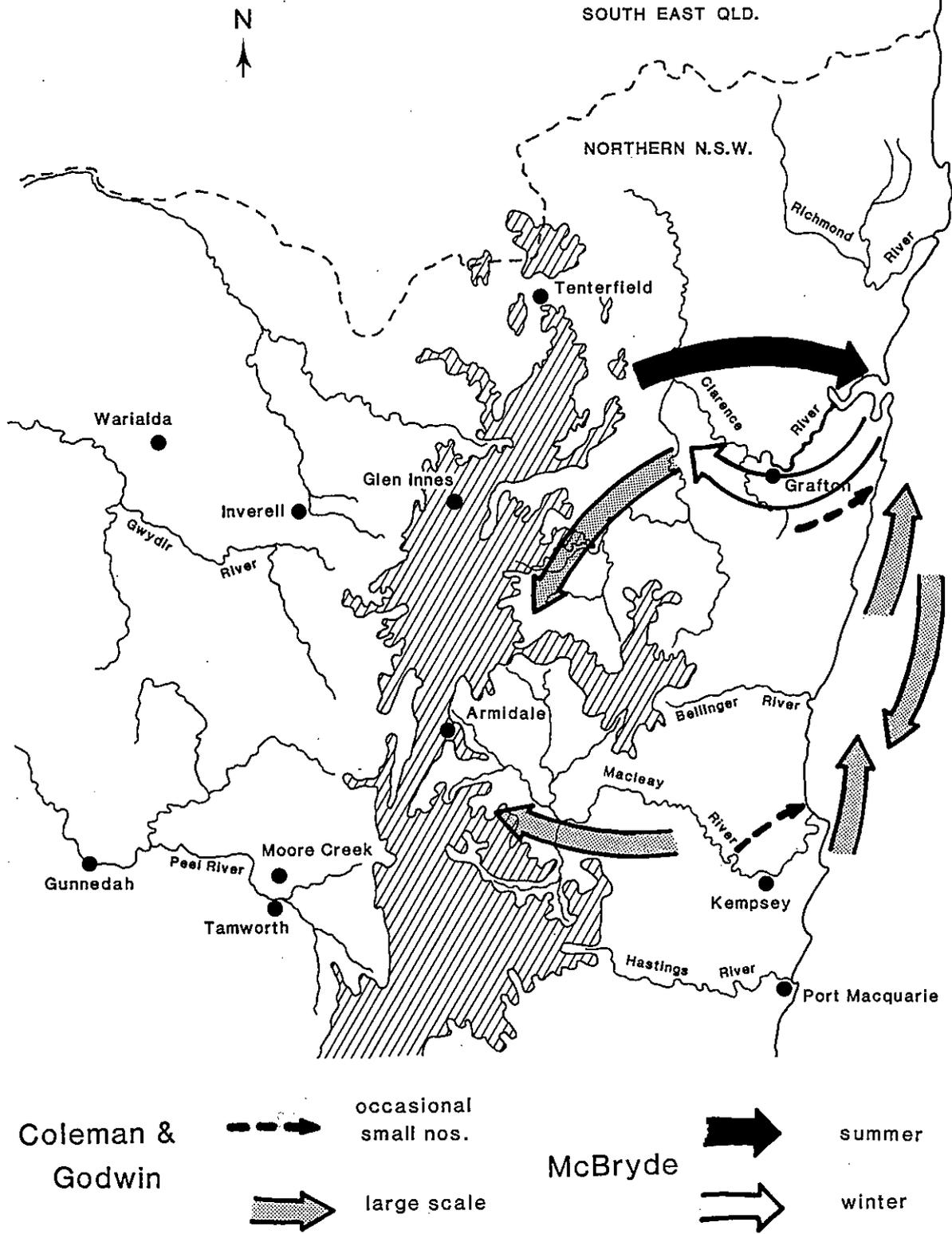


Figure 4.2: Models of seasonal movement by Aborigines in coastal northeastern N.S.W. (see chapters 4 and 6 for discussion).

There are problems too, with the Aboriginal informant quoted by Dawson. Firstly, I can find no reference to the 'Yumbah tribe'. However, various lines of evidence including the similarity of the work 'Yumbah' to 'Yamba', and the reference to the Clarence heads would suggest the informant came from a group which centred on Yamba, on the south side of the entrance to the Clarence estuary (see chapter 5). This group is commonly called Yaygir. If I am correct in identifying informant as a member of this group then it is of interest to note that the range of this group at contact extended at most some 15 kms inland. This is hardly the large-scale movement that McBryde seems to have in mind.

Finally, there are other sources for the Clarence that stand at odds with the evidence offered by McBryde. In his reminiscences, McFarlane (in Ryan, 1964:156) offers this observation:

During the winter months blacks from the neighbourhood of Grafton made pilgrimages to the coastline between Little River and Woolgoolga for change and holiday keeping. The tours would not be undertaken by the full tribe, but from two to half a dozen in company, who were permitted by verbal passport to trespass on the hunting grounds of the intervening tribes. The dietary scale from paddymelon and opossum to shellfish and marine delicacies left the imprint on the rejuvenated visitor to the ocean beach.

Later McFarlane goes on to add: 'Up-river blacks occasionally made winter month visits to the coast in the vicinity of Red Rock where they spent their time quietly till spring denoted that return to the old haunts was desirable' (in Ryan 1964: 157).

McFarlane as a source is probably as creditable as, if not more so, than any of the sources McBryde quotes. He was a long-time, early resident of the region who published his reminiscences in the local newspaper. His observations stand diametrically opposed to the model McBryde offers. In accepting his statement, and I will have more to say on this in the following chapters. Four points of interest should be kept in mind from this account:

1. Movement took place in winter, not summer.
2. There is no suggestion that inland people could 'pop across' to the coast as whim took them, but rather they had to obtain permission from intermediate groups.
3. There is no suggestion that coastal people moved to the hinterland at any time of the year.
4. There is a clear impression that coastal and hinterland people had widely different diets, the former concentrating on marine resources while the latter relied more on terrestrial foods for the greater part of the year.

#### 4.1.2 Campbell, V. (1978)

In the late 1960's Campbell conducted a survey and limited augering program of archaeological sites in the lower Mcleay Valley (1969). As one element of this she undertook a review of the ethnohistorical resources available for this area which was subsequently published as a separate piece of work (1978). In this study of the subsistence economy of Aborigines of the Mcleay at contact, Campbell touches on the question of group movement (1978: 87-9).

Campbell, at best, appears to want to bet both ways and at worst to be confused. I say this because, on the one hand, she recognizes that there is some evidence of discrete coastal and hinterland groups with very different subsistence bases. On the other, she also states that there is no evidence for these discrete coastal and hinterland groups with very different subsistence bases. She suggests there is no evidence for this and makes reference to ethnohistorical evidence from the Clarence and Richmond rivers that seemingly supports an argument similar to that offered by McBryde (see above). To be fair to Campbell (1978: 87) she does say that:

The evidence for the Mcleay on seasonal movement of the Aborigines is so limited that it is impossible to be certain whether they exploited all the regions or found sufficient supplies in their horde (sic) territories.

Her use of the ethnohistorical evidence, however, makes it clear that she favoured the second line of argument. The evidence from the various sources is lumped together to provide a composite picture of Aboriginal diet in the lower reaches of the Mcleay at contact. From this it is apparent she held the view that all people had access to all available resources: coastal, estuarine and hinterland. In support of this she made the following claim (1978:87) in regards to two major ethnohistorical sources:

neither of these been observers indicates that a situation existed similar to that described for the Sydney area . . . and also perhaps for the Richmond River Valley . . . where two different groups appear to have occupied the coastal plain: one group dependent on the sea, the other on inland resources.

She then goes on to say 'there was sufficient movement ... to allow all its inhabitants access to the differing food supplies' (1978:89). This would seem to imply that she considered there was considerable movement between coast and hinterland.

##### 4.1.2.1 Ethnohistorical evidence

Campbell (1978) draws on some of the Clarence Valley material alluded to when discussing McBryde's model (see above). As this has been reviewed I will not consider it again here.

Campbell, however, also offers the observations of Ainsworth (1922) on the Richmond as support for her model, that people moved to and from the coast. She quotes him as saying that the Aborigines arrived on the coast in September for one of the large fish runs and then after a

month 'they would disappear from the coast as suddenly as they came' (Ainsworth, 1922: 30 cited Campbell, 1978:87).

Her main evidence, however, comes from Hodgkinson (1845) and Henderson (1851). Here, however, her argument is based on her impressions of these sources rather than anything they specifically say, a distinction for which there is good reason (see following section). In her view a reading of these two sources, along with some oral testimony, clearly indicates considerable movement along the Mcleay. Campbell (1978:87).

#### 4.1.2.2 Critical evaluation

In my view Campbell's model is riddled with inconsistencies. The Clarence sources have already been covered and the problems with them identified. It is sufficient to note that Campbell makes no reference to the evidence of McFarlane which is obviously at odds with the other sources. Her use of the Richmond material is staggering. On the one hand she believes Ainsworth supports a model of large-scale movement from hinterland to coast. On the other, she concedes '... a situation existed ... in the Richmond River Valley ... where two different groups appear to have occupied the coastal plain: one group dependent on the sea, the other on inland resources' (1978:87). One solution to this is to see Ainsworth describing the activities of a group whose territory did not extend far inland, as was in fact the case (see Pierce, 1978). In this way the situation would then be analogous to the case of movement of the Yaygir discussed in section 4.1.1.3. Thus it demonstrates movement over a distance of a few kilometres by a single group rather than movement of hinterland people *en masse* to the coast.

That Campbell should come down in favour of large-scale movement along the Mcleay on the basis of her reading of Henderson and Hodgkinson is every bit as surprising as her use of the Richmond material in support of this line of argument. This is because, as she readily notes, both Henderson and Hodgkinson certainly suggest that there was not indiscriminate movement from hinterland to coast. Firstly, they both agree that there were a number of different groups, each of which had defined territories from which they obtained all their requirements. Henderson (1851:1:108), for instance, says 'Each tribe had a certain beat, or hunting grounds, ... from which they never move'.

Here he is talking of a group with a range of only 20 miles (32 kms) in diameter. Hodgkinson (1845: 220) confirms and emphasises this view, noting that: ... the abundance of food obtainable in the very extensive brushes, and numerous rivers, enables each tribe to subsist on a very small tract of country.

Then in the same paragraph in which she claims that neither of these sources suggests two separate groups, coast and hinterland, Campbell (1978: 87) makes the following observation:

Nevertheless, there is a difference of emphasis (on what constituted the staple foods) between Hodgkinson and Henderson. The former reports that fish formed 'a never-failing article of food for the blacks . . . while Henderson . . . claims that possums (and terrestrial foods generally - my addition) were the Aborigine's main food.

Given that Henderson was a squatter who owned a station well above Kempsey while Hodgkinson travelled almost exclusively with coastal Aborigines the implication is clear: there were two separate groups with very different subsistence bases, one of which was dependent on coastal resources while the other relied on terrestrial resources of the hinterland. For Campbell to claim that neither of them states this bluntly and therefore it is not a possibility is a spurious argument in view of their clear-cut statements that people did not freely wander from hinterland to coast and back.

The final criticism to be levelled at Campbell is not directly related to her model of group movement but is relevant, as is discussed in chapter 5. This concerns her use of outmoded anthropological jargon, particularly use of the concept of the 'horde'. Continuing in the use of this term after all the debate that took place in the 1960's over this (e.g. Hiatt, 1968; Stanner, 1965) and from which it was freely concluded that it was an inappropriate conceptualisation of Aboriginal social organisation is a curious anachronism that would have been better avoided. (In Campbell's favour it should be noted that she, at least, applies it in the manner in which Radcliffe-Brown (1930) intended when he coined the term. Others in the same volume (see McBryde, 1978a: 4) use it to describe anything from a band to a dialect group). Definition of the social unit involved in the movement using appropriate commonly accepted terms is crucial if we are to correctly identify the level of group movement that was taking place. While this is difficult it is not an impossible task and I attempt it in the following chapter.

#### 4.1.3 Coleman (1978; 1982)

Using archaeological and ethnohistorical evidence from the lower Mcleay Valley, Coleman has, in a classic thesis (1978) and a provocative if flawed paper (1982; cf. Godwin, 1988) offered a model of group movement and subsistence strategy diametrically opposed to that suggested by McBryde and Campbell. Rather than seeing the exploitation of resources as some kind of seasonal event akin to the turning of an hour-glass with everyone moving to the coast or the hinterland as seasonal availability of food directed, Coleman opts for a model in which there are two distinct groups, hinterland and coastal, with markedly different subsistence bases. In her model Coleman does not see coastal people moving back into the hinterland and by and large nor does she consider that hinterland people travelled to the coast in any great

numbers. Whatever movement did take place was either along or parallel to the coast, i.e. a north-south direction, or from the hinterland/foothills through the gorges to the tablelands. Coleman saw the people who lived on the coast as being semi-sedentary possibly living in small villages.

#### 4.1.3.1 Archaeological evidence

When originally framing this argument Coleman drew on her analysis of the vertebrate fauna from a series of few shell middens excavated on the Mcleay estuary and its environs by Connah (1975; 1976). The broad outline of Coleman's argument is mostly clearly seen in the faunal evidence from two of these sites: Clybucca and Stuarts Point.

Clybucca is a large midden on the palaeoestuary in the Mcleay. It lies some 10 kms inland at the base of a Pleistocene shore line. Coleman argues that the site was first occupied about 6000 b.p. with use continuing through until 25000 to 3000 b.p. at which it was abandoned. Likewise, Stuarts Point, also a large midden, was occupied for much the same period of time - an older date of  $9320 \pm 160$  b.p. (Connah, 1976: 3) can be dismissed as dating the top of some sand deposits rather than the base of the midden proper. This midden is very close to the coast, lying on the inner barrier north of the present estuary of the Mcleay and less than 1 km from the coast itself.

Both these sites are dominated by estuarine shellfish with Sydney cockle *Anadara trapezia* and oyster *Crassostrea commercialis* being the most common species. There is a possibility of changes in relative percentages of these two species through time at Stuarts Point (Connah, 1976:3). Coleman (1978), however, considered that there were problems with the stratigraphic profiles at both sites and chose to ignore the issues of temporal change, preferring instead to lump data together from the different levels of each site and then compare the assemblages.

After a detailed analysis of the vertebrate faunal remains Coleman reached the following conclusions that are germane to our current considerations:

1. By using data on the ecology of the various fish species and through reconstructing the age profiles of the population of fish present both sites were most likely to have been occupied in summer.
2. Significant differences in the relative contributions of terrestrial and aquatic vertebrates to the diet could be observed. At Stuarts Point terrestrial vertebrates comprised significantly less of the total vertebrate assemblage than was the case at Clybucca where the relative contribution of terrestrials was far higher.

The evidence, as interpreted by Coleman, demonstrated that the sites were not to be seen as seasonal complements of one another, occupied as they were at the same time of the year. The significant differences in the relative contributions of terrestrial vertebrates served to highlight the ecological settings of the two sites. The greater reliance on terrestrial vertebrates at Clybucca was directly related to the fact that the site was situated well inland and that the estuary was neither so large nor rich this far from the coast, hence the need to 'top up' with other resources. Explicit in Coleman's view of these sites was that moving to the coast was not an option open to the Clybucca people in meeting the estuarine short fall.

#### 4.1.3.2 Ethnohistorical evidence

Coleman felt that the ethnohistorical evidence for movement in this region tended to support her archaeological model, with certain caveats (see below). Her reading of Hodgkinson and Henderson is similar to my own, as outlined in my review of Campbell's model. Coleman considered that these sources emphasized the distinct nature of the coastal and hinterland subsistence base and was consistent with the differences she had noted in the archaeological record - namely that hinterland people were more reliant on terrestrial resources.

Coleman did not attempt a rigorous historiographical review of the ethnohistorical sources. Rather she marshalled support for her model in the following way:

1. A brief review of ethnohistorical evidence from other river valleys between Newcastle and the NSW/Queensland border. From this she highlighted:
2. Evidence for occupation of the coastal zone during winter.
3. Documentation of movement in a north-south direction along the coast rather than perpendicular to it.

In the first area Coleman quickly covered sources from each of the major rivers in north eastern NSW. In this she concluded that where sources suggest movement from coast to hinterland it is small-scale and only within the territory of a single group as suggested by Ainsworth and the Ballina evidence. She then cited sources such as Bundock (1978) who, in reference to the Richmond, state explicitly that hinterland Aborigines did not move to the coast at any time of the year. Coleman then argues that there are in fact as many references to movement from one river valley to another in a north-south direction, i.e. parallel to the coast, as there are from coast to hinterland. Finally in her 1982 paper Coleman cited evidence which seemingly indicates that the 'villages' seen along the coast just after contact were occupied in winter. All

the references to such settlements relate to the autumn-winter months, April through August. Coleman noted that this coincides with the period when the massive fish runs occurred. (Indeed she went on to posit a close relationship between the fish runs, 'villages' and stone fishing weirs recorded along the coast.)

Following on from this, however, Coleman recognized that the archaeological and ethnohistorical evidence are not in complete agreement with each other. For instance, the ethnohistorical evidence stresses the importance of the littoral zone and of large-scale hunts in the rain-forest bordering the rivers along the north coast. The archaeological data, on the other hand, contains little that suggests such hunts nor is there any indication that the littoral played much of a role in the economy during the period 6000 b.p. through to 2500 b.p.

Coleman ingeniously circumvented this problem by suggesting that there may well have been a major change in settlement patterns and subsistence strategies starting about 3000 to 2500 b.p. At this time people reoriented themselves, concentrating more on the littoral resources and organizing large-scale hunts of flying foxes and pademelons. She suggests that the infilling of the estuary which occurred at this time, with the effect of diminishing the estuarine resource base, may have been the catalyst of this change. The 'villages' and fishing weirs are seen as related elements of this shift in emphasis.

#### 4.1.3.3 Critical evaluation

I find myself in agreement with much of Coleman's assessment of group movement, as will be clear from chapter 6, but the following limitations must be noted.

Firstly, the archaeological evidence is far from conclusive in suggesting two very different subsistence bases. For instance, if shellfish meat weight is calculated and added to the fish to give a total figure for the aquatic component of the diet the following may be seen:

1. At Stuarts Point *terrestrial* vertebrates contribute slightly less than 20% of the total meat weight (Callaghan, 1980a).
2. At Clybucca the figures stand at just over 30% of the total meat weight deriving from *terrestrial* fauna (Callaghan, 1980a).

In this case lumping of shellfish and fish meat weight masks the distinction in resource base between the sites by reducing the discrepancies in *terrestrial* and marine resources. There may be, however, good reasons for excluding the shellfish data from the picture as a 'noise' factor. The most obvious would be that shellfish appear to have played a role of underpinning the

diet (e.g. Meehan, 1982; Bailey, 1975; Godwin and Creamer, 1984) rather than having been a major independent component (see also Bowdler, 1981 for discussion of the concept of staples). Even in extremely large shell middens such as Stuarts Point and Clybucca and where, given the prehistoric context, we have little indication of the contribution of plant foods (cf. Cubis, 1977), shellfish contributed less than 50% of the meat weight in the sites (Godwin and Creamer, 1984).

A more telling criticism of the archaeological element of Coleman's (1978) model, however, is the fact that the sites she examines were occupied during the summer. Rather, it would be safer to say the only evidence of seasonality points to this season of the year. We therefore do not know what seasonally complementary sites were like, or whether as Coleman hints we should believe each site was occupied all year; the aquatic component equating with summer while the terrestrial represents the winter subsistence base. Until this problem of establishing seasonality is resolved, Coleman's model has a serious weakness in the archaeological data used to support it.

Turning to the ethnohistorical material, there are likewise some serious flaws. The first of these revolves around the lack of an historiographical appraisal of the sources. Without an attempt to establish the varying worth of the different sources and their value in regards to information about group movement, a more confusing picture is all that emerges from a review of the sources. Coleman's use of sources which seemingly support her model without a clear reason for accepting them over evidence that is contradictory resolves nothing. There could be some movement in some areas at some times while little or no movement in other areas at others. No clear pattern presents itself. An appeal to the notion that the sources which suggest movement from hinterland to coast merely describe intra-group movement falls short of clinching the argument for Coleman. The social organization must be adequately described and the units being referred to must be clearly identified. Only then is it possible to be sure whether intra-group or inter-group movement is occurring. Coleman's use of Pierce's (1971) interpretation which was based on (even then) outmoded concept of Aboriginal social organization is symptomatic of this flaw in her use of the ethnohistorical data. Pierce's model was based on Radcliffe-Brown's concept of the horde. Pierce equated the groups identified by Hodgkinson on the Mcleay and others elsewhere on the north coast as hordes, with their own exclusive range economically-speaking. Coleman appropriated this interpretation (without appreciating the anthropological implications) to support her model that the coast and hinterland groups had mutually exclusive ranges. A case can be made for this, but not without firstly undertaking a more careful consideration of the social anthropological issues involved.

## 4.2 MODELS OF GROUP MOVEMENT ON THE NEW ENGLAND TABLELANDS

### 4.2.1 McBryde (1974 and 1976)

The New England Tablelands were not an area that McBryde dwelt on at any length in regards to this subject. Her observations were limited to noting that she thought people moved to both the east and west of the tablelands in winter to escape the rigours of this season. They returned in the warmer months. She thought that there may have been some currency to the notion that at least some parts of the tablelands may have been associated primarily with ceremonial activity and that group movement may have been related to such ritual gatherings.

#### 4.2.1.1 Archaeological evidence

As might be expected in light of the limited formulation of a model of group movement, there is in fact little data of either an archaeological or ethnohistorical nature on which to base any interpretation. The archaeological data such as it is stems from McBryde's excavation of the Bendemeer rockshelter and the results of her limited field survey of the tablelands.

In the first case, the presence of art and the absence of seed-grinding equipment suggested to McBryde that it may have been a specialized men's ceremonial site. However, McBryde did not push this too far as no seed-grinding equipment had been found anywhere on the tablelands and hence it did not seem to have been an economically-important activity. Thus, one should not read too much into the negative evidence at Bendemeer. The heavy concentration of sites linked to ceremonial activity on the tablelands did, however, seem to lend some weight to the suggestion.

#### 4.2.1.2 Ethnohistorical evidence

Here again McBryde confesses that the ethnohistorical record is not only slight but, to some extent, apparently contradictory. She ignores most of it and simply places it in the 'too hard' basket: it cannot be fathomed. She pins her model of movement off the tablelands in winter on the evidence of one Archie Marlow, who claimed that this was the case.

#### 4.2.1.3 Critical evaluation

It would be unfair, in view of McBryde's own reticence to push a particular view with any great conviction, to treat her model too harshly. However the following points should be noted:

1. The idea that one can escape the rigours of a tablelands winter by simply moving east into the gorges or west towards the slopes flies in the face of geographical fact. Temperatures at night in the gorge country are consistently below freezing point for two

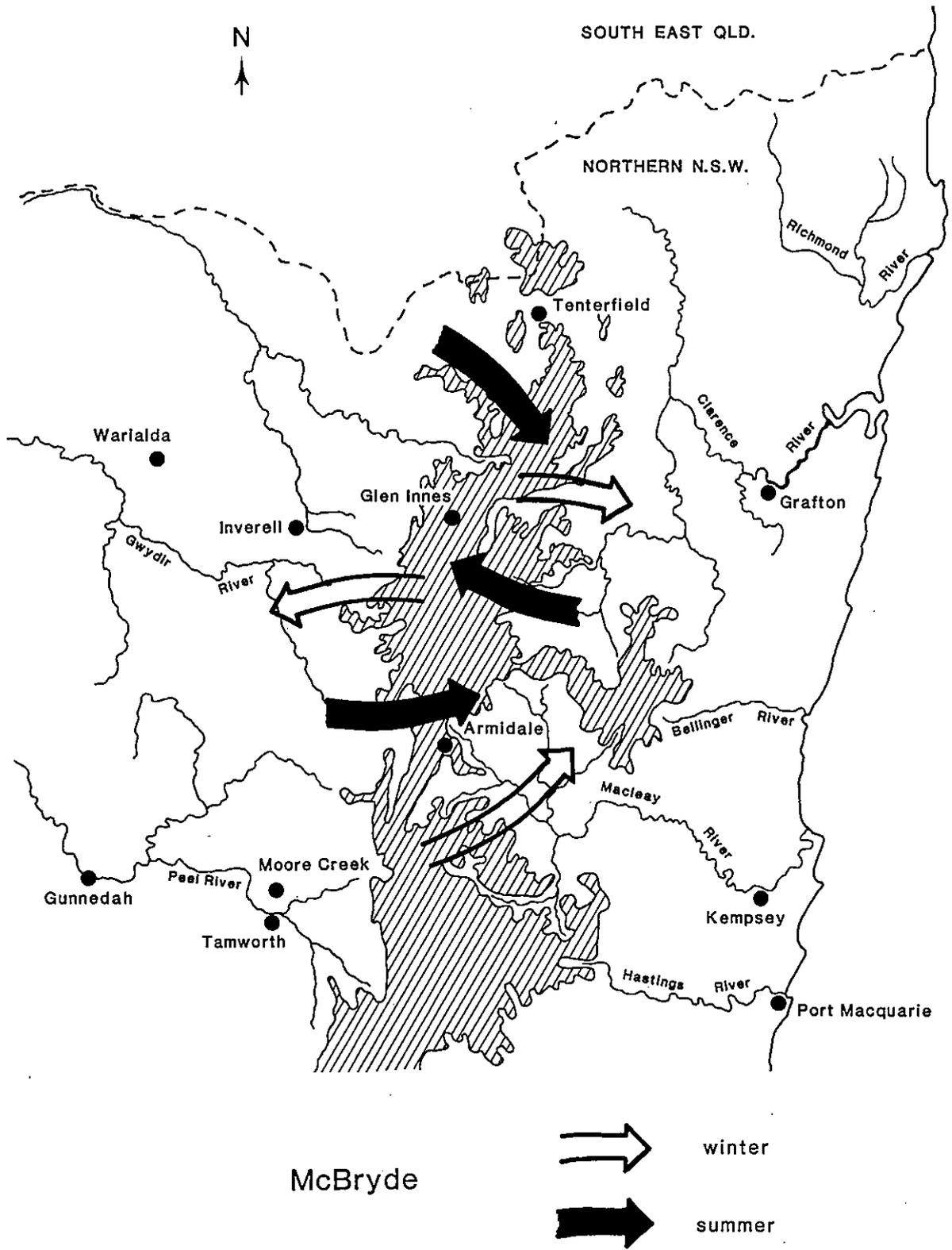


Figure 4.3: McBryde's model of seasonal movement by Aborigines on the New England Tablelands (see chapters 4 and 6 for discussion).

months, though the days are warm. I have experienced a series of 13 nights when temperatures dropped below  $-2^{\circ}\text{C}$  and down to  $-7^{\circ}\text{C}$  for 3 nights in succession. The distance to be travelled in a westerly direction to find an area significantly warmer than the tablelands must be considered prohibitive (see chapter 2).

2. While it is true that the ethnohistorical evidence *appears* confused, a reliance on the reminiscences of Archie Marlow provides no greater clarity because he must be viewed as a highly suspect source. Marlow was an ex-convict who worked as a shepherd in the Tenterfield area. Yarwood and Knowling (1982) have commented on the hostile attitudes of ex-convicts towards Aborigines, and the reasons for this. Marlow was true to this form in that he was known to take a pot-shot at any Aborigine careless enough to wander within range.

#### 4.2.2 Bowdler (1981a) and Bowdler and Coleman (1981)

Bowdler, in two papers (one in collaboration with Coleman), has offered the most sophisticated and fully developed model of group movement to the tablelands and the place of this area in the regional economy. Taking as her starting point McBryde's almost 'throw-away' line that the tablelands may have been a major ceremonial centre, Bowdler goes on to formulate a model which is as provocative in its suggestions concerning the use made of the tablelands by its prehistoric inhabitants as it is remarkable for its rather free use of the archaeological record and ethnohistorical sources of this and other regions.

In summary, Bowdler's model has four elements:

1. The tablelands was a major ceremonial centre in the region.
2. People from the eastern foothill country and western slopes as well as tableland people attended joint ceremonies in the summer.
3. Land above 1000 m.a.s.l. was used exclusively for ceremonies, with mainline subsistence activity taking place below this altitude. Daisy yams (*Microseris scapigera*) were thought to be the staple vegetable food of these groups.
4. The higher parts of the tablelands were abandoned in winter with movement to lower altitudes below 600 m.a.s.l. taking place.

Bowdler argues that such a model clears up a number of points regarding the prehistoric occupation of the New England Tablelands, some of which are touched on below.

#### 4.2.2.1 Archaeological evidence

Bowdler drew on a range of archaeological material, some from the region whilst more comes from elsewhere in the greater Eastern Highlands of Australia, in attempting to substantiate her model. The first point she made is the remarkable contemporaneity there is in the occupation of the eastern uplands with dates of c.4500 b.p. marking the start of intensive exploitation of this zone. Having then made a case that in number of these regions, particularly the Southern Alps, the higher areas appear to be associated with ceremonial activity she suggested the same could apply in the New England region. She then drew attention to the apparent lack of occupation sites in those parts of the tablelands above 1000 m.a.s.l. while noting the presence of a dozen ceremonial sites in these same areas. All this is consistent, in Bowdler's view, with the idea that the higher parts of the tablelands were purely used for ceremonial activity, while normal daily subsistence requirements were met from resources harvested at lower altitudes.

#### 4.2.2.2 Ethnohistorical evidence

In Bowdler (1981a) reliance is placed on secondary source for details of group movement. Bowdler simply reviewed the general statements made by McBryde (see above), Walker (1966) and Belshaw (1978), to build her model. In the joint paper (Bowdler and Coleman, 1981), however, there is a more formal though very limited review of the ethnohistorical evidence. In regards to movement from the western slopes to the tablelands, and of tablelands people to the western slopes, the reports of Gardner (1854) are utilised. With respect to movement from coastal hinterland to tablelands two sources are utilized. The first of these is the report of Merewether (1851), C.C.L. for the Mcleay, to the Governor in which he relates of the Mcleay Aborigines that: 'In summer it is their wont to proceed to the tablelands'. The reminiscences of O'Sullivan-White (1934) are of great significance to Bowdler as well because he records a large ceremony a few miles to the east of Armidale in 1851 at which Aborigines from the Clarence, Mcleay and Tablelands were in attendance. This then contains evidence central to Bowdler's argument: Aborigines from the greater region visiting the upper tablelands for joint ceremonial activity with tableland and, presumably, western slopes groups.

Like McBryde, Bowdler also sees the tablelands being abandoned during winter because of the rigours of this season. (I have already noted the fallacious thinking involved in the view that such movement could avoid the climatic extremes experienced at this time of the year). Bowdler's more sophisticated suggestion involving total abandonment of those areas above 1000 m.a.s.l. is offered for two other reasons as well. Firstly, it agrees with her notion that

these higher parts were only used during summer. Secondly, it allows her to revise the density figures which stem from the one population estimate available (that of McDonald, C.C.L. for New England, 1840). By excluding areas above 1000 m.a.s.l. from the available territory Bowdler calculates the population density rises from 1 person per 56-72 sq km, a figure she considers unbelievably low, to 1 person every 26-32 sq km, a density much more acceptable to her. The basis for the choice of 1000 m.a.s.l. is Bowdler's personal observation that the tablelands are a more open and harsher environment above this altitude. Finally, although it is not pursued too strongly, the upper tablelands must have been abandoned because there are not, in Bowdler's view, the resources to sustain people all year round.

#### 4.2.2.3 Critical evaluation

It should be clear from the earlier chapters on the region's environment that Bowdler's model with its heavy emphasis on the height of land above sea level is seriously flawed. There are no botanical, geomorphological or geological reasons for positing some kind of meaningful environmental change at particular altitudes (see Godwin, 1983). Moreover, the daisy yam argument is incorrect because Bowdler appears to have confused the common-daisy yam, which is rare on the tablelands with *Hypocheris radicata*, a now-common introduced plant that looks similar in its flower. Elsewhere, I have also argued that the tablelands was a much richer environment than present-day observations would suggest (see chapters 2 and 7). While not as rich as the coastal zone, the tablelands offered a wide range of plant and animal resources in quantity.

Bowdler's overweening concern with figures for population density is also misplaced. There are two other explanations for these figures apparently low estimates. Recalculation taking these factors into account leads one to arrive at estimates that are perhaps more normal than that based simply on McDonald's estimate of population (see chapter 5 for a more detailed exposition of this issue). There is no need to cut out pieces of territory to obtain figures that are acceptable to individual researchers.

Turning to the archaeological data it would be fair to say that Bowdler's model is more a figment of the archaeological survey strategy employed by McBryde than of any archaeological reality. McBryde, as was right and proper given the research objectives of the time, was interested in digging sites which offered good potential for long cultural sequences, and recording as many of as wide a variety of field monuments as possible. McBryde was not interested in open sites, locals were not likely to point them out and the geology of the New England Tablelands is not such to produce a large number of *obvious* sites. Consequently, McBryde did not attempt to document sites as they were not germane to her objectives. However, nowhere does McBryde suggest that such sites do not exist. Bowdler has

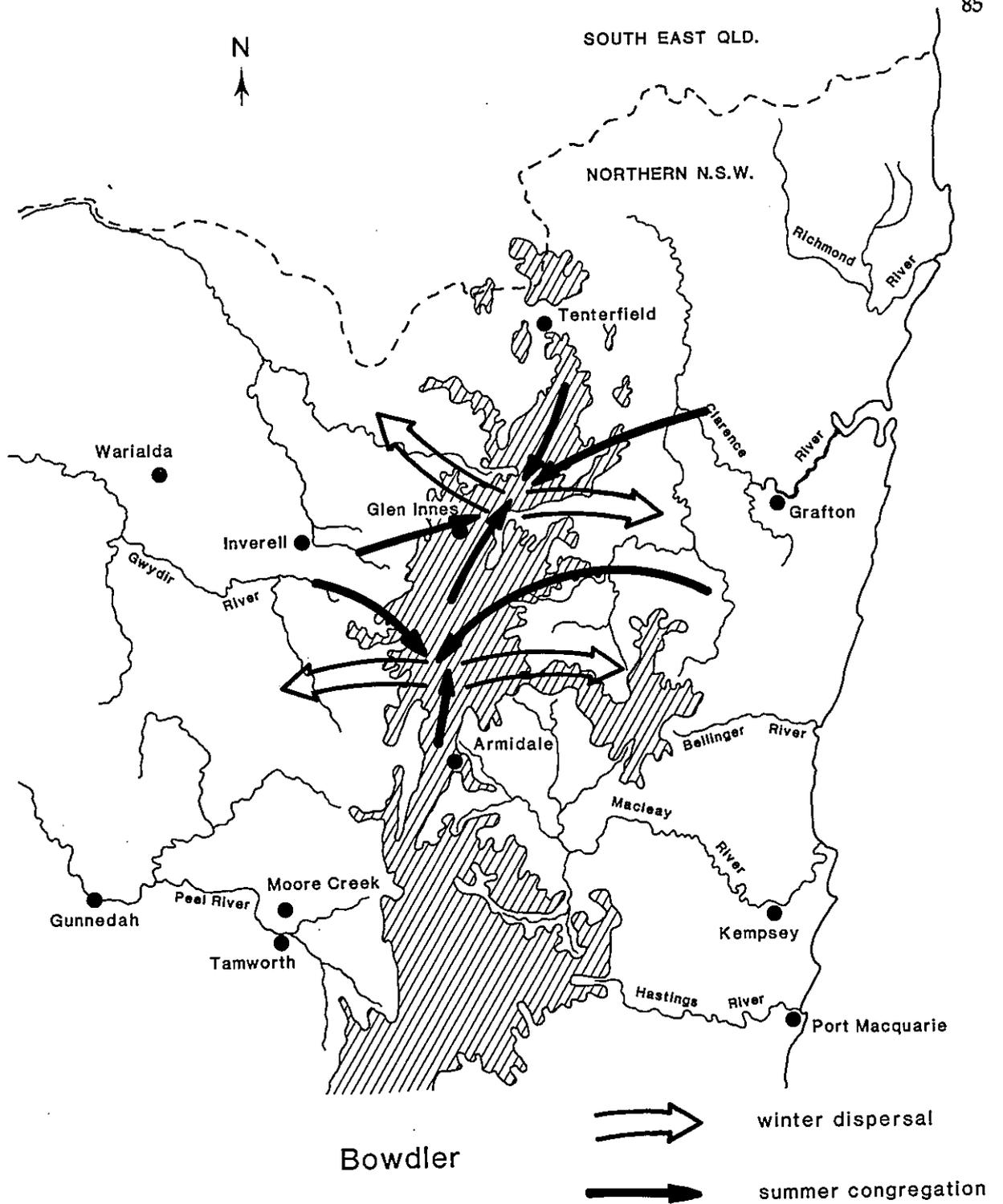


Figure 4.4: Bowdler's model of seasonal movement by Aborigines on the New England Tablelands (see chapters 4 and 6 for discussion).

appropriated the results of a survey the strategy of which is totally unsuited to answering the questions Bowdler is interested in asking. As will become clear in the following chapters, there are a large number of sites, albeit open sites, on the New England Tablelands many of which are above 1000 m.a.s.l.

It is very hard to review the ethnohistorical evidence concerning group movement because of the heavy use of secondary sources. Of the primary sources that are cited Gardner (1854) stands as the most detailed. McDonald, as will be discussed later when considering population estimates, is not without his problems. The third source, the reminiscences of O'Sullivan-White, is a minefield.

These reminiscences, published in *Mankind* in 1934, are in fact the edited notes of a talk given by O'Sullivan-White at a local historical society some years prior to their publication. Although it is not entirely clear, it appears that they were edited by someone other than O'Sullivan-White. This would certainly explain the most glaring error in the paper: the date given for the ceremony observed by O'Sullivan-White and described in this published version is 1851 which is only 10 years earlier than the date given for his birth in the same paper, i.e. 1861. I do not know quite what to make of this but a number of possibilities spring to mind in regards to the evidence of joint ceremonies between Tableland, western slope and coastal groups near Armidale. Firstly, the date of his birth, 1861, could be correct in which case the ceremony must post-date this by some years. Thus, he could be describing an event which takes place in at a time well after traditional lifestyle had been near-fatally disrupted. Secondly, all references to figures or distances might be challenged: for instance, the 2 miles east of Armidale could easily be 20 miles east of Armidale. Such a change would profoundly affect the significance attached to this statement. While I am not suggesting we should read the data in this way, I think a certain caution in utilizing this material would be in order.

Apart from this, there is some good ethnohistorical evidence which indicates a number of problems with Bowdler's model among which are the following:

1. The tablelands are not abandoned in winter.
2. There was movement to the west off the tablelands by tablelands people in summer.
3. Relations between tableland and coastal groups were not good, and it is unlikely that they conducted joint ceremonies.

These data will be reviewed in detail in chapter 6. For now it is sufficient to note that there is a considerable body of ethnohistorical material that is not adequately explained in Bowdler's model.

**4.2.3 Belshaw (1978)**

The final model of group movement to be canvassed here is that proposed by Belshaw. In this he sees the tablelands as fulfilling a somewhat different function from that Bowdler which ascribes to them. Rather than being an area of joint gatherings and ceremonies between east and west, he offers the view that they were an area of demarcation between such groups. Belshaw (1978: 76) states it thus:

the tablelands was a marchland area between strong tribal groups in the east and west and occupied on a permanent basis by perhaps one tribe with the balance of the population occupying the area for only periods of the year . . . Under this marchland hypothesis the central section of the tablelands was occupied by the Aneiwan and maintained a steady population, although there probably would have been seasonal shifts within this tribal area. The eastern scarp country was under the influence of the coastal tribes. In the north there was tribal migration from the western slopes and in the south movement from both the coast and western slopes. These areas were largely occupied in the summer months.

**4.2.3.1 Ethnohistorical evidence**

Belshaw did not attempt to harness any archaeological evidence to his model. Rather he relied purely on the historical record, such as it is. However, he did not attempt to directly relate the primary sources to the various components of his model. Instead in preceding parts of his paper he enumerated various pieces of ethnohistorical evidence that seemed to have some bearing on the issue. He then presented the summarized model outlined above as being in a sense self-evident from the few historical references given. Consequently, it is rather difficult to present a dissected view of the evidence used as a basis for formulating the hypothesis. Suffice it is to say here that he draws on the standard sources for movement to and from the tablelands (e.g. Gardner 1854); Massie, 1851; and assorted secondary sources), all of which will be reviewed in chapter 6.

**4.2.3.2 Critical evaluation**

As will become clear in chapters 6 and 7, my own view of group movement and affiliation on the tablelands accords with some elements of Belshaw's, although I do offer certain modifications. In the preceding section, however, I have noted the lack of rigorous association between evidence and interpretive model. This is the main weakness in Belshaw's argument but in fairness to him it should be recalled that he does talk of it as an hypothesis requiring testing. Quite how he envisaged this might be done he does not care to elaborate, but obviously ethnohistorical evidence could not be used: it had been used already in formulating the

hypothesis. In subsequent chapters I will consider this problem further and will show how archaeological data may be directed at the problem.

#### 4.3 CONCLUSION

In this chapter I have attempted to describe the various models of group movement that have been advanced for north eastern NSW. I have also tried to set forth the evidence used to substantiate these models. It is clear that there are major inconsistencies and flaws with all these stemming from either a weak archaeological base, use of problematic ethnohistorical sources without due consideration of the need for historiography, and in some cases both these problems. In the following chapters I attempt to take what evidence we do have on this issue, fit it in to a coherent model of group movement, and then test it against relevant archaeological data. Before doing this, however, I review what is know of Aboriginal social organization and linguistics from this region. This is essential if we are able to understand the true significance of any reference to movement in the region.

## CHAPTER 5

## LINGUISTICS, SOCIAL ORGANISATION AND DEMOGRAPHY

## 5.1 INTRODUCTION

In the previous chapter I identified the lack of a clear appreciation of social organisation and linguistic divisions in the New England region. I noted this as one of the fundamental flaws of a number of the models of group movement reviewed there. This chapter is an attempt to redress this and provide the necessary background before proceeding to outline my own thinking on the issue of group movement.

In undertaking this task it has not been possible to appeal to any single standard text on Aboriginal social organisation, simply because none exists for this area due to the timing and pattern of settlement, and the pattern of development of anthropology in Australia. The undertaking has been further complicated by the fact that conclusions found in the normal references that have attempted to synthesize the available data (e.g. Tindale, 1974) are highly variable in their usefulness. As I will show, Tindale's 'tribal' boundaries for this region actually represent a hotch-potch of linguistic and political units, with dialect and major language group boundaries used without distinction, and no discussion of their political significance in terms of alliances or otherwise. It also appears that in some cases he has allowed what he considers to be commonsense to override the data in the placement of boundaries on maps by shifting a boundary to a prominent geographical feature he considers must have been the marker (Tindale, 1976). Moreover, at the same time he has imposed an absoluteness to the boundaries that the data does not sustain. More specific examples of these shortcomings will be noted in the following discussion.

In an attempt to overcome this problem, in what follows, I have reviewed all available data on questions of linguistics, social organisation and demography. This has included both historical documents, the work of the early gentleman anthropologists and the more recent studies by professional linguists and anthropologists. Where it has seemed appropriate I have also referred to anthropological studies undertaken elsewhere in Australia to lend support to various interpretations of the data by showing that such interpretations do have some basis in anthropological fact and are not simply fanciful speculation on my part.

## 5.2 LANGUAGES OF NORTHEASTERN NEW SOUTH WALES

### 5.2.1 Definitions

In the following discussion I follow the definition of Dixon (1980) in dividing languages into either tribal languages or dialectal languages. Dialects consist of all variations of a single language that are mutually intelligible. A tribal language consists of only those dialects which are mutually intelligible though there may be some minor differences in vocabulary and linguistic rules. Any attempt to converse between one tribal language and another requires true multi-lingual capabilities because the differences between the languages include major variations in important linguistic rules of syntax as well as lexical and phonological differences.

It should also be noted that linguistic boundaries at either the dialect or tribal level do not equate in any simple fashion with socio-political units, though there is some relationship. This issue will be pursued later in this chapter but is not considered in the discussion which immediately follows.

The relationships between languages discussed below are illustrated in fig. 5.1 and the approximate locations of the languages referred to are shown on fig. 5.2.

### 5.2.2 Languages of the North Coast

In the coastal and sub-coastal segment of the study area there were three tribal languages spoken: in the northernmost portion covering the area extending from southeastern Queensland down into the Richmond valley and also including the upper reaches of the north arm of the Clarence, the Bandjalang language was used (Crowley, 1978); the Gumbaynggir language was spoken in an area including the Clarence and Nambucca valleys (Hoddinott, 1978; Crowley, 1978); the southernmost language, Dhan-gadi, covered the upper and lower reaches of the Macleay valley (Hoddinott, 1978)

In each of these tribal languages there were a number of dialects. Amongst the Bandjalang there were at least twenty (Crowley, 1978: 1). The location of a number of these are known: the Arakwal, who lived on the estuary of the Richmond; the Minjambal, who occupied the area around Byron Bay and the Brunswick River; the Waalubal, of the Tabulam area; the Baryugil group, who lived near the town of that name on the middle reaches of the north arm of the Clarence.

In Tindale's maps (1974) the area shown as being Bandjalang territory is considerably smaller than that I have described above. The reason for this is that Tindale has carved a number of the dialect groups in southeastern Queensland off and called them separate tribes, as he has

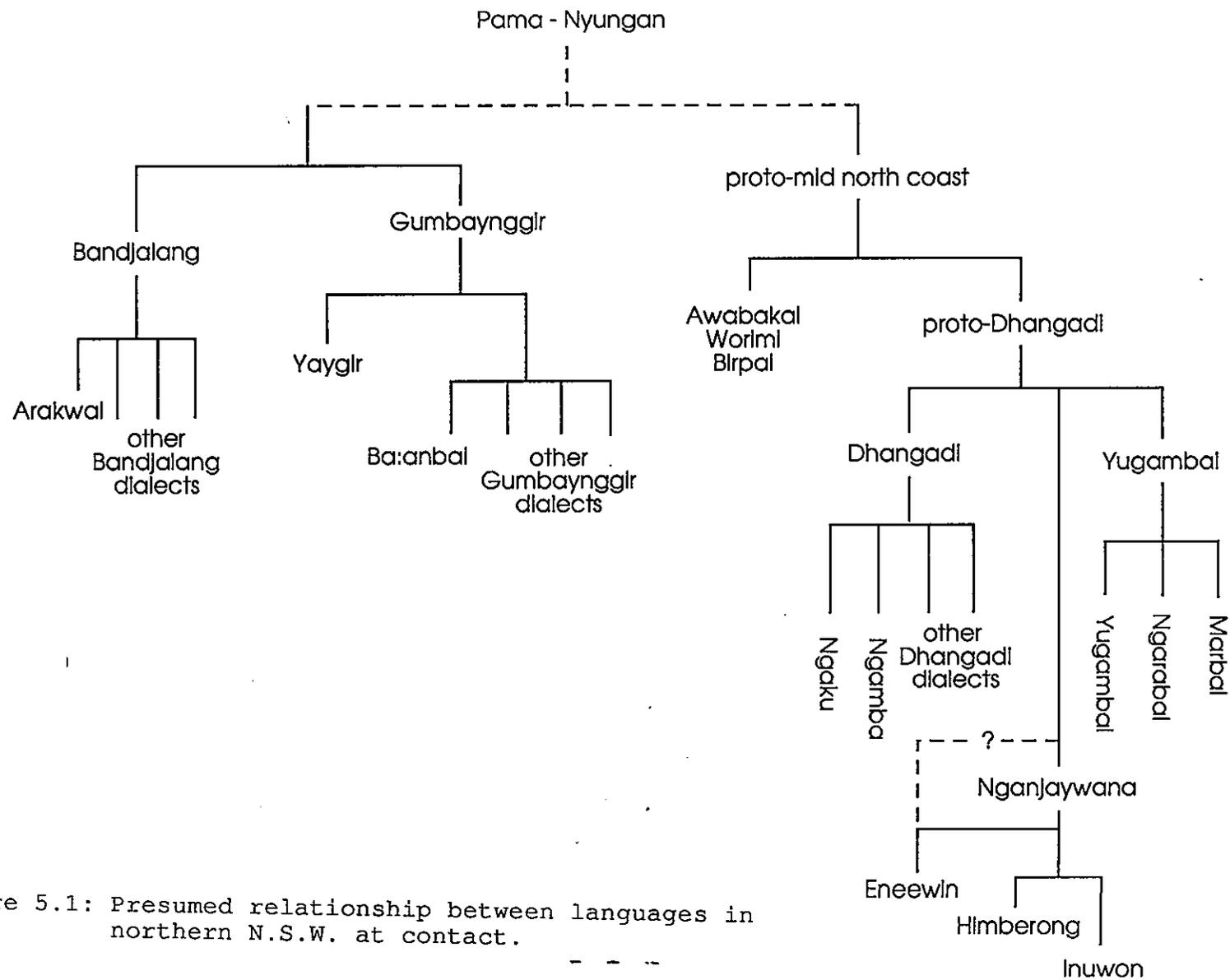


Figure 5.1: Presumed relationship between languages in northern N.S.W. at contact.

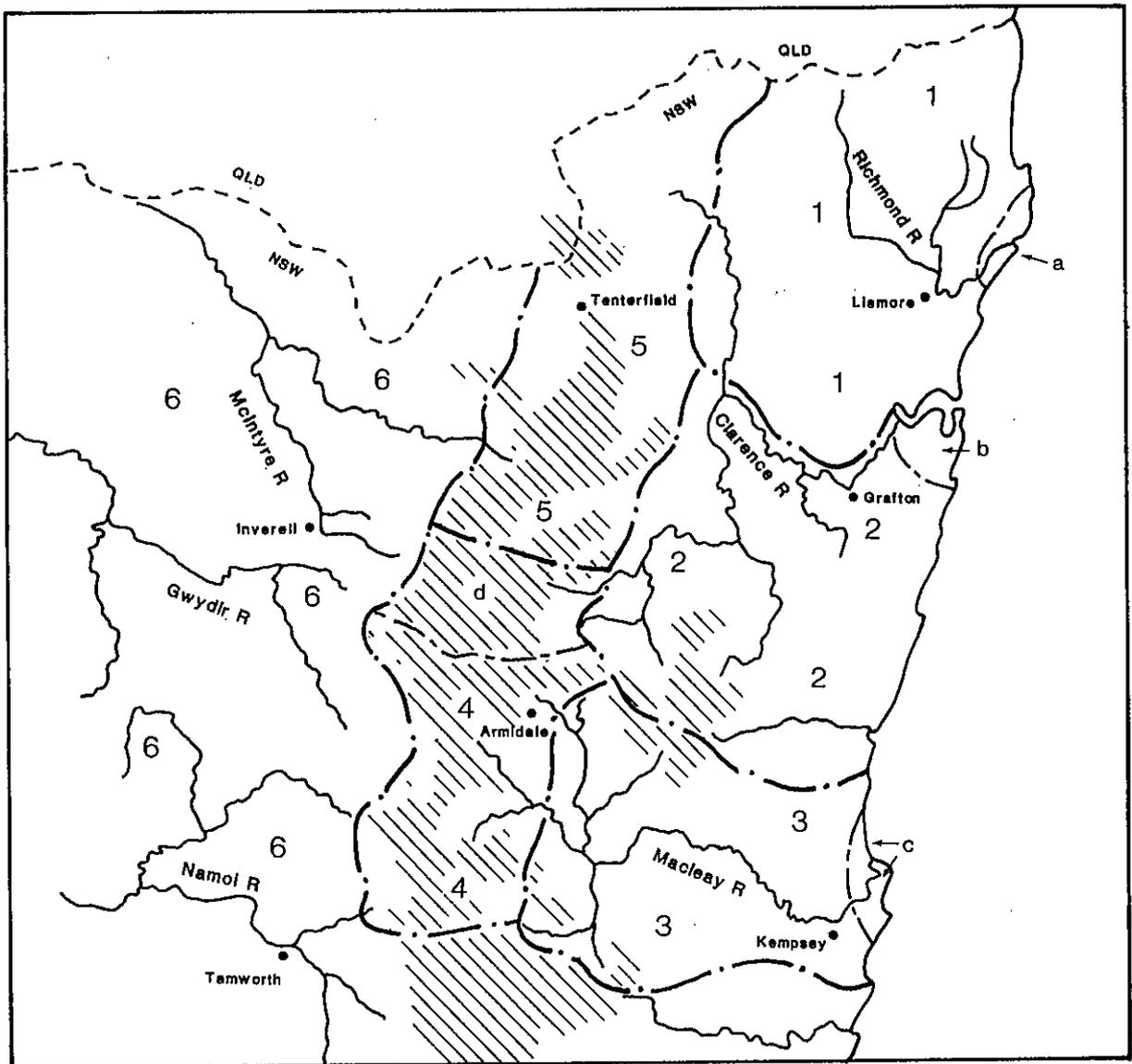


Figure 5.2: Distribution of languages in northern N.S.W.at contact (hatched area: tablelands).

- |                |                     |
|----------------|---------------------|
| 1. Bandjalang  | a. Arakwal          |
| 2. Gumbaynggir | b. Yaygir           |
| 3. Dhan-gadi   | c. Ngumba and Ngaku |
| 4. Nganjaywana | d. Eneewin          |
| 5. Yugambal    |                     |
| 6. Gamilaroi   |                     |

also done with the Arakwal. The basis of his decision to do this is not clear, but seems to revolve around his determining that they represent socio-political units separate from other Bandjalang speakers. Whatever the strength of this argument there is absolutely no linguistic rationale for such a division (Dixon, 1980: 241).

There were at least four dialect groups among the Gumbaynggir: one in the Grafton area which was perhaps called Yuungay (Hoddinott, 1978: 54); Yaygir, covering an area on the southern side of the Clarence estuary (Crowley, 1976); Baanbay, spoken in an area running between Wollomombi and Ben Lomond on the eastern edge of the tablelands (Hoddinott, 1967); and a fourth, unnamed but spoken in the Nambucca area (Smythe, 1948: 4). There were almost certainly a number of other dialects but virtually nothing is known of them and we can only speculate as to their distribution in prehistoric times (Crowley, 1976; 1978).

Tindale (1974) has lumped some of these as part of a single tribe while splitting others off for separate treatment. In this case the Baanbay and Yaygir are referred to as separate tribes while the others are placed in an homogenous group called Gumbaynggir.

The Dhan-gadi tribal language was divided into at least four dialects: Ngamba and Ngagu, spoken on the north and south sides of the Macleay estuary respectively (Holmer, 1966; Hoddinott, 1978: 55; Crowley, 1976: 20); at least one in the Kempsey area, at present unnamed (Holmer, 1966); and a dialect called Nulla Nulla, spoken in the upper reaches of the Macleay (Radcliffe-Brown, 1930; Anon, *Science of Man*, 1897 Anon, *Science of Man*, 1911). This is almost certainly an underestimate of the number of dialects that were originally in this area. Hodgkinson (1845: 222), for instance lists six groups in the lower reaches of the Macleay and there is mention of another two in the upper reaches (Henderson, 1851: I: 301). While it is unclear what type of group is referred to here (both Henderson and Hodgkinson call them 'tribes', the territory of two of the groups listed corresponds closely to two of the named dialects mentioned above, the Ngamba and Ngaku: Hodgkinson refers to them as the Yarrahappini and Calliteeni respectively. This variation in name should not unduly concern us as duality of name is common, and the name given to a group often depends on the source's background and relationship to the group in question (Calley, 1959: 61; see also Lourandos, 1980a: 53-6). It might be reasonable to suppose that the six other groups mentioned might also be separate dialects.

The area shown by Tindale as comprising Dhan-gadi territory is far smaller than that I have indicated above. As in the previous cases it is primarily due to the fact that dialect groups have been shown as separate tribes, with Ngamba and the Ngaku in this case being delineated in this way. This, however, is not the only difference in territories. Tindale shows

the Ngamba and Ngaku covering a far larger area than I have included on fig. 5.2. I have preferred smaller areas for each of these groups because a variety of sources using early informants and more recent linguistic surveys (Hodgkinson, 1845: Enright, 1935: 239 in Ryan, 1964; Smythe, 1948; Holmer, 1966; McBryde, 1974: 8; Hoddinott, 1978: 55) have argued that the main area in which these dialects were spoken was in small areas on the estuary of the Macleay and adjacent coast, incorporating a few square kilometres of land. There is also little doubt that Dhan-gadi speakers were found through an area extending from the coast to the eastern margins of the tablelands (Hoddinott, 1978:55). Tindale's map shows them confined to the rugged gorge country well to the west of Kempsey. Part of the reasons for Tindale's apparent error in the placement of boundaries is his determination to find suitable environmental features to mark them (Tindale, 1976: 25) and thereby impose a rigidity that may not have existed. That such sociopolitical boundaries were neither stable nor static may explain the confusion that is found in trying to establish that between the Dhan-gadi and the Gumbaynggir, with differences of up to 20 kilometres being common. No doubt the boundary varied depending on whose perspective was taken: Dhan-gadi looking north or Gumbaynggir looking south. There is also the possibility that there was a common range over which members of both language groups foraged (Stanner, 1965: 2).

### 5.2.3 Languages of the New England Tablelands

Unfortunately, we have far less data for the tablelands than is available for the coast. All the languages are now extinct and study of them must be based primarily on the few word lists compiled during the 1890's and early 1900's. A very few items of vocabulary were collected in the 1960's by Hoddinott (1978). Dixon (1980: 241) shows only two tribal languages on the tablelands: Nganjaywana (commonly, but incorrectly, referred to as Anewan - see Crowley, 1976) and Yugambal. The former of these two languages was spoken in the southern half of the tablelands while the latter was spoken over an area extending from Glen Innes, in the central northern tablelands, up into the Stanthorpe district.

Crowley (1976), in his major review of tableland languages, argued cogently that the numerous other tableland languages found in some of the earlier sources on this subject were in fact dialects of these two tribal languages, though Eneewin did present difficulties in this regard (see below). Thus, Marbal and Ngarbal are dialects of Yugambal, which is both a dialect and tribal language name, as these three share a high percentage of lexical items and were said to be mutually intelligible (Crowley, 1976: 21; McPherson, 1904: 683).

In Nganjaywana there were at least two dialects: Himberrong, spoken in the Walcha district, and Inuwon, spoken in the Bundarra-Armidale-Uralla area (Crowley, 1976: 38). Eneewin was spoken in the Guyra-Tingha area. This last language shares a number of linguistic affinities

with the other Nganjaywana dialects and the closeness of its name often leads to it being confused with Anewan/Nganjaywana. However, Crowley (1976) has argued that it should perhaps be seen as a separate tribal language because substantial differences do exist between it and the others and evidence suggests that the languages were not mutually intelligible: Nganjaywana speakers could not understand Eneewin speakers (McPherson, 1904: 683).

Nganjaywana has attracted considerable attention from linguists as it was viewed as unique to all other Australian Aboriginal languages. Indeed, some linguists were prepared to exclude it from the Australian macrophylum because it bore few resemblances to any other Australian language in its structural rules or lexical items (see Hoddinott, 1978 and Crowley, 1976 for a more thorough review of this issue). Crowley (1976) has demonstrated that this view that Nganjaywana represented an aberrant language was an overstatement of the case and that a strong argument can be made that it does fit neatly within the Australian macrophylum. Rather than being aberrant, Nganjaywana is simply an example of standard rules of linguistic development being taken to a point rarely seen elsewhere in Australia.

Crowley (1976) shows that Nganjaywana is most closely related to Dhan-gadi, although it has diverged to such a degree as to make this relationship highly tenuous. It also bears some relationship to Yugambal, though this is less strong than the ties with Dhan-gadi. It seems likely therefore that Nganjaywana and Dhan-gadi derived from a single proto-language. To explain the radical divergence Crowley (1976: 41) suggests that the extreme change seen in Nganjaywana could result from highly limited exchange of vocabulary items. He posits that the existence of a secret or mystical vocabulary in tandem with the vernacular would allow words that became tabu to be replaced without recourse to another language: such borrowing is a relatively frequent occurrence that explains much of the lexical sharing evident in Aboriginal languages. Instead it is possible that among Nganjaywana-speakers mystical words could have been employed to fill this gap. Because there was little sharing with other languages and, as a result, little input of phonological rules associated with the borrowed words, Nganjaywana drifted away from the neighbouring languages to a remarkable degree but in a highly predictable fashion. Whatever the process the extreme divergence of Nganjaywana from these neighbours posits a period of marked social isolation for Nganjaywana speakers during which time it was not possible, or they did not wish, to borrow lexical items from their neighbours.

#### 5.2.4 Languages of the Northwestern Slopes

There is little doubt that the northwestern slopes were covered by a single tribal language called Gamilaraay (also called Kamilaroi) (Dixon, 1980: 241). This language was spoken by a large number of people, with some estimates suggesting there were of the order of 5,000

people. There were a number of dialects of this language, hardly surprising in view of the fact it was spoken over an area approximately half the size of England! At least three dialects can be discerned: the Bigumbal, the Kiriambul and the Wiriwiri (Pearson, 1973: 24-8 and associated maps; Tindale, 1974). The available sources are not good enough to discern more with any surety, and further linguistic work is needed on this point. How hard and fast were the boundaries between these and other Gamilaraay dialect groups is also open to debate.

### 5.3 SOCIAL ORGANISATION

#### 5.3.1 Introduction

This section serves to emphasize how little we really know about the social organisation of the Aboriginal people who lived in this region. While it is true that there was some work done on various aspects of the social system in the late 1890's and early 1900's, it was undertaken by gentlemen anthropologists such as Mathews, a surveyor who took an interest in Aboriginal society and wrote several hundred papers on topics associated with it using data gathered from throughout Australia. Recent work by Barwick (1984) suggests that, unfortunately, Mathews sometimes wrote on things he knew little about and that he regularly doctored his data to suit the line he adopted in arguments with other anthropologists on some arcane area of social organisation.

The first work by a professional anthropologist was undertaken by Radcliffe-Brown in the first few decades of the 20th century (1929; 1930). This is of some use, but unfortunately Radcliffe-Brown was of the opinion that little information on traditional social organisation remained to be collected. In the 1950's Calley (1959) undertook research with Bandjalang-speaking people of the Tabulam area. Whilst he was mainly interested in a number of issues related to the assimilation process he also collected a little data on clans and the affiliation of individuals to them, of which a number of the older people retained knowledge. In what follows, as I noted earlier, my approach has been very much a reconstruction based on a fusion of the relevant data from the older historical sources together with interpretations of Radcliffe-Brown and Calley of data they collected during the 1920's and 1950's respectively. Unfortunately, the matter is further complicated as the early sources suffer from the common problem of such data: lack of rigour in the use of some terms, in particular use of the term 'tribe'. This term was applied to groups ranging in size from what we would call the 'band' up to agglomerations of several hundred people. The problem stems from the complexity of Aboriginal social organisation and linguistics, something the early settlers were unprepared for, imbued as they were with concepts of the 'noble savage' or versions of social Darwinism. They were totally unaware of the subtleties of the land-owning and land-using group, or differences in dialects and larger language groupings. Barwick (1984) has documented something similar in the early historic sources for southern Victoria. She notes (1984: 106):

Most 19th century observers ignored or were bewildered by the various levels of Kulin identification because they did not grasp the underlying principles. A few perceived dialect and language differences and labelled the populations thus distinguished as tribes or nations, but most used the term tribe to designate the small named groups occupying the particular localities. The names they recorded were those of the land-owning clans...

To partly compensate for these failings and weaknesses in the data and as an aid in interpretation I have, where appropriate, referred to research undertaken in other parts of Australia to substantiate interpretations of a patchy body of data.

### 5.3.2 The Basic Social Units

As has been noted in other parts of Australia, Aboriginal society in northern N.S.W. can be divided into a number of distinct units. These include the hearth group, the band, the clan, the tribe and possibly larger alliances of people sometimes referred to as nations or confederations.

5.3.2.1 The Hearth Group: this forms the basic building block of Aboriginal society, composed as it is of the members of the nuclear family: a man, his wife or wives and their children (Altman, 1987). Cunningham (in Russell, 1888: 90), when travelling throughout the western slopes encountered a number of individual hearth groups composed of a man, between one and three women of marriagable age, as well as children. Such groups were also noted on the coast where Henderson (1851) observed that people would hunt in small groups comprising a man, his wife or wives and children.

5.3.2.2 The Band: here I follow Stanner (1965) in seeing the band as the main land-using group in the region. It could range in size from a single hearth group or two, to upwards of 50 individuals. There was a high degree of fluidity in membership of such groups, with groups coalescing into relatively large aggregations and then dispersing as they liked (see Hodgkinson, 1845). Oxley (1820: 291-2) encountered a couple of bands in the Walcha area during his crossing of the tablelands in September, 1818. He says, 'at a distance of a mile we saw several fires around which were camped many natives'. A few days later he notes, 'this day we saw a solitary native... Two or three families had been encamped on the spot where we found him'. P.H. Henderson (1857) also implies that the existence of small bands was common on the tablelands when he notes that Aborigines were most commonly observed in small groups, there being no larger scale of social organisation. Both Henderson (1851: II: 108) and Hodgkinson (1845: 222) noted that it was usual for people to travel about in groups of 8 or 10 people.

5.3.2.3 The Clan: this unit is generally held to be the most important political unit in Aboriginal society (e.g. Hiatt, 1968; Morphy, 1977; Berndt, 1959 amongst many others). There has been a long-running debate in Australian anthropology concerning the clan which largely revolves around whether it was both a land-owning and land-using or only a land-owning group (see Stanner, 1965 and Hiatt, 1968 for the clearest enunciation of the two conflicting opinions on this issue). I will consider this matter further below. For the moment it is sufficient to note the following: the clan was composed of all those individuals who could trace their descent back to a common ancestor. Generally-speaking, territorial organisation, or land-ownership, was through patrilineal clans, though ambilineal clans are known in the Western Desert (Peterson, 1976: 16). Totemic clans, associated with social organisation, could be either matrilineal or patrilineal. In the region under consideration, matrilineal totemic clans were found on the tablelands and the western slopes, while the coastal people had patrilineal totemic clans (Radcliffe-Brown, 1929: 408-9).

A four section system was used throughout north-eastern N.S.W. (Radcliffe-Brown, 1931): that is the clan would be divided into four distinctly named units with ego always belonging to one of the two sections to which neither of his parents belonged. Radcliffe-Brown (1931) considered there were significant differences between elements of the system found on the coast and that of the tablelands and western slopes. He noted that there were clear differences between the coastal people and the others, not least of which is the matrilineal and patrilineal totems mentioned above.

Though they both used a matrilineal totemic system and shared section names (1931:233-4), Radcliffe-Brown also thought that there were noteworthy differences in the totemic system of the tableland and western slope people: he defined a Kamilaroi and an Anewan form of these (1931: 233). However, he lists the following groups as possessing this Anewan system: the Anewan (or more correctly, the Nganjaywana - see above), the Yugambal (including the Ngarabul - a dialect group of the Yugambal), the Kwiambul and the Bigambal. The latter two are both dialects of Gamilaraay. It seems, therefore, that these differences noted by Radcliffe-Brown do not follow any simple division between the tablelands and western slopes as geographical or linguistic entities, and that certain western slope groups may have shared distinctive social arrangements with tableland people. It also appears that there is a distinct break between the coast and the tablelands in a number of aspects of social organisation.

Amongst the Bandjalang, clans seem to have been composed of about 100 people (Calley, 1959: 63). Of these, about 30 would be adult males. If the groups listed by Hodgkinson (1845 - see above) for the Dhan-gadi represent clans (cf. Barwick's comment quoted above) then it

appears that this was a common size for clans in coastal areas, as he observed that the size of these groups was of the order of 100 individuals. Apparently, there existed mechanisms by which clans could be divided in two, thereby preventing any one clan becoming too large. Calley (1959: 64) recorded cases of fission of large clans into two separate and smaller clans. Peterson and Long (1986) have observed a similar process in Arnhem Land.

#### 5.3.2.4 The Tribe: controversy surrounds the use of this term in Australian anthropology.

Early anthropologists took its existence as a matter of course. It was taken as the major unit of the body corporate in all hunter-gatherer and simple agricultural economies, hence the frequent, though poorly defined, use of this term in the writings of both professional anthropologists and amateur ethnographers (see above): it was expected to be there and they were determined to find it.

The definition advanced by Radcliffe-Brown (1929; 1930) was commonly accepted as adequately characterising the situation both in Australia and elsewhere. He described the tribe as being a group of people who spoke the same language, occupied a continuous tract of land, within which marriage contracts were formed and who shared a common culture. Thus, the tribe was considered to represent a single homogenous sociopolitical unit, and others (e.g. Tindale, 1974; Birdsell, 1953) accepted it as such. They attempted to find rigid and inviolable boundaries between tribes. This approach was an integral element of Tindale's (1974) classic study.

It did not take long, however, for serious cracks to develop in this construct. Many anthropologists (e.g. Berndt, 1959; Hiatt, 1968; Turner, 1978) noted that there is no single unit in Aboriginal social organisation which meets these criteria. Bi-lingualism, cross-marriage of linguistically-distinct groups, difficulties in finding hard and fast geographical and ideational boundaries between linguistically-distinct groups, and lack of perception in Aboriginal groups of their membership of a homogenous unit which subsumed their clan were just a few of the major problems with the Radcliffe-Brown model. Berndt (1959: 104) went as far as to say that when discussing tribes we are talking purely of a linguistic distinction whose '... significance in regard to organizing group behaviour is relatively small'. I have chosen, therefore, to utilize the term tribe only when referring to the larger linguistic units (see sections 5.2.1 and 5.2.2) and not ascribe any great sociopolitical significance to the term because, as will be discussed below, there is reason to suppose that the classic formulation of Radcliffe-Brown hinders our understanding the complexity of social relations in this region. Thus, there are six and possibly seven tribes (depending on whether Eneewin is viewed as a separate language, as Crowley suggests it should be) in the area under review here.

5.3.2.5 Nations or Confederations: many of the early ethnographers described a level of social organisation which subsumed the speakers of a number of different languages, and these were often called nations or confederations. The Kulin of Victoria (Howitt, 1904; see also Lourandos, 1980a) is perhaps the most famous of these, but Petrie (1904) describes something similar for southeastern Queensland, and it appears that some Bandjalang-speaking people were included in one of these (see also Morwood, 1987). These confederations, which were probably relatively loose-knit and fluid arrangements, were sustained by large-scale gatherings for ceremonies and exchange, and would have had a homogenising effect on various aspects of behaviour if not language. So, for instance, the Waka Waka section system and terminology was being adopted in far northern N.S.W. as a direct result of this contact between Bandjalang speakers and others from southeastern Queensland (Calley, 1959: 132). As it is one of the objectives of this thesis to examine whether such alliances can be discerned in the study area I leave further discussion of this matter for the next chapter.

### 5.3.3 Land Ownership and Land Use

An issue which is of fundamental importance here because of its centrality to the question of group movement in this region involves rights of access to resources in the landscape. This has been one of the longest running debates in Australian anthropology. Once again, Radcliffe-Brown (1929; 1930) provided the initial impetus for arguments which continue through to the present. As interpreted by Hiatt (1964; 1968), Radcliffe-Brown suggested that there was complete concert between land-ownership and use, with the land-owning group having exclusive use of the resources, and control of sites of mythical importance, found within their territory. For Radcliffe-Brown this group was the horde which composed of male members of a patriclan, their wives and unmarried female members.

This claim was challenged most effectively by Hiatt (1964; 1968), who found that this notion of ownership and exclusive use did not seem to apply to the Anbarra of Arnhem Land. Instead, Hiatt found that there were instances where the population in an estate (the clan territory) was composed of people representing as many as 12 clans, and moreover all these people had unrestricted access to the resources on that estate. In one instance he recorded a group of 135 people, including representatives from 6 contiguous estates, and at any one time the majority of members of the group were residing and exploiting the resources of, someone else's estate. He also observed that the composition of these land-using groups was quite fluid, with dispersal and aggregation being a frequent occurrence, and that individuals often changed their place of residence without regard to questions of whose resources they were exploiting.

While there appeared to be no impulse to defend, or any attempt to establish exclusive use of, a piece of land, there was, however, a very strong attachment to the land seen as the birth

place of an individual and his/her ancestors (i.e. the clan estate), and people saw themselves as having a definite role in the custodianship of the important sites that constituted their clan estate. From these observations Hiatt formulated the classic model of the band as the land-using group with free use of resources, and the clan as the land-owning group in terms of mythical sites but having no role in the allocation of access to resources in their estate (see also Maddock, 1974).

Stanner (1965) offered himself as an apologist for Radcliffe-Brown and in classic paper attempted to set forth what *he* thought Radcliffe-Brown had meant. Stanner believed that Hiatt had misrepresented Radcliffe-Brown, having attributed to him conditions that Radcliffe-Brown had never meant to imply. Whether this was the case or not, Stanner offered a model which was composed of four main elements: the band, the clan, the estate and the range. The band was composed of a core group comprising a couple of families of one clan, with peripheral members of other kin or friends. The clan was composed of all those individuals who traced their descent from a common ancestor. The estate was the clan territory, a tract of land that included the mythological sites associated with the clan. It included the traditionally recognised locus, the 'home' or dreaming place which constituted the core of the estate. The range was the total area over which a band could forage. The estate formed part of the range, but the range could also include areas and resources that were shared with other groups. As Stanner conceived it, a band could and did forage in those areas outside the estate which constituted part of the common range. They might even enter peripheral areas of another clan's estate. The estate's core itself, however, was inviolate: no band could forage in this core territory unless they had right by virtue of descent or express permission from the estate's owners. The core members of a band, that is those members who were closely related, tended to concentrate their foraging activities within their own estate and core territory.

Though various elements of Stanner's model have been challenged (e.g. Cane, 1984: 52; Peterson and Long, 1986: 37), recent work elsewhere in Australia tends to confirm that the clan did have some control over access to areas within their control (e.g. Memmott, 1983; Layton, 1983; Williams, 1982; Myers, 1982; Peterson and Long, 1986: 11): Stanner's point that there is some relationship between land-ownership and rights to resources stands. The sense of this is summed up by Peterson and Long (1986: 12) when they observe: '... it would be remarkable if well-developed ideologies of rights in land were to bear no relationship to the activity that takes place on it'.

A number of these studies (e.g. Myers, 1982; Williams, 1982) make the point, however, that ownership of resources should perhaps be seen more as custodianship, with an individual or

group being given authority over an area not to exercise a dictatorial power to deny access but rather to ensure the positive management, and to regulate the use, of a resource. Those wishing to utilise this resource must first approach the custodian to obtain permission to enter an area and appropriate the resource. The custodian then grants permission to exploit the resource, though sometimes there are certain requirements or restrictions (e.g. only entering an area in the company of an initiated person who knows the appropriate ritual for ensuring a safe visit [Biernoff, 1978]). As Williams (1982: 131) has put it in her study of Yolngu territorial behaviour: 'Yolgnu do not conceptualize boundaries in terms of rights to exclusive enjoyment so much as rights to allocate use to others'.

While this may generally be the case, recent research undertaken in western Cape York reveals something slightly different. Here, the work of von Sturmer (1978) and Sutton and Rigsby (1982) has shown that certain individuals can and do use ritual knowledge to extend their control over areas considered to be critical points in the environment. By laying claim to residential and mythological sites, and the requisite knowledge to safely use the area associated with them, individuals accrue considerable power over quite large tracts of land. Von Sturmer (1978: 283) notes: 'people can carve out a niche for themselves within the territory to which they have rights, either by attempting to gain exclusive control over certain residential sites... or by vying for political power with a person who is, or who is structurally destined to become, 'boss man' ...'. He goes on to add: 'Each estate represents a bid for independence' (1978: 445). Estuaries are highly prized because of the abundance of marine resources to be found and their function as nodal points in movement through the landscape (von Sturmer, 1978: 428).

Von Sturmer (1978: 432) goes on to describe the owners of one estate exercising control over a number of contiguous estates on or near the mouth of a river by this process of annexation of dreaming sites. Significantly, each clan tends to have its own dialect, and though the differences between dialects may be minor they serve as important indicators of group affiliation (cf. Dixon, 1980: 42-5). In those instances where a high degree of control of access to a parcel of land and the associated resources is exerted by members of one clan, the resultant social isolation of the clan leads to language divergence that is profound and rapid. One dialect will be spoken over an extended but highly constrained area, and major differences soon emerge between it and its neighbours. The association of social divergence and linguistic variation in this case should not be overlooked.

This process is not unique to western Cape York. Dixon (1980: 45) makes the following observations on causes of linguistic divergence: 'Split tends to occur when local groups live for most of the year in different terrains... The dialect of the local groups in an original tribe may

grow further apart, so that the number of linguistic features they share decreases (in some cases mutual intelligibility may significantly decrease)'. His comments as to the long-term effects of this linguistic and social estrangement are also interesting: 'If there is at the same time an increase in numbers in each local group - leading to more marriages entirely within the group, and so on - then it is likely that the political links between groups will be lost, with each gradually coming to think of itself as a self-contained political unit: a new 'tribe', with its own language'. (Dixon (1976) also found it was quite common in eastern Cape York for seemingly minor variations in dialects to reflect major social divisions between groups living contiguously).

According to von Sturmer (1978), the conditions providing for this to occur, however, are not often met. For a clan to diverge both socially and linguistically to this degree it is necessary not only for a strong individual to gain control but to continue exercising that control for a considerable period, and for an area to be vested in a clan for more than one generation. As there is continual challenging for sites it is difficult to maintain that level of required exclusivity. Moreover, while the opportunity for hereditary inheritance exists (see Sutton and Rigsby, 1982) it does not confer an unassailable right on the inheritor: others can still compete. Consequently, it will only eventuate where a clan has a series of politically-astute individuals capable of retaining control until the situation has gone so far as to offer no possibility of reversal by the same processes that allowed it to happen in the first place. Thus isolation and exclusivity must continue until such time as there can be no grounds for competition: a distinct social unit with its own inalienable rights to certain sites is recognised or the affected area is no longer considered to be part of the greater suite of sites and territory that are normally up for 'grabs'.

I now return to the issue more directly at hand: custodianship of estates by clans and ownership of the resources within their boundaries. Radcliffe-Brown (1929: 401) believed that a horde in northern N.S.W. had exclusive use of its territory, comprising an area of about 100 square miles (256 sq. kms). There existed within this horde territory dangerous places, called *budjeram*, which were extremely hazardous to all except members of the horde, who could safely manipulate them (cf. Biernoff, 1978). It is reasonable to suppose that Radcliffe-Brown's existing opinions could have coloured his observations on this matter, and predisposed him to find something that he believed characterised all Aboriginal social organisation. Radcliffe-Brown's notions of land-ownership overstated the case for exclusivity. However, the following observations suggest the possibility that there was some ownership of resources by clans in this region, with the attendant implications for the type of social and linguistic divergence discussed above.

Calley (1959) observed that among the Bandjalang the clan was patrilineally-organised and was composed of about 100 individuals (1959: 63). Clan members spent most of their life in their own clan estate, though there was some movement by individuals to join bands located in other estates (1959: 65). The boundaries of clan estates were publicised and well-known, and there was some exclusivity of resource use (1959: 64). Generally, clans were only loosely affiliated with each other with clans often raiding each other. Fierce clashes between clans from the Clarence and Richmond valleys were a relatively frequent occurrence. Significantly, Calley (1959) notes that each clan had its own dialect, something noted elsewhere in Australia (Heath, 1978; Threlkeld in Pearson, 1978).

Henderson (1851) and Hodgkinson (1845) observed similar arrangements between groups in the Macleay valley. As has been mentioned above, Hodgkinson recorded six 'tribes' in the lower Macleay valley, each composed of 80 to 100 people. Uninvited entry into the territory of a 'tribe' was regarded as trespass, and led to conflict (1845: 49). Henderson (1851: II: 108) remarked of these 'tribes': 'Each ... has a certain beat, or hunting grounds, frequently of not more than twenty miles in diameter, from which they never move, unless on certain occasions when they visit the territory of a neighbouring tribe for the purpose of a fight or ceremony'.

Hodgkinson (1845: 222) held very similar views in this regard. He went on to make the following interesting observation:

I have remarked that the blacks between Port Macquarie and Moreton Bay are much more circumscribed in the extent of the country roamed over by each tribe than those in the western and southern parts of the colony...the tribes of the northeastern coast districts invariably keep within very narrow limits; the extent of the country appertaining to each of them seldom exceeds one hundred and fifty square miles

MacPherson (1978) somewhat less forcefully, and with a good deal of perception into the interrelationship of Aborigines and the land, noted that the group which lived in the vicinity of Keera Station 'belonged to that neighbourhood or to use their own phrase looked on Keera as their *tourai*, the little domain which belonged to them and *they to it*' (my emphasis). The group expanded from eight to forty individuals once the presence of the white people was more widely advertised.

This situation was repeated throughout northeastern N.S.W. Gardner (1854) noted that each named group (each of whom had their own dialect) on the tablelands and western slopes had a clearly defined territory and that other groups had to seek permission to enter it. Breaches of this etiquette led to hostile actions. There are also numerous examples from a wide range of

sources (Bundock, 1978; Ainsworth, 1922; Simpson, 1844; Jones, 1936; Flick, 1934) that named groups, referred to as 'tribes' in the coastal river valleys, had their own defined territories that were inviolate without the express permission of the recognised owners. A case can be made that these named 'tribes' are in fact clans (as Barwick, 1984 notes), each with their own dialect (see above) and their own territory, an area they considered to be their own and over which other clans did not have *carte blanche*.

To conclude then, I am suggesting that in northern N.S.W. there was clan ownership of land, stricter than seen in other parts of the country if Hodgkinson, an experienced and reliable source, is believed, and that this conferred certain privileges to its owners or custodians in regards to the appropriation of resources within that territory. The significance of this arrangement in relation to group movement and alliance networks is examined in the following chapter.

#### 5.4 ESTIMATES OF PREHISTORIC POPULATIONS IN NORTHEASTERN NEW SOUTH WALES

##### 5.4.1 Introduction

In the preceding sections of this chapter I have considered who spoke what and where it was spoken. In this section I wish to consider the question of how many people lived in northeastern N.S.W. My main reason for reviewing this issue here is that previous estimates of absolute population and densities need serious revision in the light of what we now know of the impact of diseases such as smallpox, tuberculosis and pneumonia on Aboriginal populations in this and other areas. In formulating their estimates, Belshaw (1978) and Bowdler (1981a) made passing mention of disease but did not attempt to assess its effect in significantly decreasing the usefulness of the raw data they drew on. My own estimates attempt to make allowance for this factor and hence result in substantially higher figures than those previously presented. The upshot of these higher estimates is, however, of wider interest to this study because it leads me to draw different conclusions from Bowdler (1981a) in regard to the population density and distribution of people in the New England Tablelands.

In common with many other parts of Australia and in keeping with the fragmentary data available on so many aspects of Aboriginal society in this region in particular, figures on Aboriginal population in northeastern N.S.W. at or just after contact are mixed in their quality. Political reasons as well as uninformed guessing serve to cloud the issue and require us to unravel the good sources from the bad before we even begin to consider how disease may have skewed the data. Fortunately, however, there is one excellent source on this matter: a survey of Aboriginal population and lifestyle commissioned by the Legislative Council of N.S.W. in 1845. This survey lists the responses of Police Magistrates, clergymen,

Commissioners for Crown Lands, other public servants as well as people of good repute in the community (free settlers and emancipists who had made good).

By themselves, each individual's estimates are not necessarily accurate or trustworthy. Comparison of answers does, however, allow us to measure them against a large, consistently-collected body of information. From this it is possible to eliminate those responses which are radically different as well as establish whether there is some overall trend visible. More generally, the survey provides a datum point for the wider corpus of data because it is definitely dated (1845) where others are not, it is based on an attempted census rather than on general estimates and because it contains data collected by people who in some cases had been living in the area since contact, often less than 15 years previously and who had opportunity to note major changes in Aboriginal population over the intervening years.

#### 5.4.2 The North Coast

Apart from the Legislative Council survey which few make reference to, the sources usually relied on are those provided by the Commissioners for Crown Lands (C.C.L.) and a few very general estimates made by interested observers such as Hodgkinson (1845). These estimates and densities are presented in table 5.1. Special note should be made of the date of these when the estimate was published and the years it supposedly refers to; these are not the same thing and are very important when assessing the accuracy of the report and the rate of population decline.

It can be seen that the estimates fluctuate widely. Calley's (1959: 62) estimate should probably be ignored as it is based on his contention that there were 30 clans, each composed of an average of 100 people. He made no attempt to compare it to historical figures. Oakes' estimate is highly suspicious because it is so low. This man, a C.C.L., was known to have participated in retaliatory expeditions against Aborigines, in spite of the responsibilities inherent in his position. He was also a large landholder. It is possible that he significantly underestimated the numbers of Aborigines because this would allow him and other squatters to claim more land while avoiding accusations that they were depriving Aborigines of their traditional hunting grounds. It would also mean that he would not have to explain a major decrease in Aboriginal population at a later date. Therefore, I have chosen to ignore his estimate. It should also be noted that Belshaw's density estimate for the Dhan-gadi uses the total catchment of the Macleay, rather than just its middle and lower reaches. While there may be some justification for this in that coastal people did journey to the tablelands and exploit the resources there, the same amount of area should then be deducted from the calculations used for the tableland people. This he has not done. Therefore, his estimates may seriously underrepresent population density for either the coastal or the tableland

tribe	estimate	density, km <sup>2</sup> /person	source	period referred to	comments
Bandjalang	3,000	12	Calley, 1959	pre-contact	estimate for area between Brisbane River in north and Evans River in south
	7,000	4.8	Belshaw, 1978	1842-44	extrapolation from Simpson, 1844 and Handt, 1842 (cited in Belshaw, 1978) estimates for Moreton Bay and District
	400	0.38	Ainsworth, 1922	1847	Refers only to the Ballina area - density estimated on basis of territory occupied by Arakwal dialect group, approximately 150 sq km
	400	6	Fry, 1842	1841	C.C.L. estimate for the whole Richmond valley. Minimum area attributable to Richmond basin.
Gumbaynggir	350 -1,050	2.5 - 7.68	Fry, 1842	1841	Estimate for Clarence River and environs
	1,200	8.96	McDougall, 1900	unspecified	Estimate for area between Bellinger and Clarence Rivers.
	1,400 - 2,800	3.84 -7.68	McFarlane in Sabine, 1970	unspecified	-
Dhan-gadi	640-800	4.5	Hodgkinson, 1845	mid-1830's	Good source - lived and travelled with the Aborigines. Figure is a composite of his estimate of 80-100 men and women for each dialect group and allowing approximately 400 km <sup>2</sup> for each dialect group
	200	4	Henderson, 1851	early 1840's	Upriver area only
	660-840	13.1 - 16.6	Belshaw, 1978	mid-1830's	Estimate using modified version of Hodgkinson's population figures but applied to total Macleay catchment.
	70 - 80	5.0 -5.7	Rudder, 1887	early 1840's	Kempsey area only - density estimate using area occupied by one dialect group as Rudder talks of the Kempsey 'tribe' in relation to this figure
	200	16	Oakes, 1842	1841	Very poor source
	429	7.46	Massie, 1845	1845	Also provides details of male-female ratio
	300-400	8 -10.7	Massie, 1848	1847	Massie specifically mentions a decline in population from earlier estimate

Table 5.1: Population estimates for coastal areas in northeastern N.S.W.

groups. I have chosen in my estimate to calculate density for the Dhan-gadi on the catchment of the middle and lower reaches only, excluding all tableland areas for the Dhan-gadi.

With the exception of Ainsworth, whose figures are significantly higher than all others but who, it should be noted, is referring to the Richmond estuary alone and not providing a general estimate for the Richmond as a whole, all other estimates provide a figure for population densities of between 3 sq. km and 8 sq. km per person. Five of the ten estimates range between 4 sq. km and 6 sq. km per person which is quite a tight clustering of estimates.

If we look in more detail at the Dhan-gadi, we find that three of the five estimates, ignoring Oakes, provide estimates of overall population size and density that tally very closely. Hodgkinson estimates a population of between 480 and 600 for the six 'tribes' he names; Henderson provides a figure of 200 for the territory of two 'tribes'; and Rudder recalled a population of 70-80 in the Kempsey area alone (one of the territories of Hodgkinson's named groups). It seems therefore, that each of these groups was between 80 and 100 people strong in the mid-1830's. It should be remembered that there are references to two up-river groups that Hodgkinson does not mention, bringing to eight the total number of groups of this size.

Therefore, total population would have been between 640 and 800 people. Both Henderson and Hodgkinson recount that the territory encompassed by one of these 'tribes' (or clans - see 5.2.1 and 5.3.3) was 20 miles in diameter (32 kms), meaning that total area for each group was c. 314 sq miles or c. 770 sq kms. Densities have been calculated by dividing this figure by 80 and 100, giving a population estimate of one person every 7.7 to 9.6 sq kms. Interestingly, the total area included in this density estimate, 6,160 sq kms (770 x 8), is a very close approximation of the catchment of the lower and middle reaches of the river. (The tablelands comprise about 5,000 sq kms of the catchment of the Macleay). The comparability of these figures could be taken as some validation of the accuracy of Hodgkinson's and Henderson's estimates.

The estimates provided by Massie (1848), C.C.L. for the Macleay in the mid 1840's, are significantly lower than those of Hodgkinson *et. al.* There are possible reasons for this. Firstly, we might take Massie to be a poor source of information. However, Massie took his responsibilities in this area seriously and was sympathetic to the plight of Aborigines generally. His reports are some of the most detailed available. An alternative explanation can be found in the dating of these various estimates. His figures describe conditions some 10 to 15 years later than those of Hodgkinson, Henderson and Rudder. Might there have been a marked decrease in population taking place over that time, perhaps set in train by earlier events but not immediately apparent to the early chroniclers? Massie and others certainly thought so and there is evidence to substantiate their suspicions. For instance, figures on

MACLEAY RIVER			
ADULTS			
male 290		female 111	total..401 93.47%
CHILDREN			
male 16		female 12	total.. 28 6.53%
TOTAL			
male 306	71.33%	female 123	28.67% total..429
source: Massie, 1845: 24-5			
PORT MACQUARIE			
ADULTS			
male 210		female 80	total..290 78.38%
CHILDREN			
sex unspecified		80*	total 80 21.62%
TOTAL			
male 250*	67.57%	female 120*	32.43% total..370
*Children evenly divided between two sexes, which probably favours females			source: Grey, 1845: 25

Table 5.2: Sex and age profiles of  
Aboriginal populations in northeastern  
N.S.W. in 1845.

male/female and adult/child ratios show serious imbalances in the sexes and in age profiles of the population. These figures are shown in table 5.2. The fact that this imbalance is recorded by a number of others as well as Massie suggests that it is not simply an aberration of the census method.

William Nairn Grey, Police Magistrate for Port Macquarie, provided an estimate of 370 Aborigines in the general district in 1845 (his male/female and child/adult statistics are included in table 5.2 and serve to corroborate Massie's). In the ten years he had lived in the area the Aboriginal population had diminished by half, from c. 740 to 370, with deaths among adults (he reports there were few children even early in his residency) caused by influenza and other diseases (Grey, 1845: 25). The Rev. John Cross (1845), in his reply to the survey questionnaire, noted that there had been a massive decline in population of Aborigines in the immediate vicinity of Port Macquarie due to disease. In 1828 there were 500 declining to 100 by 1845. A similar pattern emerges from the answers of nearly all respondents to this survey. Ministers in Wollongong, Mudgee, Newcastle, Morpeth, Paterson and the Clarence River all report a massive decline over the period 1835-45, with most populations in 1845 only 25 to 60% of their 1835 level. A reply from Dungog describes half the Aboriginal population dying of influenza in 1835. In Scone, only 80 Aborigines were alive in 1845, down 100 from the 1835 estimate.

It is apparent that a marked decrease occurred in the period 1835-45. This can explain the apparent discrepancy between Massie and the other sources for the Macleay alluded to above. In fact, the difference of 50% between the figures of Massie and Hodgkinson (300-400 and 680-800 respectively) closely approximates the general trend of population decrease documented above for the whole northern part of the state, and elsewhere as well.

But can the figures of Hodgkinson (1845), describing his period of tenure in the mid-1830's, be taken at face value as representing precontact population levels? Butlin (1983) has documented the outbreak of two smallpox epidemics in the colony of N.S.W. in its first 50 years: one not long after first settlement and the other commencing in 1829. Whatever the origin of the disease, it had been reported in the Aboriginal population of Port Macquarie in 1831 and it was also documented in the Macleay valley and further north in the Tweed valley and around Moreton Bay (Butlin, 1983: 27; Campbell, 1985: 336-7). If Butlin is correct in his modelling of the mortality rates of this disease, then post-smallpox populations are at best only 60% of those pertaining before the 1829-31 epidemic. Rudder (1887: 2) is under no misapprehension in this regard. He explicitly notes that his population estimate of the mid-1830's post-dated a major decline in numbers amongst the Kempsey 'tribe'. Thus, a strong case can be made that Hodgkinson's estimate of population for the Macleay, a post-smallpox

figure, would need to be increased to between at least 1,000 and 1,300 for pre-1829 conditions. Butlin (1983: 145) has clearly argued that decimation of the population by this disease would result in major interruptions in birth rates and upset normal sex and age profiles (as noted above in the Macleay and Port Macquarie census figures). This, in tandem with venereal and other diseases, would have a profound effect on Aboriginal population, setting it in a downward spiral from which it would have difficulty recovering.

I have not taken into account the effect of the earlier epidemic as no evidence is available of it in this region. Its traumatic impact on the Aboriginal population of Port Jackson is well documented (Butlin, 1983). If it did reach the north coast we could double again the pre-1829 figures cited above.

#### 5.4.3 The Tablelands

The estimates available for the tablelands are both fewer and of poorer quality than those of the coast. One figure is widely used. McDonald (1842), C.C.L. for the New England Tablelands, thought a population estimate of 500-600 was reasonable for this region. McBryde (1974), Belshaw (1978) and Bowdler (1981a) accepted this estimate at face value in calculating population density. Consequently, they provide density estimates that show an extremely low level of occupation on the tablelands (see table 5.3). Bowdler (1981a) was so concerned at the fact that these figures were so far outside the norm that she sought ways of revising them to bring them into line with estimates from other regions. Thus, she chose to argue that all land above 1,000m.a.s.l. should be excluded from the estimate on the spurious grounds that such areas were not part of the general range of tableland people. Once this vast area was excised from the calculations, reducing by approximately half the area included, she arrived at figures she felt were acceptable when compared to the supposedly normative figures calculated for other regions (see table 5.3). I have already pointed out that there is little justification for what amounts to an arbitrary decision to exclude this parcel of land from the normal range of tableland people. A closer inspection of McDonald's estimate is also warranted, something that Bowdler and others ignored.

McDonald claims to have arrived at his estimate from two sources: his observation of one ceremonial gathering and the reports of his subordinates who actually were in the field and had dealings with the Aborigines. This method of data collection and McDonald's own character raise a number of issues that need to be resolved in accepting this figure. They are:

1. How trustworthy are the data provided by McDonald's men? As he never demonstrated any great drive to get out in the field, he was in no position to independently assess the information they provided. Moreover, McDonald and his men were not always on

the best terms with the local Aboriginal community (see chapter 3). Would they have been able to get close enough to make an accurate estimate?

2. The figures are very unspecific in relation to which groups he was including in the estimate. No reference is made to individual groups, the estimate being a composite figure for the whole of the area under his jurisdiction. This is a common failing of many of the C.C.L.'s, who discharged their responsibilities in a fairly cursory fashion. McDonald, however, explicitly notes in some of his correspondence (1840) the presence of coastal Aborigines from the Clarence and Macleay Rivers on the tablelands for ceremonies. It is not clear whether they have been included in his calculations of population. If so, they will have increased the numbers of people.

3. While based in Armidale, McDonald attempted to enter the squattocracy, sponsoring race meetings, Christmas parties and wooing a daughter of one of the local land owners (in which he proved unsuccessful). I have already raised the possibility that there was a conflict of interest for Oakes, C.C.L. for the Clarence and Macleay as a land holder required to look out for the interests of Aborigines. One point that emerges from an examination of figures for many of these C.C.L.s is that they consistently provide the lowest estimates of Aboriginal population. I would not suggest that all fraudulently underestimated to avoid complications but they may have been subconsciously influenced in the estimates by the fact that they were the men charged with parcelling out land that was technically, under English law, considered to have been unoccupied: the concept of *terra nullius*. McDonald may have seen his allegiances as being with the group to which he aspired and his reports may have been affected by this. Only more detailed historical research could confirm this.

4. Of more immediate concern is the inconsistency in his population estimates over succeeding years. In 1843 he reported that the population in 1842 was static and that no decline had taken place (i.e. it remains 500-600). In 1844 he changed his mind and noted a marked decrease in population during 1843. Then in 1845 he reversed this and reported to the Governor that there was no appreciable decline - in contrast to every other C.C.L. in surrounding districts. He reaffirmed this view in 1846. Thus, over the seven years he was C.C.L. for New England he reported no decrease either prior to or after 1843, yet every other source suggests it was a period of marked population decrease (see 5.4.2). Was there some epidemic in 1843; was it that McDonald simply have no idea; or were there darker reasons for this report? A number of massacres took place in 1842-43, and it is possible that McDonald who was aware of, but did not report, them, made allowance for their impact in his estimate. Other tableland sources were under no misapprehension that population on the tableland had seriously declined by the late 1840's and early 1850's (see Markham, 1851 in Fenell and Grey,

ESTIMATE	DENSITY	SOURCE	PERIOD REFERRED TO	COMMENTS
500-600	58-70	MacDonald, 1842	1841	poor source - see text for discussion
500-600	26-38	Bowdler, 1981	1841	revised density estimate using MacDonald's figures and discounting all land above 1,000masl
400	87	Markham, 1851 in Fennell and Grey, 1974: 72	1850	Markham treated 200 Aborigines that year but estimated there were twice that number. Many were seriously ill with T.B. and influenza
329* (208+)	105.8 167.3	Walker, 1966: 16	1882	*includes 121 people of mixed descent +fullbloods
1,150-1,350	25.8-30.3	see this chapter	pre-smallpox epidemic of 1829-31	uses Butlin's estimates of effect of smallpox for calculation

Table 5.3: Population estimates for the New England Tablelands.

1974: 72; Norton, 1907). Norton commented that by the mid-1850's there were so few left that they did not excite much interest. Markham's figures are particularly useful because he was the chief Government medical officer for the tablelands. In 1851 he treated 200 of the 400 Aborigines he reported for the tablelands. Apart from anything else, we should remark the very high incidence of ill-health this indicates for the population as a whole.

If, however, we accept McDonald's estimate as given, it would appear that in the ten years between McDonald's and Markham's estimates Aboriginal population declined by 20-30%. Given evidence from all around northern N.S.W. (see 5.4.2) it seems likely that it had diminished by perhaps the same amount in the period between initial European settlement and the time of McDonald's estimate. Thus, in 1831 there would have been something of the order of 700-800 people on the tablelands. Using Markham's figures alone and allowing for a decrease to 50% of the 1831 population by 1850 (not implausible in view of the level of disease he reports), we similarly arrive at a figure of c.800 people. If we regard this as representing only 60% of the pre-smallpox population then we arrive at a population of between 1,150 and 1,350 for the tablelands (see table 5.3 for densities).

While the resultant density is still very low when compared to the coast, it does compare favourably with figures from the southern alps for which pre-smallpox figures exist (Flood, 1980: 32). There Flood (1980: 47) estimated densities of between 25 sq kms and 38 sq kms per person for the southern tablelands and Monaro. This could be taken as confirming that the density estimates I provide are at least in keeping with a similar environment zone but without the need to exclude half the tablelands to arrive at this normative figure.

## CHAPTER 6

AN ALTERNATIVE VIEW OF GROUP MOVEMENT IN  
NORTHEASTERN NEW SOUTH WALES

## 6.1 INTRODUCTION

The issue of group movement is one which has attracted considerable interest in Australian and world prehistory ever since the classic studies of hunter-gatherer movement, settlement patterns and resource scheduling undertaken by Steward (1937, 1938) for the Shoshone of the Great Basin and Thomson (1939) for the Wik Monkan of Western Cape York. The latter study, through its publication in one of the major forums of archaeological debate, *Proceedings of the Prehistoric Society*, had a profound effect on British archaeologists in particular, by prompting the realisation that the assumptions of static settlement that had characterised discussion of stone age settlement needed revision. The work of Steward and Thomson made archaeologists aware of two key concepts in hunter-gatherer economy. The first was the notion of the seasonal schedule: that hunter-gatherers had a highly-developed pattern of movement and resource exploitation in relation to their own perceptions of an environment. The second, considered explicitly in Thomson's study, was that this schedule had a major impact on settlement patterns and material culture. People could have radically different settlement arrangements and material technologies depending on the season of the year and the resources being exploited.

This found expression most notably in the research of Clark (1954) on the Star Carr material dating to the Mesolithic in which there was a particular emphasis on determination of season of occupation, a reflection of the growing sophistication in views of hunter-gatherers with the archaeologist recognising that the site could not be assumed to represent the complete year's activities. Archaeologists came to understand that if one was going to study prehistoric economy it was necessary to have an appreciation of the range of a prehistoric group's movement so as to sample all parts of their subsistence strategies and seasonal schedule. Establishing this range was, of course, not a simple task. There were two main approaches: site catchment analysis and ethnographic modelling.

The work of Vita-Finzi and Higgs (1970), and their students, in the area of site catchment analysis was in part a development from this greater comprehension of how prehistoric people operated in their environment. The approach involved establishing the resources available in the catchment of a site and over what period of the year these would be available. This was done in a number of ways, but in the initial studies soil type, and its imputed productivity, constituted the usual means. Following this, models of what suite of sites might be seen as representing a

complete seasonal round of a group of prehistoric people at any given time would be constructed (e.g. Davidson, 1983). Site catchment was not directly concerned with movement so much as establishing the range over which a group may have operated. But as the impetus for this interest in range resulted from the growing awareness of the importance of movement in hunter-gatherer economics. There was also a more tangible relationship between site catchment analysis and ethnographic studies of movement.

The areal extent of the territory which a group could exploit from a given site had to be calculated: that is, there had to be a base assumption of what the site's catchment would be. The figure normally applied in the early work was one of 10km radius or approximately two hours walk each way, derived from the work of Lee (1968) with the !Kung. Lee recorded that this was the average distance that a person or group of persons would go each day in exploiting the area surrounding any given site. Once this threshold was crossed (i.e. once it became mandatory to travel further than this to secure resources) camp would be shifted to reduce the cost of travelling. Bailey and Davidson (1983) pointed out the weakness of this straightline model in undulating or mountainous country. They refined the approach, offering a formula for computing the range in such areas where the distance covered in a given period of time is a function of the degree of relief: that is, the greater the amount of slope the less straightline distance that would be covered. Ellipsoid or oddly-shaped site catchments reflecting real distance rather than straightline distance are generated by this method. The site catchment approach avoided, to some extent, a heavy and perhaps undue reliance on ethnographic studies from Australia, Africa and America for discussion of sites in Europe and Asia Minor, but it should be emphasised that one of its basic tenets was drawn from the study of short-term movement, albeit from only one group of African hunter-gatherers. Other studies have tended to confirm this observation as a general rule for some types of hunter-gatherers (e.g. Gould, 1980 and see discussion below).

In America there was some attempt to apply site catchment analysis (e.g. Flannery, 1976). However, there was an interest in using ethnographic observations of group movement in an area to interpret the archaeological data, due in no small part to the fact that direct ethnographic data was available. Thomas' (1973) study of sites in the Great Basin stands as a classic example of this approach: he attempted to test Steward's model, based purely on reconstructions stemming from the reminiscences of informants who had given up a nomadic existence some 40-50 years prior to Steward's field work, using the archaeological record of the region.

Interest in group movement in Australian prehistory has a relatively shorter history and has been dominated by the ethnographic approach. During the 1950's and early 1960's, the work of people such as McCarthy, Tindale and Mulvaney was principally concerned with defining pan-Australian sequences for stone artefact assemblages and had little interest in questions relating to

a single group such as seasonality and group movement. With the advent of regional studies, pioneered by McBryde (1966; 1974) in the mid-1960's, in which there was some scope for review of relevant ethnohistorical sources, changes occurred in this regard. However, McBryde (1966) broached the issue of group movement in her Ph.D. thesis only in the most cursory fashion, and made little attempt to marry it to her archaeological evidence. Rather she used the historical sources merely to provide a brief introduction to the prehistoric people of the region. (In her later papers on aspects of the region's prehistory the issue came to attract far more attention from her, e.g. 1976).

Allen's (1971) regional study of western N.S.W. marked a major development in interest in this and related issues. He undertook a major review of all the relevant historical sources. From this he advanced a model of group movement in which the Darling River and lacustrine resources served as a focus of activity for the majority of the year, with people dividing into smaller groups and dispersing into the hinterland as conditions allowed. He then argued that this historically derived model could be accepted as describing settlement patterns in prehistoric times and indeed may have had a considerable antiquity, extending back as far as the terminal Pleistocene. In this sense, Allen was using the ethnographic picture to flesh out the archaeological data: the ethnohistorical model was a picture that could be dropped over the archaeological evidence to give a more rounded view of life in the past, providing information about areas in which the archaeological record was deficient. This was an approach common to a number of Ph.D. theses of this period (e.g. Flood, 1973; Jones, 1971), with the archaeological and ethnohistorical data being seen as complementary. In fairness to Jones, it should be noted that he did examine the question of why the absence of certain elements present in the archaeological record from ethnohistorical data, in particular the issue of why the Tasmanians stopped eating fish.

Following a similar line of argument, Lourandos (1970; 1977) used ethnographically-derived data on group movement in eastern Tasmania to establish that two archaeological sites he was analysing (one in the hinterland and the other on the coast) could be seen as seasonally complementary to one another. He then went on to compare the stone artefact assemblages from each. The thrust of his argument was that differences observed in these were the result of variation in the resources being exploited on a seasonal basis rather than reflecting any cultural differentiation between coast and hinterland. What Lourandos, and others, were doing was to hold the ethnographic model as a constant in attempting to explain the archaeological record. In this instance they attempted to use ethnographic data on movement to define the economic range of a group, and then compared prehistoric archaeological sites which fell within it, never minding the fact that the historical range may have been significantly different to that which pertained prior to that time.

Two lines of thought have come to dominate the use of ethnographic data on group movement in Australian prehistory. Firstly, there has been a growing realisation that group movement and related alliance networks have important ramifications in the study of prehistoric systems of group interaction and the study of the material manifestations of these. In Australia, the so-called intensification debate, in which the emergence of these systems of interaction is seen to be a major development occurring during the late Holocene and being related to increased competition between individuals and groups for position in a more hierarchically-oriented society (see Lourandos, 1980a, 1983, 1985 as the primary statements of this argument) has aroused interest in such issues. So, for instance, Lourandos (1980a) has reviewed the detailed records of George Augustus Robinson and developed a model of movement and interaction embracing both individual and group traffic over large distances in southwestern Victoria. He has related this to the development of large facilities, including the Toolondo eel traps as well as extensive canal systems for fishing in swamps, arguing that it was this movement and interaction, and the large-scale gatherings associated with it, which generated the need for these facilities in the first place.

Morwood (1986; 1987) has also looked at the issue of group movement in considering developments in southeast Queensland over the last 4,000 years but takes a different position on its cause and effect. He argues that the pattern of movement seen in this region, with large-scale movements of people from one naturally-occurring superabundant resource to another (in this case from Bunya pine forests to the rich waters of Moreton Bay) was a means of redistributing population in relation to resources and provided the means of sustaining a higher population in this region than would have been possible without such arrangements. These two positions (i.e. Lourandos' and Morwood's) represent the poles of thinking on this matter: the former seeing movement in relation to social imperatives while the latter views it as a response to environmental circumstances.

Both have also sought to use the data on movement to examine group alliances. In Europe, there has been a strong trend for investigation of this subject and people such as Gamble (1981; 1986) have considered the relationship between movement and distribution of distinctive art styles, examining in particular the role of art as a communications medium where people may have been travelling vast distances. Morwood, in particular, has considered the effect of such a nexus on elements of the archaeological record in parts of Australia (notably southeast Queensland), with art styles being his main interest. McBryde (1978; 1986) has also followed this line of enquiry. Her research has been into the relationship between distribution of ground-edge axes from known sources through western Victoria and southwestern N.S.W. and the movement of people and alliance networks described in the early ethnographic studies of Victoria and southwestern N.S.W. More recently, she has started to investigate similar questions for other trade items in central Australia (McBryde, personal communication).

While arguments along these lines are both attractive and popular, they suffer from one major weakness. As noted above, it is obvious all such arguments rely to a great extent on a continuity between the prehistoric and historic period. While perhaps not as gross as Allen's models in which he postulated a direct link between the behaviour of historically-documented Aborigines and those of the Pleistocene, they tend to suppose that systems seen in the historical period, with all the problems that contact caused in social organisation, remained constant over the past three to four thousand years. There is obviously a need to test the validity of such models. Are people justified in making such an assumption?

The second area in which consideration of group movement has been raised is in relation to the issue of settlement patterns. Poiner's (1970) study of the south coast can perhaps be seen as a landmark in this respect as it represents the first explicit attempt to use ethnohistorical and environmental data on group movement to test archaeologically-derived models of settlement and subsistence strategies. She argued that the evidence pointed to considerable movement of people from the hinterland to the coast, with seasonal aggregations and dispersal of groups over the course of the year. She also noted that there was variability in the availability of resources along the coast through the course of the year. From this she concluded that Lampert's (1966) model of year-round dependency on coastal aquatic resources overly-simplified and overstated the role coastal resources played in the economy of these people. Just as importantly she offered a series of expectations as to what the archaeological record should look like based on her model. At the time little work had been done in the hinterland and so it was not possible to adequately test Poiner's model, a situation that remains today, but even so there was enough to suggest that in some respects, at least, the record could be explained by reference to the ethnographically-derived model.

Lilley (1982; 1984) proposed that for sub-coastal southeast Queensland there was a pulse of movement with people moving into and out of parts of the region in relation to availability of water and other resources. He then compared this with the distribution and form of a number of open sites he had recorded in the study area and argued that the patterns of discard were consistent with expectations derived from the ethnographic and environmental model. Unfortunately, Lilley did not seriously canvas the causes of variation in discard of stone artefacts (e.g. rationing behaviour in response to a limited resource). In spite of their shortcomings, these two studies have attempted to link models of movement to settlement patterns in an explicit fashion, and then offer a series of expectations as to what the archaeological record should contain if the model of movement and settlement is to hold. The model is therefore amenable to testing, something wanting in some other approaches discussed above.

Binford (1977; 1978; 1980) is obviously the best-known proponent of the use of middle-range theory to study movement and settlement in the archaeological record. Binford (1980) has argued that there are two extremes of hunter-gatherers: tethered nomads (or collectors) and foragers. It should be noted that Binford has accepted that few groups fall neatly into one category or the other, and that rather there is a continuum running between these two poles, but they serve as neat categories. The first type of settlement strategy, exemplified by the Nunamiut, is that of logistically-organised patterns of movement: hunter-gatherers establish a base camp from which they then send out specialised groups to collect essential resources, stockpile them, and to bring them to the base camp as required. Groups practising a predominantly logistically-organised pattern of settlement tend to have relatively long-term base camps which they return to year after year. They also generate many activity-specific sites as well, most of which constitute a single, short-term event in the subsistence strategy. This pattern of movement and settlement seems to be most common in coarse-grained environments where critical resources are spatially as well as temporally discrete.

At the other end of the continuum, there are foragers who move frequently, shifting to new areas where a range of resources are available at any one time. This leads to a pattern of numerous redundant sites in which a wide range of activities were undertaken, and few activity-specific sites. Binford calls this strategy 'mapping on' to resources, moving the group to a point from which all critical resources can be exploited with relatively low costs in resource procurement as measured in time spent travelling to the resource. Once a set of resources in a locality is depleted to the point where costs of procurement start to rise because of the increased travel time, camp is shifted to a new location where such costs are lower. Such a strategy is most likely to be found in fine-grained environments where resources are spatially and temporally ubiquitous. Other activities, such as the procurement of stone, are 'embedded' within the settlement strategy: special trips are not made to obtain particular resources, but are gathered in the course of movement associated with mapping on.

Binford has tendered a detailed series of propositions as to what the archaeological consequences of such behaviour should be. Although it is by no means a straightforward or simple task to verify these, not least because most hunter-gatherers employed a mixture of both logistically-organised and foraging strategies, they constitute an explicit statement of why the archaeological record has the form it does. They have also provided a particularisation of the ethnographies which allows interpretation of the archaeological record into new structures whilst still grounded in modern reality.

What emerges from this review, and the reason for the different angle taken in the studies reviewed above, is two levels of group movement. The first concerns movement related directly to

the subsistence and settlement strategy. The second, of a larger scale (at least in the distances covered), but which may be closely tied to the first, involves movement related to the ceremonial round. This may involve people undertaking a single special journey to a particular place, or, by careful scheduling, people may be able to arrive at the desired location in the course of their seasonal round. Such arrangements will depend on where the gathering is taking place (e.g. within one's own normal range or in a neighbour's), and what conditions pertain to movement through, and exploitation of resources within, a neighbouring group's territory (see previous chapter).

Obviously, there is a need to consider both levels of movement: as noted above, one may be integral to the other. Moreover, to divorce them and concentrate on either one or other would result in an incomplete image of the full economic cycle. In this chapter, therefore, I am interested in movement both in terms of its implications for regional alliance networks and as it relates to settlement patterns. It is, however, one thing to offer a model of movement; it is another to test the hypothesis. Each type of movement can be tested, but in very different ways.

Movement associated with ceremonial activity at a regional level can be seen in the archaeological record through material traits such as distribution of stone axes (e.g. McBryde, 1978) and the dissemination of particular stylistic elements in rock art, as exchange of such items was a common component of the ceremonial gatherings. It may be possible, in certain circumstances, to use lithic sourcing studies to study smaller-scale movement related to the more immediate subsistence needs of a group. However, because what we are interested in when considering this issue is not movement *per se*, but rather the broader issue of settlement pattern of which this movement is an integral part, it is more sensible to look for markers particularly appropriate to this. As Binford, Lilley and Poiner have indicated, both intra-site patterning, and site distribution and form at a regional level, are useful in this respect. It should be borne in mind that the structure of hunter-gatherer settlement is a consequence of the interaction of the environment and available technology, as well as decisions about what resources to exploit, and when, and in what numbers, people will exploit them (i.e. dispersal and aggregation of people across the landscape). With possible exception of environment, none of these can be taken as an independent or constant in the equation.

Therefore, to develop a comprehensive model of settlement from which we can generate predictions we can test with the archaeological record, we must adopt a holistic approach to the question in which all these factors are taken into account. Consequently, the model of movement I present here is allied with ethnohistorical data relevant to these other issues presented in the following chapter from which I develop a model of subsistence and settlement. In the final section

of chapter 7 I offer a series predictions of what the archaeological record should look like if the model I have presented is to be sustained.

## 6.2 GROUP MOVEMENT IN NORTHERN NEW SOUTH WALES

As will become clear in the remainder of this chapter, there was considerable movement between coast and sub-coastal zone, the sub-coastal zone and the tablelands, and the tablelands and the western slopes by the prehistoric people who inhabited this region. In what follows I chronicle references to movement in relation to each of these units in terms of movement into and out of that unit, and, where possible, establish from which unit the people in transit derive. This is essential if we are to comprehend the ebb and flow of particular groups across the landscape. For instance, does a reference to movement from the coast to the sub-coastal zone refer to a group of sub-coastal people returning to the interior or is it a pointer to coastal people retreating to this area. The scale of movement being described is also important: is it a single, small group of perhaps five or six individuals or does it represent general movement by a large segment of the population? Before proceeding to the data, however, a synopsis of my model seems appropriate as this will provide context for the critical examination of the evidence which supports and contradicts it.

I make no apologies for the highly speculative model offered in this chapter. Firstly, the data is variable in the quality of the observations, confusing because of outright contradictions, and rather limited in quantity. My attempts to resolve these inconsistencies and limitations has not resulted in the removal of all anomalies. More importantly, the primary purpose of the model is not to stand as incontrovertible fact so much as to generate a series of testable propositions. While more data with fewer conflicting statements would simplify the task of generating a model, it would still leave unattended the process of testing it. Thus, the worth of any model is not to be judged by the internal consistency of the data which are its basis: its value as an explanatory medium is determined by the degree of fit between the consequential propositions deriving from it and the independent data with which they are compared.

### 6.2.1 The Model

The model is presented most easily by dividing it into two sections dealing with movement in each of two major sub-regional units: the first section outlining movement between coast and sub-coastal zones, and from the sub-coastal zone to the tablelands; the second movement by tableland and western slope groups. Detailed review of evidence follows the summaries below.

#### 6.2.1.1 Movement by coastal and sub-coastal groups

Amongst coastal groups proper there was no movement from the coast back into the sub-coastal river valleys and foothills. These people were semi-sedentary and lived close to the coast the whole year round. Movement associated with the subsistence round involved travelling only short

distances away from the littoral. There were instances of long distance travel associated with ceremonial gatherings. However, such movement was generally parallel to the coast (i.e. north-south along the coast rather than east-west from coast to hinterland).

Sub-coastal groups journeyed to the coast, but only in small numbers: there was not the large-scale migration of people posited by McBryde. The data suggests that this took place throughout the year and could have been for both ritual and secular reasons. Groups also journeyed through the 'Falls' country throughout the year. There are also reports of movement in a north-south direction along the sub-coastal strip from river valley to valley, and from sub-coastal zone to the tablelands which appears to have been associated with ceremonial gatherings. These ranged from clan-size gatherings through to inter-tribal meetings. Movement onto the tablelands took place during late spring, summer and early autumn.

#### 6.2.1.2 Movement by tableland and western slope groups

On the tablelands small groups of people were on the move throughout the year. There are no indications that movement associated with subsistence activities took people in any particular direction. Abundant evidence exists to indicate that the tablelands were not abandoned over the winter months. There are also references to travel in a north-south direction on the tablelands for ceremonial activity. Tableland groups are recorded as travelling onto the western slopes in the summer and early autumn months. It should be noted that in my model there was little or no social intercourse between the sub-coastal and tableland people.

Western slope people also appear to have shifted fairly frequently, moving around in small groups. There are references to movement up onto the lower tablelands in the autumn months. People travelled considerable distances to ceremonial gatherings held at various locations on the western slopes during the summer months. It appears that some also travelled onto the tablelands in the winter months for this same purpose.

### 6.3 EVIDENCE FOR THE MODEL

Data supporting the model outlined above can be divided into three categories:

1. references to seasonality of occupation of different environmental zones;
2. actual references to movement both within and across group boundaries;
3. data pertaining to inter-group relations.

#### 6.3.1 Seasonality of Occupation

##### 6.3.1.1 The Coast

It can be seen by comparing the model I have outlined above with that of Coleman (1978; 1982) that by and large I concur with her assessment of the situation. One of the points Coleman argues

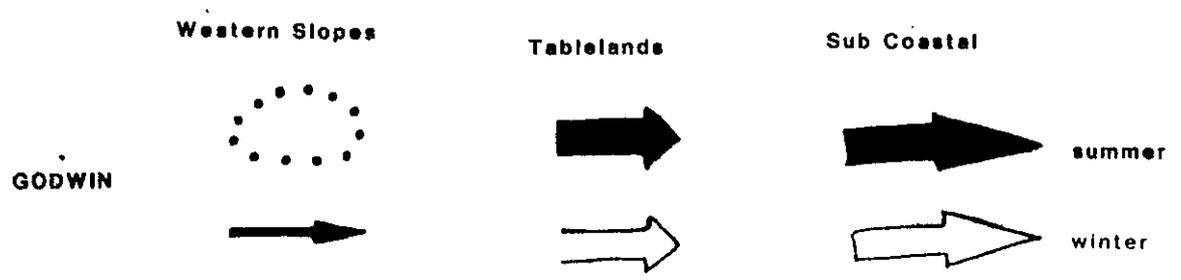
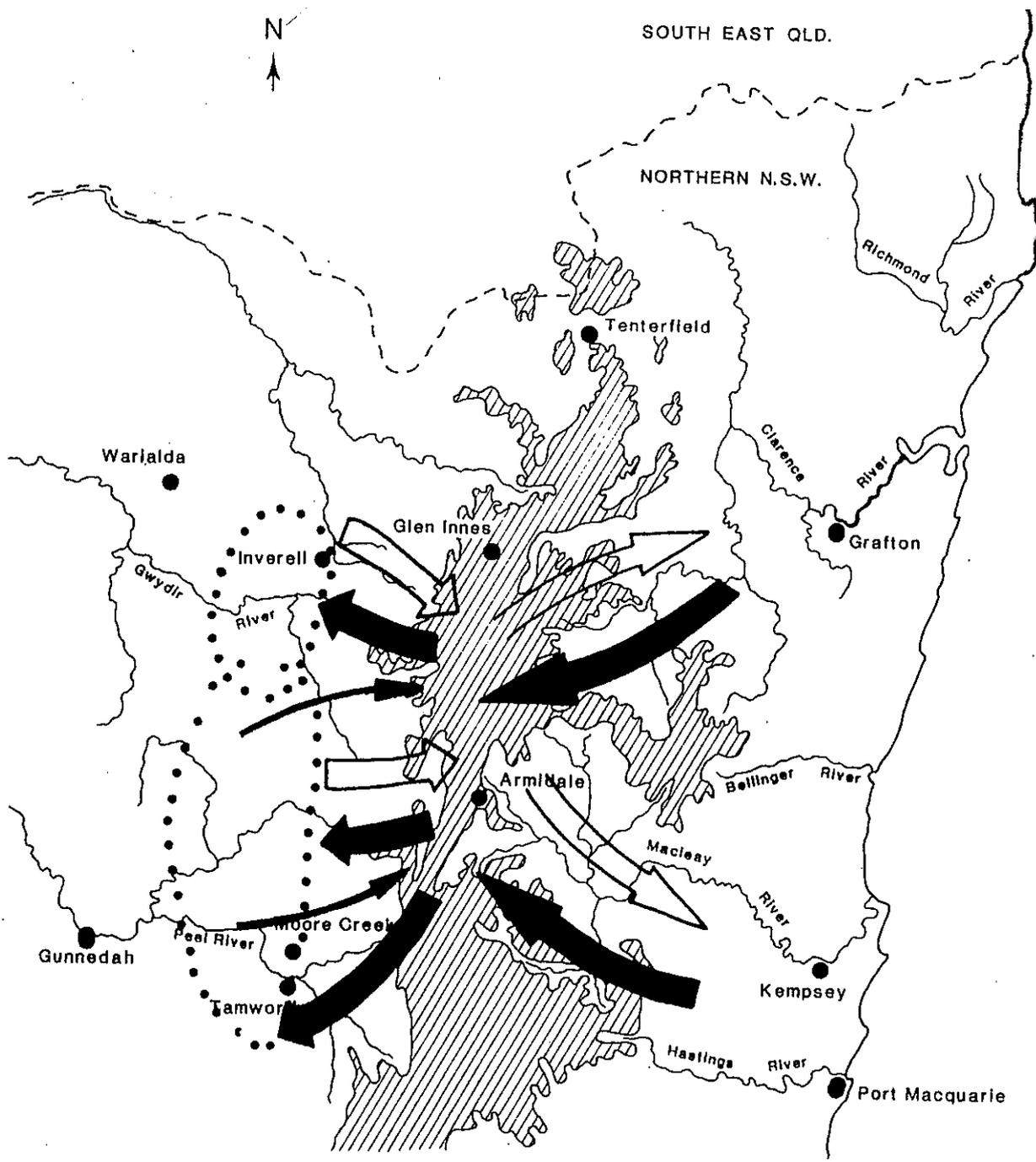


Figure 6.1: Model of seasonal movement by Aborigines from the coastal hinterland, tablelands and western slopes in northeastern N.S.W. discussed in chapter 6 (hatched area: tablelands).

that at no time of the year was the coastal zone abandoned, *contra* McBryde. She attempts to substantiate this by documenting references to villages and examining the timing of the various fish runs which took place along the coast.

Sources such as Flinders (McBryde, 1978a:9), Peter Cunningham (1827), Parry (in Coleman, 1982), Rous (in Lang, 1847) and Lang (1847) record the presence of numerous substantial structures on many of the estuaries along the coast. Coleman (1982) has suggested that, given the sturdiness and care with which the structures were constructed, these could be viewed as 'villages' in which people lived for a number of months per year. She also notes that the above sightings cover virtually every month of the year (Coleman, 1982:fig 8), indicative of the coastal strip being utilised in this way throughout the year. All these references are from the journals of trained observers, if not professional anthropologists, and taken at face value. While circumstantial, the argument against such a model is flimsy, with the evidence open to re-interpretation or deriving from suspect sources (see chapter 4, section 4.1.1.3).

It will be remembered that McBryde attached considerable significance to references which cited that people moved to the coast during the fishing season, an activity McBryde placed in the summer months (see chapter 4, section 4.1.1.1). However, as Pierce (1971) has noted and Coleman (1982: fig. 8) has elegantly demonstrated, fishing was at least as much a winter occupation as a summer one. Indeed, the major migratory runs occurred during the winter months. This, taken together with references to winter occupation, weights the scales firmly in favour of both winter and summer occupation of the coast.

#### 6.3.1.2 The Sub-coastal Zone

No one has seriously suggested that this area was not occupied throughout the year. It could, however, be taken as a corollary of McBryde's (1976) model that this area was depopulated during the summer months when people moved to the coast. The observations of Hodgkinson (1845), who actually lived and travelled with Aborigines of the north coast in the early years of contact, and Henderson (1851), an early settler on the Macleay are sufficient to dispel any such suggestion. Both sources are of high quality and the sheer number of references to their contact with Aborigines throughout the year makes it clear that Aborigines lived in this area at all times. It can be taken that the area was not abandoned for any considerable time during the year.

#### 6.3.1.3 The Falls Country

Unlike the sub-coastal zone, the narrow, winding valleys of the gorge country which constitutes the eastern escarpment of the tablelands was thought to be a no-man's land only sparsely occupied for short periods of the year (McBryde, 1974; I.C Campbell, 1969; Blomfield, 1981). Indeed, Blomfield (1981) went as far as to suggest that it was virtually uninhabited by Aborigines until

intensive European settlement of the tablelands and coastal strip forced them into this 'marginal' area.

It is hard to see, after examining the historical sources, how such views came to be canvassed in the first place and why they have been unchallenged for so long. For instance, during his expedition of 1818, John Oxley traversed the tablelands from west to east, and journeyed through the Falls country to the coast in mid-September. In the course of his travels along the edges of, and through, the gorges he observed, on a number of occasions, camps and campfires, which as he put it, 'announced a country well-inhabited' (1820: 308). On one occasion he met a band of 10 men in the upper Hastings (1820:310), suggesting a band of perhaps 30 or 40 men, women and children. He also recorded a cluster of seven huts on the slopes of Mount Seaview (1820:309), which unfortunately he does not describe in any detail. These can not have been tableland people who had vacated to the gorges for the winter (cf. I.C Campbell, 1969; McBryde, 1974) because Oxley had reported encountering bands of Aborigines on the tablelands immediately prior to entering the gorges. Further, given that Oxley penetrated the area some 15 years prior to any permanent settlement in the region, the Aboriginal presence can not be attributed to pressure from European colonisation of the tablelands or coastal strip.

John Henderson (1851:vol I:271) also spotted numerous campfires during his descent of the 'Big Hill' on the track from Wollomombi, 40 kms east of Armidale, to the lower middle reaches of the Macleay. His journey was undertaken in June, 1844, or the start of winter. In the following autumn he reported 200 Aborigines in the upper reaches of the river (1851:vol II:8). (The reference does not make it clear whether this is a composite figure based on the total number of Aborigines living in small bands or a single large group).

Taken as a whole these reports of considerable numbers of people in the gorges during the autumn, winter and spring months, along with comments such as that of Merewether (1851), C.C.L. for the Macleay, who noted that numbers moved through the gorges in the summer months, indicate that the Falls country was occupied throughout the year by a significant population. It can not be viewed simply as the winter refuge of the tableland people, or a wilderness only occupied after European colonisation. The general quality of the sources is high, and there is no reason to doubt the veracity of their observations on this point. Finally, there is no evidence to the contrary.

#### 6.3.1.4 The Tablelands

Various sources have suggested the tablelands were sparsely occupied during winter, with most people moving to the gorges or the western slopes (Bowdler, 1981a: 107; Walker, 1962; McBryde, 1974). Reading the historical references leads me to different conclusions.

As noted in the previous section, Oxley traversed the New England Tablelands in early and mid-September, 1818 (Oxley, 1820). He describes three separate encounters with Aboriginal groups in the vicinity of Walcha. On the first occasion he and his men fell in with a party of men, women and children. The camp of these people was visited by a contingent of Oxley's party later in the day. Ten Aboriginal men were present, the women and children having been sent away at the approach of the white men. All up this group must have numbered between 20 and 40 individuals. A similarly large group was observed at the distance of a mile a day later (1820:291). A few days later, a third group consisting of two or three families was seen (1820:302). These references can be taken as nothing less than indicating a considerable Aboriginal presence on the tablelands during a part of the year that is still climatically rigorous (i.e. late autumn-early spring, when frosts and sub-zero temperatures are still commonplace).

Later sources confirm this occupation during the autumn, winter and spring months. For instance, the Irby brothers (1908) kept a detailed diary for their property between Deepwater and Tenterfield during the early 1840's in which there are numerous references to Aborigines. Over the course of the year 1841 they made note of Aborigines on their property during the months August through December, including a group of 100 seen in late August-early September. In June of the same year they had recorded a gathering of two 'tribes' near Bluff Rock. While it is unclear what they meant by 'tribe', this must be a reference to at least 50 or 60 Aborigines, and possibly many more. Eldershaw (1851: 62) also described encountering an encampment in the northwestern tablelands: '...at the close of autumn of '41...The tracks, campfires, and numerous gunyahs, indicated clearly the recent presence of a tribe of natives numbering, we surmised, at least two hundred'. While there may have been some exaggeration, we can not dismiss this account as referring to less than 100 people camped on the tablelands at the start of winter. John Everett, of Ollera Station near Guyra, wrote to his sister Anne on 7 June, 1840, telling her of a group of Aborigines who had spent some time on the station during May and June, and who continued to camp on the tablelands well into winter.

McDonald (1840), C.C.L. for New England, recorded in correspondence to the Governor for that year that Aborigines were present on the tablelands in March, April, June and September. A party of Europeans travelling north on the tablelands in March, 1840, encountered a group of 20 Aborigines at Ben Lomond, one of the highest places on the plateau, in late March (Dawson, 1929).

It is true that some of these sources could be viewed as tainted (e.g. the Irby's, who were well-known for their aggressive attitude to Aborigines, and MacDonald as well). However, the consistency and weight of these references to autumn, winter and spring occupation can not be denied. The observations of Everett, an unimpeachable source in view of his excellent relations

with the Aborigines, corroborates those of the Irbys and MacDonald (see also section 6.3.2.2). Moreover, the sources of references to movement off the tablelands at this time cited by Campbell, I.C (1969) and McBryde (1974; 1976) are not above reproach and should be viewed either with some suspicion as coming from unsound sources (e.g. Archie Marlow - see chapter 3), or perhaps were observations of sub-coastal groups moving back into the gorges and river valleys (see also section 6.3.2.2.2).

#### 6.3.1.5 The Northwestern Slopes

There is little to say about this portion of the region other than to say that all agree that it was occupied throughout the year. Allen (1968), Pearson (1973) and McBryde (1976) review the data and come to this conclusion; I have no reason to disagree with their reading of the sources on this point. There is no evidence that the northwestern slopes were abandoned at any time of the year, though, as will become clear in subsequent sections of this chapter, some people from this area did travel around the western slopes and onto the tablelands at various times (cf. McBryde, 1976, who suggests they were sedentary).

### 6.3.2 References to Movement

In what follows, I have not separated references to movement into those pertaining to coastal and sun-coastal areas. I have, however, considered them on a river valley by river valley basis. The reason for doing this is because references to movement either deal with movement along a valley or from valley to valley. I then turn to the tableland and the northwestern slopes.

#### 6.3.2.1 The Coastal River Valleys

##### 6.3.2.1.1 *The Richmond Valley*

There are a number of references to movement by people within this valley. Moehead (1922), Troy (in Pierce, 1971) and Flick (1934) all describe small-scale movement within the boundaries of hinterland groups territories while people were in search of food. Ainsworth (1922) describes small-scale movement for this reason by the people living on the mouth of the Richmond. He states that bands from this group, the Arakwal, ranged from the coast inland as far as the edge of the 'Big Scrub', a massive expanse of rainforest, since destroyed, whose eastern boundary was only a few kilometres behind the coast.

As far as large-scale movement from coast to hinterland or vice-versa, the evidence is somewhat equivocal. Bundock (in Pierce, 1971: 45) specifically denies there was any movement by inland groups to the coast. In apparent contradiction to this, Bray (1923) stated that people from the Lismore area travelled to Ballina in winter for a short time to partake of the mullet runs, and as this was a time of gathering for the Ballina people (see Ainsworth, 1922: 27) it is possible that these Lismore people also engaged in the ceremonies. Before passing on, however, a number of

points must be made about Bray's claim. Firstly, it is not clear from his statement what numbers of people were involved: a few individuals, a band of 20 or 30, or a hundred or more. Secondly, Bray's reference is to winter movement, which hardly supports McBryde's model. Finally, Bundock was an early settler in the area, and the quality of her observations is extremely high. Bundock took a keen interest in Aboriginal culture. She was well-known for her interest in these people and her accounts were based on first-hand interviews with Aborigines of the upper Richmond valley (McBryde, 1978a: 200). While I have no strong grounds on which to dismiss Bray's evidence, neither can Bundock be ignored. The point of contention between them may, however, be more apparent than real as each could be describing something somewhat different to the other. Bundock may well be highlighting that there was no free and general movement between the territories of the various clans but it is possible that small groups of Aborigines from the sub-coastal zone occasionally did travel to the coast if they were invited (see below).

Calley (1959: 63) notes that some of his informants advised him that people travelled from the Richmond to the Clarence valley and up onto the tablelands. The purpose of these trips is not clear but Calley hints they were raiding parties. They also made journeys in to southeast Queensland to attend ceremonies, and Calley believed that some elements of Bandjalang social organisation were adopted from the people of this region as a result of such visits. Bundock (1978: 265) does not refer to this latter point but she does confirm that people from the Richmond travelled north to attend the Bunya feasts held to the north of Brisbane at two or three year intervals:

About 200 miles to the north of us lies the peculiar strip country where the Bunya pines grow, and every third year or so the pines bear a profusion of cones...On the years when these trees bore word was passed from tribe to tribe and there was a sort of 'truce of God' understood, for the blacks then went through each other's territories unharmed and all met together in peace and feasted on the plentiful provisions.

#### 6.3.2.1.2 *The Clarence Valley*

I have already critically reviewed the two references to group movement in the Clarence valley which McBryde uses to bolster her argument that there was migration from coast to sub-coastal zone in winter and back to the coast in summer (see chapter 4, section 4.1.1.3) and I will not deal with them further here. The evidence of McFarlane (in Ryan, 1964: 156) stands in stark contrast to these other sources. McFarlane states:

During the winter months blacks from the neighbourhood of Grafton made pilgrimages to the coastline between Little River and Woolgoolga for a change and holiday keeping. The tours would not be undertaken by the full tribe, but from two to half a dozen in company, who permitted by verbal passport to trespass on the hunting grounds of the intervening tribes. The dietary scale from pademelon and opossum to shellfish and marine delicacies left the imprint on the rejuvenated visitor to the ocean beach.

He goes on to add:

Up-river blacks occasionally made winter month visits to the coast in the vicinity of Red Rock where they spent their time quietly until spring denoted that return to their old haunts was desirable.

As a source McFarlane is certainly as creditable as either of those McBryde quotes: he was a long-time resident of the region who published his reminiscences in the early 1920's. Five points emerge from his account:

1. A division is drawn between coastal and sub-coastal groups.
2. There is no suggestion that coastal groups moved inland at any time of the year.
3. Movement took place in the winter months.
4. There is no suggestion that sub-coastal people could 'pop across' to the coast as the whim took them, but rather they had to obtain permission from appropriate groups.
5. There is a clear implication that coastal and sub-coastal groups had widely different diets, the former concentrating on marine foods while the latter were reliant on terrestrial resources for the greater part of the year.

There is some confirmation of McFarlane in North's (1964: 20) noting that there was a strong oral tradition that coastal Aborigines in the Coffs Harbour-Woolgoolga area used to allow inland people into their territory for a change of diet. Sabine (1970) also was given oral testimony to this effect in relation to Aborigines in the Nymboida area.

The comments reported by Dawson (1935) require further consideration (see chapter 4, sections 4.1.1.2 and 4.1.1.3). I have noted that the Aborigine who was purported to have made them was probably a Yaygir speaker, a member of the group who occupied an area of the coast around Yamba and whose territory extended perhaps 10kms inland. If this argument is accepted, there is a remarkable similarity between this and Ainsworth's comments: coastal people moving short distances in from the coast at certain times of the year to exploit terrestrial resources but being essentially coastally-oriented.

There are also references to people, sometimes large numbers of people, travelling considerable distances for ceremonial purposes: for instance, from the Clarence valley onto the tablelands. McDonald (1840) makes reference to this and states that they were found in the central tablelands

involved in ceremonies with people from the Macleay valley. Hob (1939), a resident of the Tenterfield area in the 1860's and 1870's, recalled 300 Aborigines, including some from Tabulam, gathering for a corroboree at Hawkins Gully, near Tenterfield: an observation that seems to bear out McDonald. Gardner (1854: II: 85) reported groups journeying to Yarra Merricana (the Dorrigo area of the tablelands) in summer as it was a good place for hunting, and ceremonies could and were held there. O'Sullivan-White (1934) notes that Clarence River people were present at a corroboree held some distance to the east of Armidale (but see below). Finally, MacDougall (1900: 117) recorded that 'Ulun-gara', who were 'doctors' or old warriors - initiated older men of some status, would travel to the mountains at various times of the year for ritual purposes. On occasion they might remain there for up to three months.

Although no one of these sources stands out as being of exceptional quality, the consistency of the references of movement to the tablelands can be taken as confirmation that this did take place and that it was often associated with ceremonial/ritual activities. There is also the fact that Gumbaynggir speakers of the Ba:anbai dialect occupied country on the eastern margin of the tableland. It would not be unreasonable to suppose that on occasion other Gumbaynggir speakers might be invited into their territory. There is also the circumstantial evidence that the escaped convict, William Craig, who led squatters from the Clarence valley up onto the tablelands, learnt of the route from the Gumbaynggir speakers with whom he lived while he was an escapee (Henderson, 1980: 246).

Unfortunately, and with the exception of Hob, who states specifically that the people he saw were from Tabulam, none of these sources indicates whether they are referring to purely sub-coastal groups or coastal people in general. However, the reminiscences of Flick tangentially throw some light on this.

Flick (1934: 2) describes people from the Clarence, and elsewhere, travelling north, and others who travelled south, to the Richmond for ceremonial purposes. Calley's (1959) records corroborate movement between these valleys, though he does not emphasise the ceremonial aspect - see above. Flick comments:

Often the Lismore tribe would send...messengers over to the Clarence or the Tweed tribes to invite them to a feast or merrymaking...should the invitation be accepted the whole tribe from the Tweed or Clarence would journey to the Richmond where merrymaking would continue, for, perhaps a month.

A few points to be highlighted from this account are:

1. Flick specifies that an inland group, the Lismore 'tribe', sent invitations to the Tweed and the Clarence but makes no reference to the Ballina, or coastal Richmond, group. His

statement can in no way be taken to imply that people from the coast participated. From this it would seem unlikely that coastal people would intrude into sub-coastal areas so as to travel to the tablelands.

2. It is not clear whether only Bandjalang speakers from the Clarence valley attended, or if it included Gumbaynggir speakers were also invited. Speakers of both languages lived in the Clarence valley (see chapter 5, section 5.2.2). Thus, it is uncertain whether only dialect/estate boundaries were crossed or if major language barriers were ignored in the arrangements. The question does not arise for the Tweed people as they were Bandjalang speakers.
3. It is uncertain how many people made such journeys because of the ambiguity in the use of the term 'tribe'. As I have noted in chapter 5, the term was applied to any group from what we would refer to as the band up to the complete tribal language group. Thus, Flick could be talking about a group which could range in size from 20 individuals up to several hundred. The tone of his comment, however, would suggest that a figure of 50 to 100 would be an appropriate assumption, leading one to conclude that the total gathering could have been of several hundred people. This is by no means an excessive figure, as a number of sources (e.g. Ainsworth, 1922; Hodgkinson, 1845: 221; Scott, 1929) make reference to gatherings of this scale.
4. The reference to the Lismore 'tribe' would imply that this was a group separate to that at Ballina or any to the west of Lismore - see discussion in preceding section.

#### 6.3.2.1.3 *The Macleay Valley*

Once again, references to movement of any kind are rather slim. Hodgkinson (1845: 222) and Henderson (1851: vol II: 108) both noted that people were generally divided into small bands which moved continually. These bands' movements were restricted to the territory of the 'tribes', which I believe were clans, of which they were a part (Hodgkinson, 1845: 220; Henderson, 1851: vol II: 108). Hodgkinson (1845: 53) also notes, however, that those Aborigines on the mouth of the Bellingen River with whom he had dealings were sedentary. Both Henderson and Hodgkinson state that there was no need for people to venture outside their territory because the valley was so rich that all their requirements could be met within this area.

On occasion, bands would gather with other clan members at some location for an initiation ceremony, to corroboree or to fight another group. So, for instance, Hodgkinson (1845: 239) refers to a gathering of the Calliteeni 'tribe' as a prelude to fighting the Yarrabandini 'tribe'. Following this fight and the more serious homicidal activities which ensued, ceremonies were held in both

Calliteeni and Yarrabandini territory to mediate the dispute. In view of the locations given by Hodgkinson for each of these groups, this indicates that there was some joint ceremonial activity by coastal and sub-coastal people. He does not suggest it was by any means a regular event: indeed, he notes it was to resolve an extraordinary situation of escalating inter-group violence.

McMaugh (1931: 3) records that up-river people would summon those from further down the river to attend Keeparra ceremonies. There are also accounts of 100 Macleay River Aborigines (the report is no more specific than this) journeying north to Bowraville to fight people from that district (Anon, *Town and Country Journal*, 1871: 266). Neither these nor Hodgkinson's accounts involved people crossing a major linguistic boundary: all movements would have been within the region in which Dhan-gadi dialects were spoken. However, the description in the *Town and Country Journal* includes a mention of Bellinger River people travelling down to the south to join in. On the basis of language distributions outlined in the previous chapter, these would have been Gumbaynggir speakers. This would seem to indicate that there was some contact between language groups.

There are other references to long-distance movement which also would have necessitated travel across language boundaries. So, McDonald (1840), *C.C.L. for New England*, notes the presence of Aborigines from the Macleay valley on the tablelands during late summer. Merewether (1851), *C.C.L. for the Macleay*, confirms this by noting: 'They are wont in summer to proceed to New England'.

O'Sullivan-White (1934), in his reminiscences, also notes that Aborigines from the Macleay were in attendance at a corroboree held to the east of Armidale. This last reference also records that Gumbaynggir speakers were present, further strengthening the case for inter-tribal contact between speakers of these two languages (see section 6.3.2.1.2). Irrespective of its other serious deficiencies which reduce its credibility, I have already suggested that although this source includes a reference to the presence of tablelands groups at this gathering of 600 people, it is possible that the mention of tableland people refers to Ba:anbai speakers, i.e. members of the Gumbaynggir tribe who occupied the eastern margin of the tableland, rather than Nganjaywana or Yugumbil speakers.

O'Sullivan-White (1934) claimed that Dhan-gadi speakers travelled as far south as Newcastle. Here they attended ceremonies sponsored by Awabakal speakers. There is also a description of a fight near Allendale, on the Hastings River, in which Macleay Valley Aborigines were involved (Workman, 1926 in Ryan, 1964). In either case, journeys requiring the crossing of numerous linguistic boundaries at both the dialect and tribal level would have been required, but this time as part of contact with people to the south.

There is little doubting the veracity of the evidence presented in the majority of these sources. They are either of high quality, e.g. Hodgkinson and Henderson, or the evidence of the poorer sources is corroborated in some way by these other, more reliable documents, and the number and consistency of observations insist that we should attach some weight to them. O'Sullivan-White stands as a notable exception, riddled as it is with internal inconsistencies and without corroboration in another source which is unimpeachable.

#### 6.3.2.1.4 *Summary and Conclusions*

In each of the three valleys the pattern of movement, both as part of the food quest and for ceremonial purposes, sustains the model I have outlined. There was considerable movement at the band level, but this was largely restricted to the estate of the core members of the band. Occasionally, small bands from sub-coastal areas would travel to the coast, but only by invitation of the coastal people. There are no strong references to coastal people journeying into the hinterland, other than to exploit rainforest resources a few kilometres behind the coast, although Hodgkinson and Bray suggest that there was some limited ceremonial interaction between people of these two areas. The few references that are usually cited as pointing to large-scale movement from coast to hinterland, and back, have been shown to either be suspect (e.g. Oakes, 1842) or can be equally interpreted as supportive of the model presented here (e.g. Dawson, 1935). There was considerable movement parallel to the coast, i.e. in a north-south direction, for ceremonial purposes. Sub-coastal people also travelled into the gorges and onto the tablelands for ceremonial purposes, but there is no evidence that coastal groups took part in this. With the exception of O'Sullivan-White (see comments above) there are no references to joint ceremonial gatherings of sub-coastal and tableland people. Some of the ceremonial movement described would have involved interaction between not only different dialect groups but also different tribal languages.

#### 6.3.2.2 The Tablelands

##### 6.3.2.2.1 *References to movement*

As ever, the volume and quality of the ethnohistorical evidence available for the tablelands nowhere near matches that for the coast. However, it is possible to divide the references that are available into categories of movement either associated with the food quest and for other mundane reasons, or related to ceremonial purposes.

There are a number of accounts of movement by bands as food became scarcer in an area, or for reasons of hygiene. Everett (1840) reports a group camped near his property moving a further day's ride to hunt for possums. P.H. Henderson (1859) described something similar in noting that the Aborigines moving about in bands, shifting camp at the dictate of food availability. Wyndham (1889: 39), a man who lived and travelled with Aborigines on the western tablelands and slopes, suggests regular movement was part of the food quest. McDonald (1842) also records

that they were constantly relocating camp in search of food, as does McPherson (1978). McPherson further notes that camp would be shifted every 7 to 10 days: sometimes a band would establish a new camp only a few hundred metres from the previous one if the old camp had become unhealthy or if someone had died, while on other occasions they moved some kilometres to an area where food was more abundant.

Everett's reference relates to movement during the winter months, while Wyndham documents movement during spring. The other sources make no mention of season. This leads me to conclude that there was no season during which they moved either more or less than any other. Everett and McPherson are both reputable and early sources, had close contact with Aboriginal people, and can not be doubted: likewise the case with Wyndham. McDonald's and Henderson's observations fall into line with their's and confirm this as a general pattern.

The most frequently cited reference to movement by tablelands people is that of Gardner (1854 : I: 34). He stated that in February and March, tableland groups would move to the western slopes because the march flies were 'too merry saucy'. While I find the ostensible reason unconvincing, Gardner is an excellent source and, therefore, his reference to movement to the west during the summer months must be accepted. Both Gardner and Calvert (1847) report that Moore Creek (or Burkenbandean), just to the north of Tamworth, was an important ceremonial gathering place, and McPherson (1978) confirms this by naming the same locations.

These sources compare the gatherings here with those associated with the Bunya harvest. Gardner (1854: I: 73) states the purpose of these gatherings as being: '. . . the various tribes of the interior meet at appointed places, at these rendezvous (sic) their disputes were adjusted and settled'. It is probable that tableland groups were amongst the many people who attended such gatherings (incidentally suggesting that ceremonies were held in February and March, i.e. the months when Gardner says they moved to the west). The evidence of McIntyre (in Pearson, 1973: 66), who reports tableland Aborigines present at a corroboree near Inverell along with western slope groups, offers some direct support for this suggestion.

Gardner also mentions that there was movement around the tablelands for ceremonial purposes. He noted that gatherings were a common event during the course of the year to settle disputes and to initiate young men but does not mention any particular season. Calvert (1847: 61) provides further detail on this point by noting that a common meeting place for such gatherings was near Kentucky, some 20 kms to the south of Uralla.

Bowdler (1981a), McBryde (1974) and I.C. Campbell (1969) attach considerable significance to evidence for movement by tableland groups to the east. They argue that this points to regular

movement by such groups off the tableland during the winter months. However, as I have already noted, some of those references may relate to sub-coastal people retreating into the gorges, rather than tableland groups proper. This is Blomfield's opinion as well (1981: 78). Furthermore, some of the sources for such easterly movement are highly suspect (e.g. Archie Marlow - see chapter 3).

Thirdly, some of the references do not indicate the period to which they are referring, and could well be documenting a far from traditional pattern. For instance, Fitzpatrick (1914) described Aborigines from the Walcha area travelling to the coast for a ceremonial gathering at which people from Port Macquarie, Kempsey and the Manning Valley. He gives no date, but implies that it was not long before publication. By the mid-1880's, many Dhan-gadi speakers had settled on the tablelands, and were working as stockmen (see Morris, 1983; Quinlan, 1983). In view of the fact that Dhan-gadi people continued to hold ceremonies until 1935 (Creamer, 1981), Fitzgerald could well be documenting these people travelling down to attend ceremonies sponsored by their coastal kin well after the disarticulation of traditional patterns of alliance and movement.

However, there is some good evidence for small groups of tableland people moving down through the gorges during the late summer months. Hodgkinson (1845: 60) reports that he and a group of sub-coastal Aborigines had a close encounter with a band of tableland people near the foothills of the eastern escarpment on the Bellingen River. Significantly, the sub-coastal Aborigines were eager to avoid meeting the tableland group, who they regarded as dangerous and as enemies. Hars (1939) corroborates this by noting that, on occasion, bands of tableland men travelled east towards the coast to raid groups on the coastal plain.

#### 6.3.2.2.2 *Summary*

The data suggests that small bands moved around the tablelands throughout the year. During the summer months, some, if not all, tableland groups travelled onto the western slopes and held joint ceremonies with people of the that area, i.e. Gamilaraay speakers. Small raiding parties occasionally moved into the gorges and onto the coastal plain. There is little evidence of large-scale movement to the east by Nganjaywana and Yugumbil speakers either for ceremonies or to escape the exigencies of a tableland winter. Nor, with the exception of O'Sullivan-White (1934), are there any references to joint ceremonies involving tableland and sub-coastal people being held on the tablelands. In fairness it requires noting that the data is somewhat unspecific on this question, so a dearth of evidence should perhaps not be taken as negative evidence. The sole reference to movement from the tablelands to the coast probably documents circumstances in the 1890's or early 1900's, 30 years after the breakdown of traditional patterns.

### 6.3.2.3 Group Movement on the Western Slopes

This area as a whole is not a central concern of this thesis, but movement by its prehistoric inhabitants is directly relevant to the issues being canvassed in this chapter. As both Allen (1968) and Pearson (1973) have covered the material in some detail and reached the same conclusion that there was considerable movement in this region throughout the year I do not wish to dwell overly on the data. I do want, however, to draw out a few salient points.

Firstly, I note that Allen and Pearson stand in direct contrast to McBryde (1976; 1977). McBryde does not examine the ethnohistorical data in any depth but rather relies on the archaeological evidence excavated from the Graman rockshelters. This she interprets as indicating a sedentary pattern of settlement, arguing that the range of faunal and floral resources they were exploiting were available throughout the year. Moreover, as the Ottley Creek valley is very rich in these resources, she considered that it would not be necessary for the inhabitants of the valley to move elsewhere. This is all very well for the band or two of people who might have lived in the valley (which is a unique geological feature in this region and therefore hardly likely to represent the norm), but what about the other thousands of people who lived in the northwest (see chapter 5). Apart from this, the archaeological data from these sites provides no indisputable markers of season of occupation or the length of any one episode of occupation. For these reasons, as well as ethnohistorical evidence to the contrary, I find McBryde's arguments unconvincing.

There are a few references to group movement that must be mentioned as they relate directly to movement to or from the tablelands. Firstly, Wyndham (1890) reported that he travelled extensively with Aborigines of the northwest slopes. On these journeys they would sometimes move up onto the western fall of the tableland. Such journeys were made in the spring by bands of about 20 people. Hunting was a particularly rewarding activity as there was an abundance of wildlife that could be caught fairly easily. The cold weather at night did not worry people as they simply rolled themselves in their possum-skin cloaks and slept near a fire. Gardner (1854), too, records that people from the western slopes travelled onto the tablelands to hunt macropods and other animals.

References to movement associated with the ceremonial round also exist, and I have cited evidence above to the effect that these gatherings were noteworthy events to which large numbers of people were drawn: Gardner, Calvert and McPherson all compare them to the Bunya feasts. Many hundreds, if not thousands, of people would have been involved. Richard Bligh (1848), C.C.L. for the Gwyder River, recorded instances where large gatherings for initiation ceremonies were held in October and November somewhere near Myall Creek. He makes it clear that some of the groups attending had travelled considerable distances for this purpose. He

makes no explicit reference to tableland groups, but evidence cited in the previous section makes it seem probable that they were.

The Irbys (1908: 86) recorded that two 'tribes' of Aborigines met near Bluff Rock on their Bolivia Station, midway between Deepwater and Tenterfield, in June, 1841. They provide no details of the place of origin of these groups but suggest that they had gathered for ceremonies. In August of the same year they encountered Aborigines from the Severn River camped at Bluff Rock. These people would have been Gamilaraay speakers, present in Yugumbil territory (see chapter 5). It is even possible that some of them were amongst those seen there in June. Wyndham (1889) reported travelling to a bora held in Yugumbil territory at which Gamilaraay speakers of the Bigambul and Kwiambul dialect groups were present, along with Yugumbil, Nganjaywana and, possibly, Eneewin speakers. Wyndham does not provide a precise location for this event although he makes it clear it was in Yugumbil territory. That it was probably in the Bolivia area gains some credence not only from the Irbys, but two other sources (Hars, 1939 and Bates, 1939) also note that Bolivia was the staging ground for ceremonies involving large numbers of people, some of whom came from the south and the west to attend.

From this I draw the following conclusions:

1. There was considerable movement of western slopes people in the course of their food quest.
2. Such movement included travel onto the tablelands, and was not just a summer activity.
3. Movement associated with ceremonial activities was also recorded amongst them.
4. There is the strong possibility that tableland groups travelled to the slopes, both in October-November (Bligh, 1848) and February-March (Gardner, 1854), to take part in these ceremonies.
5. There is also evidence that western slope people travelled onto the tablelands to attend ceremonies sponsored by tableland groups. In some cases these ceremonies were held in the Bluff Rock/Bolivia area.
6. Although the season during which these ceremonies were held is not clearly stated, there is evidence to suggest that some were held during winter and early spring.

### 6.3.3 Intergroup Relations

In the previous sections of this chapter I have argued that the data available on seasonal occupation and actual references to movement sustains the model I offer. The final element of the model I canvass concerns the type and degree of interaction that occurred between groups in northeastern N.S.W. It is clear from material considered above that long-distance movement associated with ceremonial activity was a commonplace. The data does, however, leave unanswered questions on the degree of interaction between groups where long distance was involved. For instance, while people from sub-coastal areas regularly travelled to the tablelands it is uncertain whether they engaged in joint ceremonies with tableland groups. It is entirely possible that journeys could be made into areas that were in dispute, and that little or no friendly interaction between protagonists took place. It would not be unusual for disputants to hold independent ceremonies in such areas given that custodianship/ownership and therefore right of entry was commonly validated by claiming exclusive knowledge of requisite arcane information, demonstrated by conducting ceremonies at or near important sites. Consequently, in formulating models of alliance and exchange it is not only necessary to document movement by one group into another's territory: it is also necessary to consider the state of their relations, and whether this reflects short or long term conditions.

Data on group relations are extremely patchy. As references to specific groups tend to be few and far between, I have included some rather general references germane to this subject where appropriate. The references to movement and group relations are not unconnected, nor are they of consistently high quality or large in quantity. Therefore, while references to group relations are supportive of the model of movement and alliance I have advanced they can not be used as an independent check or test.

#### 6.3.3.1 Relations between coastal groups

Calley (1959) makes it clear that relations between the various clans of the Bandjalang were somewhat ambivalent. For instance, he recorded tales of clans in the Richmond valley dispatching bands of warriors to raid other clans in the Clarence valley to abduct women or to exact retribution for various wrongs. On the other hand, Calley and others (see sections 6.3.2.1.1 and 6.3.2.1.2), also indicate that on occasion bands, if not clans, of widely-spread Bandjalang-speakers would gather for ceremonies.

No data are available for the Gumbaynggir but Hodgkinson (1845) provides some clues for the Dhan-gadi speakers of the Macleay valley. One episode he describes (1845: 239) is particularly enlightening in this respect. Members of the Yarrabandini group killed a Calliteeni man. The Calliteeni and the Trial Bay groups, who apparently had some sort of alliance, then attacked the Yarrabandini in retaliation for this. Initially, the warfare was of the formalised, almost

ritual type usually attended with little bloodshed, and in which the death of an opponent was an accident engendering much remorse. In this case, however, Hodgkinson indicates that the vendetta went on beyond this, with further raiding and violence. The dispute was eventually resolved, and joint ceremonies were held in the territories of the three groups involved, to normalise relations.

It would seem, therefore, that the nature of interaction between Dhan-gadi clans was in a state of flux, ranging from close alliance in some instances through to outright hostility in others, but with opportunity for such conflict to be mediated through ceremonies. In the case cited above, we have an example of considerable hostility between a coastal and a hinterland group. In keeping with this it has been observed in previous sections of this chapter that evidence of movement between coast and hinterland is not great, and that evidence of long-distance movement associated with ceremonial gatherings tends to be parallel to the coast. However, the fluid nature of the relationship Hodgkinson described should not be ignored as the groups did establish amicable relations with one another. Such conditions would pertain to relations between different clans and tribes in the coastal and sub-coastal zone in general. No doubt alliances continued to shift in response to perceived transgression of mores, or as various parties attempted to obtain some advantage (cf. von Sturmer, 1978). Consequently, there is every likelihood that if observations had been made a few short years before or after, entirely different patterns of movement might have been noted.

I have mentioned in chapter 5 that a point consistently emphasised by coastal ethnohistorical sources (e.g. Hodgkinson, 1845; Henderson, 1851; Ainsworth, 1922; Jones, 1936; Bundock, 1978), was the need for the issue or receipt of a formal invitation before members of one clan entered another clan's territory. Such invitations were effected by dispatching senior men equipped with message sticks (a piece of hardwood in which geometric, non-figurative designs had been engraved - see McBryde, 1978b: 162, plate 28) either to invite a neighbouring group into one's territory, or to request permission to move into or through another's. I have offered a case that each clan had custodianship over an area and thereby rights over disposal of the resources located therein. In view of this, it is not surprising that some formal mechanism of this type existed to regulate movement between clan territories whether people were friendly to one another or not. It would be even more necessary in circumstances where relations were open to constant reappraisal and fluctuation, and some means of ascertaining the current status of relations between oneself and a neighbouring group would be essential in minimizing the potential for violent and possibly fatal conflict.

### 6.3.3.2 Relations between coastal and tableland groups

Some (e.g. Bowdler, 1981a; Bowdler and Coleman, 1981) have argued that relations between coastal and tableland people sustained joint ceremonial gatherings. Their primary source for this line of argument is the reminiscences of O'Sullivan-White (1934) who claimed to have attended a ceremonial gathering of 600 coastal and tableland people held to the east of Armidale in 1850. He recorded that after a ceremonial battle the participants engaged in dancing and exchange of gifts. I have previously noted the suspect nature of this evidence, citing the curious manner in which it came to be published and various internal inconsistencies as particularly worrisome, and noting that it is possible that the tableland people he refers to could well have been Gumbaynggir speakers from the extreme eastern margin of the tablelands. Moreover, as has been noted, there is no other strong evidence other than O'Sullivan-White that joint ceremonial activity occurred. There is also evidence that strongly suggests that relations between sub-coastal and tableland groups were far from cordial.

Hodgkinson (1845: 66) records an interesting case when travelling with sub-coastal Aborigines in the vicinity of the foothills at the head of the Bellingen valley. His group observed smoke from a campfire situated some small distance from their own camp. His companions did not expect to encounter any group of their own people in the vicinity. They therefore concluded that the fire must have been that of a raiding party of tableland Aborigines. They impressed upon Hodgkinson the need to move from the area as soon as possible as they had no wish to run up against a group whose intentions they considered could only be hostile. This I take to be a clear indication that tableland and sub-coastal people did not have a longstanding pact of friendship based on joint ceremonies and gift exchange. (It also indicates well-developed lines of communication and extensive knowledge of the movements of other bands in this region).

A second source, Peter Perry, an Aborigine born at Yugilbah on the upper Clarence River, who reported that 'as a rule the New England tribes were friendly with each other, but hostile to the Queensland and Macleay River tribes with whom they had many battles' (cited in McPherson, 1904: 684). McDonald's (1842) observation that there was 'fear and distrust between tribes in the New England district' may lend some support to this when it is remembered that he also reported the presence of both Macleay and Clarence Rivers groups on the tablelands at this time.

In light of this an argument that animus existed between sub-coastal and tableland people can be as well substantiated as one which opts for amicable relations. While it is possible that the situation described by these observers (i.e. Hodgkinson, Perry and McDonald) could reflect short-term hiccups in otherwise friendly relations, a similar circumstance to that observed on the coast, there is considerable evidence militating against it. Without wanting to preempt later arguments, linguistic evidence along with data on social organisation, and archaeological evidence centring on exchange networks and artistic traditions all point to extremely limited social interaction

between people of the tablelands and the coastal plain for a considerable period of time. In light of this, O'Sullivan-White's observations might, if they are taken at face value, document a patching of relations that had been badly strained for a very considerable period of time indeed. The general absence of references to movement associated with joint ceremonies noted above conforms with this picture of animosity between the sub-coastal and tableland people.

### 6.3.3.3 Relations between tableland and western slope groups

We have little direct evidence on this. I have already argued that there is evidence that tableland and western slope peoples engaged in joint ceremonies, with each journeying to the territory of the other for this purpose. This would seemingly point to good relations. The only other reference at all pertinent to this question that I have been able to find comes from Wyndham (1889: 41). He reports that a close relationship existed between some Gamilaraay dialect groups and Yugambal speakers and that there appeared to have been some transfer of ceremonial behaviour between these groups. Unfortunately, he does not expand on this point so it is not clear to what traits he was referring. Slight though it is, this evidence for joint ceremonies, and to good relations generally, suggests that this was a situation of some standing. While alliance might too strong a word for this relationship, there are grounds for believing that tableland and western slope groups had regular concourse. It would be surprising if this did not include exchange of material items and stylistic behaviour as well as social/ceremonial and genetic.

## 6.4 SOCIAL AND LINGUISTIC RAMIFICATIONS

In the following chapter I will offer a series of expectations about what patterns should be discernible in the archaeological record if the hypothesis is to be confirmed, or at least not disproved. Before leaving the subject here, however, I want to consider how such a model of movement and interaction might be reflected in the linguistic and social arrangements observed in the region at contact: what are the social and linguistic corollaries of the patterns of movement and alliance I have described above?

It has been noted that the development of separate languages and appearance of new dialects is very much a function of the social arrangements of a population at large. Where clans are heavily involved in attempting to stress their separateness or political and geographical autonomy, which often leads to social isolation, we can expect to see dialects diverging and entirely new languages emerging over a relatively short period of time. In circumstances where the isolation and exclusivity is not maintained, where flux is a common feature of relationships, there may be a heavy emphasis on clan dialects as a means of demonstrating separateness from others and commonality of interest with those who are kin. However, because people are constantly rearranging and/or re-establishing their friendships, and consequently exchanging different, or

reinforcing shared elements of their vocabularies, dialects do not suffer the same degree of divergence. Dialectal variation may be strong but it does not allow situations in which people end up being mutually unintelligible.

The point I make relates directly to the networks of movement and interaction I have modelled above. Along the coast and in the adjacent sub-coastal zone we find a large number of dialects within a small number of tribal languages. Amongst the Bandjalang, for example, there may have been as many as twenty-two separate dialects, each associated with a particular clan. Certainly, these dialects have diverged from each other, some to a marked extent: dialects at either end of the Bandjalang dialectal cline may have been, to all intents and purposes, mutually unintelligible (Calley, 1959). However, the dialects are still discernibly examples of a single tribal language. There has not been the degree or length of isolation from sister dialects for a definitively new language with its own rules of syntax and items of vocabulary to develop.

This equates closely with patterns of interaction we have considered above (section 6.3.3.1). Here I have noted that there appears to have been a high degree of fluidity in social relationships. Groups were keen to assert their authority over those areas properly considered to be under their custodianship imposing strict control over the movement of others into those areas. Animosities and divisions between groups were also common, leading to social isolation and/or violent conflict. This would be resolved, and more or less amicable relations established. Language was no doubt an important item in the game, with dialectal nuances being an important guide of the current status of relationship between groups who might meet only infrequently: custodian or visitor, friend or foe. As the relationship was constantly being re-evaluated and ties, though sometimes strained, were renewed, dialects never diverged to the point that resulted in the formulation of a new tribal language.

It has been noted that the most marked degree of divergence was seen in those dialects spoken at the mouths of the major estuaries of the Macleay, Clarence and Richmond. I see two alternatives that could explain this. The first is as a result of the historical process of European settlement and its impact on Aboriginal groups in the region. I have suggested in chapter 3 that the impact of settlement was less pronounced on those Aboriginal people who lived immediately adjacent to the coast and estuaries because they were not in direct conflict with Europeans for the resources. Consequently, they continued in a traditional mode for far longer than those who lived inland, and who were thrown into conflict for the limited resources both races required. Thus coastal dialects could have maintained their distinctive elements far better than those of those who, when dispossessed of their land, were forced into a linguistic melting pot as fringe-dwellers on the edge of the settlements and towns that sprung up, and this has been reflected in the records of linguists.

While certainly this process may have played a part, we should not overemphasise the isolation and separateness of these coastal groups from the effects of European settlement. While there was certainly an argument to be made that Aborigines were often forcibly dispossessed of their traditional hunting grounds by graziers and farmers, we must not forget that the towns and hamlets were seen as 'super waterholes' (Elkin, 1936 in Campbell, I.C., 1978). Aboriginal people gathered near them for the abundance of food and desired trade items, such as steel axes or tobacco, that were available. The almost-magnetic attraction of such places would have had as much influence on coastal groups as any and with it would have come a marked diminution in dialectal variation. It would seem to me, therefore, that for the coastal dialects to have maintained the differences noted by linguists well after the onset of these processes of linguistic dilution it was likely that these dialects exhibited stronger divergence from all other dialects of the tribal language than was the case between any of these other dialects.

What should we make of the linguistic arrangements of the tablelands. Linguists had long been intrigued by the Aboriginal languages of the New England Tablelands. Some had even gone so far as to refer to Nganjaywana (Anewan) as aberrant to the Pama-Nyungan family of languages within which it lies. As we have seen, Crowley (1976) has clearly shown it is not, but simply demonstrates a degree of divergence from its closest relative notable for its extremity among languages of this family. Crowley (1976) argued that Nganjaywana, Eneewin and Yugambal were related to Dhan-gadi, and derived from the same parent language. Some mechanism of isolation and lack of need to borrow words from other languages over an extended period was, in Crowley's view, responsible for the divergence seen between the tableland languages and their coastal relative. Whatever the details, this is in close accord with the model I present, in which such interaction as there was between the people of the coast and the tablelands was negative, with fear, suspicion and outright enmity characterising the relationship. Hence, there was little of the close and friendly contact common at ceremonies which would have lessened the strength of the drift seen between these languages.

Language of itself is not necessarily a bar to establishing a network of alliances. Bilingualism was and is common in Aboriginal society, with people conversant in their parent tongue and that of their neighbours as well (e.g. Turner, 1978: 121). The point worth stressing is that these people of the Macleay valley and tableland derived from forebears who at one time spoke the same language. It is the degree of divergence of this parent language, referred to as proto-Dhan-gadi (Crowley, 1976), that is remarkable, particularly in view of the fact that it can not be explained by reference to geographical isolation (see above).

There are some other significant differences in social organisation that further highlight this. For instance, Dhan-gadi speakers had a patrilineal totems; tableland people had matrilineal

totems, something they held in common with western slope groups. Once again, the lack of similarity is not any kind of absolute barrier to cordial social relations. Turner (1978: 123) documents cases in Arnhem Land where people possessing very different beliefs and values established strong ties, regularly engaging in joint ceremonial activity. He also makes the unsurprising point, however, that there is also exchange of ceremonies, and adoption of new rituals, by ceremonial partners. The Dhan-gadi and the various tableland tribes ultimately derived from the same forebears, who possessed a single unified cosmology. The radical drift that has been observed fits squarely with my model of highly restricted interaction on the ceremonial front, with no opportunity to reinforce those elements they shared, or for exchange of new ideas.

It must be noted, however, that the languages of the tableland have even less in common with those of the western slope than they do with those of the coast. According to Crowley (1976) there is no evidence to suggest any linguistic link. It seems that there was little exchange between, and hence homogenisation of, the languages. But we have already noted that bilingualism was common, and thus this may have presented no obstacle to interaction. Crowley (1976) also offers the plausible observation that as Nganjaywana, and its close tableland relatives, had diverged so far from all other Pama-Nyungan languages that it was not an attractive proposition to borrow from them.

In connection with this point there are a few Gamilaraay-derived words in the word lists of Nganjaywana (Crowley, 1976), suggesting some limited, perhaps more recent borrowing from this source. This is at least consistent with my model. Of greater import is a point I have made above: the peoples of the tableland and western slope shared certain customs, beliefs and values. Mention has already been made of the common use of matrilineal descent systems.

Radcliffe-Brown's (1931:233) observation that certain western slope groups shared the Anewan totemic system with tableland people is also apposite. This brings to mind the cryptic comment of Wyndham (1889:41) that there had been some transfer of ceremony or ritual between the tableland and western slope groups with which he was familiar. In the same paper he goes on to describe a ceremony he attended at which members of the Kwiambul and Bigambal dialects were present, along with Nganjaywana and Yugambal speakers. Radcliffe-Brown's Anewan system was used by Nganjaywana and Yugambal speakers, and Kwiambul and Bigambal speakers. The corollary of the observation that difference was not an insurmountable block to joint activities certainly holds: i.e. similarity does not necessarily denote sharing or social ties. The congruity of these reports, however, can not be denied, and the inference to be clearly drawn is that specific groups of western slope and tableland people were engaging in joint ceremonial activity as a consequence of which exchange of beliefs and ritual occurred. I will return to this point when discussing variation in rock art styles throughout the region.

The development of three separate languages but with only a few dialects in each makes an interesting comparison with the coastal situation where over a much larger area there are still only three languages but a large number of dialects. Continuing to follow the line that linguistic diversity is related in part to social schism, it is not unwarranted to speculate whether when alienation took place on the tablelands it was far more serious and of a longer term than on the coast, leading in turn to the development of new languages rather than dialects because of this more intense social and linguistic isolation. The fact that tableland groups continued to share a number of organisational attributes is not, *ipso facto*, evidence against this proposition. Similarities in social organisation could result from conducting ceremonies with the same western slope groups independently of other tableland groups and coincidentally adopting or retaining some of the same elements.

While it is known that each of these things is in some way indicative of the relationship that exist between groups, they are qualitative and mutable indices of social cohesion. There is nothing absolute about them, nor do we even know which is the strongest indicator of the degree of interaction. Taken together, however, the linguistic and social evidence clearly suggests the long-term social isolation of tableland and coastal peoples, while tableland and western slope groups display traits indicating they were more closely aligned with one another. On the whole, it supports the model I have outlined rather better than it does either one which argues for large-scale freewheeling movement of people around the landscape (e.g. McBryde for the coastal areas), or another in which frequent joint ceremonies between people of the coast, tableland and western slope were the norm (e.g. Bowdler discussing the tablelands).

## CHAPTER 7

### SETTLEMENT: PATTERNS AND PREDICTIONS

#### 7.1 INTRODUCTION

In the preceding chapter the point was made that movement was only one part of the equation in modelling prehistoric settlement in a region. There is also a need to consider the availability of resources in its widest sense (type, abundance, duration, accessibility), the distribution of people over the landscape on a seasonal basis, and the technology people had recourse to in appropriating the resources they chose to exploit. Here I want to examine data pertinent to these issues and formulate a model of settlement and exploitation incorporating them and the model of group movement I have advanced in the previous chapter. In the latter part of this chapter a series of expectations are offered as to what patterns should be discernible in the archaeological record if my hypotheses are to hold true.

Before passing to the data I should make two points. I have restricted my coverage to those regions included within the archaeological survey: the New England Tablelands and the gorge country to their east. I have done this with a couple of thoughts in mind: that any larger area would be overly ambitious and largely irrelevant, and that previously very little attention has been paid to these two areas in particular. Part of the reason these two areas have tended to be ignored was because of limited ethnographic data, and because of an archaeological resource whose form was inappropriate for the investigation of then-current research issues. It is true that the ethnographic data is sparse. What I hope to illustrate is that it is perhaps richer and of greater use for archaeological modelling when different archaeological approaches are applied.

#### 7.2 FOOD: RESOURCES, TECHNOLOGY AND SEASONALITY

In the discussion that follows I have chosen to amalgamate discussion of faunal resources in the two areas, which I review first, but deal with the floral resources for each separately. My reason for doing this is that there are many parallels in the faunal resources available, and in the manner in which they were exploited. Considering them jointly avoids any unnecessary duplication. Floral resources on the other hand are quite distinct and are most easily handled on an area by area basis.

## 7.2.1 Faunal Resources

### 7.2.1.1 Macropods

A resource mentioned frequently in the ethnographic literature for these areas was the macropods: kangaroos, wallabies and their other close relatives. All the major sources note that macropods were an important resource, and go on to describe in detail the various techniques used in hunting them. The attention paid to these animals in the literature can be thought to reflect the preoccupation that early observers had with the hunting component of hunter-gatherer subsistence. This may be true, but we should not lose sight of the fact that macropods were an extremely abundant and obvious resource in this region (perhaps more so on the tablelands than in the middle reaches of the Macleay system), and therefore offered a ready supply of meat if effective techniques to capture them were available.

There were two primary methods of procuring macropods. The first was by stalking and, when close enough, spearing of the animal. The second was by means of large-scale drives, involving the organisation of large numbers of people, with the animals being dispatched with club or sometimes spear upon being driven into the ambush of the hunters. This latter technique often excites comment from prehistorians interested in this region (e.g. McBryde, 1976 and Bowdler, 1981a) but has not been considered in any detail. Questions that need to be examined include:

1. what were the mechanics of the hunt;
2. what were the conditions, both environmental and social, under which hunts of this type were employed;
3. what were the ramifications of this method of hunting for social arrangements of the groups concerned.

#### 7.2.1.1.1 *Stalking and spearing of macropods*

The Aboriginal hunter skilled in tracking, stalking and spearing his prey may not have been quite as ubiquitous as the stereotype depicts him, but it was not an entirely unknown way of acquiring meat in this region. There are a number of accounts of hunts of this kind, as well as descriptions and drawings of some of the items used. Although it is possible that the hunter established a hide near a water hole or a patch of fresh grass and speared the animal while it was grazing, there are no descriptions of this. Rather both Bundock and McPherson provide details in which the hunter either pursued his quarry for long distances, finally spearing the animal when it was exhausted, or stalked the animal in the field.

The blacks ran down the kangaroo single-handed following them for hours until they were exhausted and could be speared. I have heard on one occasion a man came to an uncle of mine and asked him for matches, as he had lost his firestick while following a big old man kangaroo. My uncle asked him 'What do you want the matches for?' The black man replied, 'To cook my kangaroo.' Have you killed him then?' asked my uncle. 'No' was the answer 'he is up there' pointing to a mountain about 2 miles away, 'very tired and I go back there and kill and eat him.' Which he accordingly did. (Bundock, 1978: 263)

They show great skill in the arts of the chase . . . To see them find out and follow up the trail of their game is a marvellous proof . . . of the sagacity with which they are gifted . . . occasionally a more than expert hunter will stalk one (a kangaroo) much as sportsmen stalk deer in our country (McPherson, 1978: 249).

This latter quotation suggests that this was not a particularly common method of hunting. However, I am loath to generalise from this account to the region as a whole (see discussion below).

Neither Bundock nor McPherson describe the spears that were used. Bundock, however, donated a number of spears from the Richmond area to various museums. Most of these were simple single unbarbed shafts, thrown without aid of a spear-thrower (see McBryde, 1978b: 151, 179). She also collected a single-piece broad-headed wooden spear, similar in shape to the shovel spear of Arnhem Land, which was used in hunting.

Henderson (1851: II: 128) also records that kangaroos were stalked and speared in the gorge country of the Macleay. He also provides a description of the special spear used, noting that it was a composite weapon consisting of a hardwood shaft of between 3.5 metres and 4 metres in length (12-14 feet), with a series of sharp flints set for a distance of 30 cm at the head of the shaft. The projectile was propelled with the aid of a spear thrower (Henderson, 1851: II: 143-4). Another example of a barbed spear has been reported (McBryde, 1978b: 151). The source of the item is unknown but appears to come from the Richmond valley. The spear is not accessible in museum collections, and the only description of it says

' . . . the spears are very simple things, one has a barb but as a rule any spears I saw on the Richmond River were quite without barbs' (Fanning, 1913 in McBryde, 1978b: 179).

Although Gardner, like McPherson, provided no written description of hunting spears, he drew numerous pieces of material culture. He included two illustrations of spears, both barbed. One of these, with the barbs apparently cut from wood, was labelled a war spear (McBryde, 1978a: 241, plate 56). A second barbed spear on which there are a series of barbs around the upper shaft is also depicted (McBryde, 1978a: 237, plate 54d). Unfortunately, there is no indication of what the barbs are made from or what the function of the spear was.

What can be said with certainty is that the barbs have not been 'whittled' onto the shaft, as they have with the war spear. Rather they have been set along and around the shaft. Whether they are wood, kangaroo incisors/bone points or stone is impossible to determine. However, it would appear that there are spears from the tablelands which are similar in form to those recorded by Henderson.

Barbs attached to spears by twine and gum make a significant contribution to the function of the spear. The following observations have been provided by Kim Ackerman (personal communication) and derive from his own experiments, and observations of Western Desert Aborigines. The wound inflicted by a simple spear shaft is usually not instantly fatal and the shaft is quickly dislodged. The animal flees and eventually, if the wound is sufficiently serious, succumbs from blood loss. If the hunter is to reap any return, he must track the animal until it drops or he can inflict another, more serious wound. Ackerman's observation suggests Bundock's tale is consistent with the simple, unadorned spears she collected.

In the case of resin-fixed barbs it is common for them to detach once the spear has penetrated the hide of the animal. The shaft falling out has little effect on the outcome. The very action of running, however, causes the now-detached barbs to be worked further into the tissue. As an animal seeks to escape it exacerbates the wound it has suffered, leading to increased blood loss, shock and internal injury, and it drops far sooner. The very real chances of the hunter losing the wounded animal are thus much reduced.

Spears from which the barbs do not detach (i.e. those bound on with twine) operate slightly differently but have the same effect. The shaft, instead of coming free, is shaken about by the animal in its endeavours to escape. This causes the spearhead to move in an arc inside the animal, with massive internal lacerations of muscles and organs being the result. In either case there is more severe blood loss, trauma, shock and exhaustion. The use of barbs could thus be seen as a risk-minimising device to ensure that if a hunter who has spent time tracking and stalking a kangaroo actually manages to spear it, the chances of its escaping are virtually nil, reducing the risk in this form of hunting.

#### 7.2.1.1.2 *Net hunting of macropods*

Gardner (1854), McPherson (1978), Bundock (1978), and Ainsworth (1922) refer to the use of nets when hunting macropods of various types, ranging from the pademelons of the rainforest to the grey kangaroos and wallaroos of the forests and woodlands. Details of net construction are rather sketchy, but it seems that there may have been some variation in the form they took. Gardner (1854

in McBryde, 1978a: 239) notes that during the '... occupation of the northern interior, the standing nets of the blacks were frequently found in the bush, and these were of a very durable nature, the blacks employed the bark or rind of the ... kurragong (sic) tree'. The shepherds destroyed them because sheep often became entangled in them (Gardner, 1854: I: 18b). This suggests extremely large and bulky items which, once set in position, were left there from season to season. The apparent abandonment of the nets may appear unusual, particularly given the labour invested in them (Satterthwait, 1987), but their size and weight would have rendered transport a virtual impossibility. Caching of large nets was recorded by Flinders (in Steele, 1972) when he visited Moreton Bay in 1799.

Few details of net manufacture are available nor have any examples from this region found their way into museum collections. McPherson (1978: 249), like Gardner, notes that they were made of kurrajong bark, a tree common on the western falls of the tablelands, or bulrushes, readily obtained from the lagoons and swamps which dotted the landscape. She provides the following description of their manufacture:

These nets are the handiwork of the 'gins', as the native women are called, and are generally made of the fibres of the 'corryjong' tree, or of the bulrush and 'wongul' roots. These fibres are separated by maceration, and afterwards twisted together. The netting needle they use is a piece of hard smooth wood, and the string is wound round it. They work without a mesh, yet the regularity of the loops is quite astonishing.

Completed they probably resembled those described by McCarthy (1963: 175) drawing on ethnographic examples collected from the central highlands of Queensland:

... the natives of the tablelands ... of northern New South Wales made a stout net ... out of plant fibre cord, 3/8 inch thick fashioned into a mesh of 12 inch by 9 inch. These nets, 6 feet to 7 feet high, formed an open-sided barrier up to 120 feet long. The ends were fastened to trees and the nets supported by poles between.

The nets used in the rainforest, described by Ainsworth (1922: 29) and Bundock (1978), appear to have been smaller. The barrier was actually formed by joining a number of small nets together into a continuous length of netting, rather than having a single net of the requisite length. This would obviously increase the mobility of the individual nets. Bundock (1978) noted that during periods of low water in the river the nets would be placed in rivers to form a temporary fish trap, in which case ease of transport and manipulation would be essential. To be effective in this purpose the mesh of the net would have to have been smaller than that described by McCarthy (1963). It may also be that the nets were used in hunting of smaller macropods, red-neck pademelons and the like, for

which smaller nets would suffice while the larger, more robust versions were associated with the bigger animals.

The use of the nets in hunting of macropods seems usually to have been associated with large gatherings of people. Bundock (1978: 263) states:

The men at certain seasons drove the kangaroos to some place where they had fastened their nets to trees and added wings of brush wood in a narrow valley. The whole tribe then drove the kangaroos in the direction of the nets; young men being posted along the line to take up the running, and keep the terrified creatures going till they blundered into the nets . . .

Ainsworth (1922) too, makes the point that nets were used during the large communal hunts that were organised. He notes that the 'whole tribe' was involved. The usual problem of how to interpret references to 'tribes' rears again. Ainsworth reported a figure of 400 for the Ballina 'tribe', while Bundock probably was referring to a clan of at least 50 people. In any event, neither suggests that nets were used by small groups in hunting.

McPherson (1978: 249) in writing of the tablelands and upper western slopes likewise makes the point that 'the whole tribe, aided by . . . dogs, . . . form a cordon round a certain tract of country until the game is driven into the nets'. Gardner (1854 in McBryde, 1978a: 240) affirms this by noting 'the tribes drove from the edge of the circle at a considerable distance . . . to one common point . . . where they had their nets set up'.

Satterthwait (1987), in his thorough and wide-ranging review of net hunting in Australia, has dubbed the large drives using nets, density-dependent net hunting, relying on drives or baits to concentrate the animal population. I will have more to say on density-dependent hunting below. He also describes two other net-hunting methods: locus-dependent and trajectory-dependent. For this region I have found no examples of locus-dependent hunting, in which use is made of a known animal location, such as a waterhole. There is an example of trajectory-dependent hunting, wherein knowledge of a known flight path or game trail leads to the positioning of a net across the route. McPherson (1978: 249), in what is an isolated reference, observes that '. . . the more usual plan adopted by the native to procure Australian venison is . . . to lay a net across the trail of a single animal'. McPherson is an excellent source and what she describes is no doubt correct. However, in view of the fact that she is the only one of a number of dependable sources to describe it I suggest it may not have been all that common or was restricted to the western fall of the tablelands and upper

western slopes. The advantage of this method of hunting, in contrast to the drives, was that it could be carried out by an individual acting alone.

Others (e.g. Altman, 1983) have observed that specialist items of technology are often owned by the manufacturer, usually an older, well-respected man. Little can be said on arrangements in this region as the sources are generally quiet on the issue. It has been noted already that women processed the raw materials, prepared the twine and actually wove the nets. This was no mean effort to judge from Satterthwait's figures: between 75 and 90 person days to produce approximately 8,000 metres of cord used in a net 18.3 x 12.2 metres in size, and 176 person hours to tie the estimated 89,000 knots.

But women were by no means the only ones to benefit from these investments nor did they necessarily control the produce derived from their labour. All accounts make it clear the whole tribe was involved in the drives in which these nets were used. Moreover, Radcliffe-Brown (1929: 402) recounts myths in which the women, children and dogs act as the beaters, while the men actually killed the animals once they were entangled or trapped. This division of labour was substantiated in the myth by noting that women were not strong enough to kill the animals once caught. It takes no great stretching of the imagination to believe that the task of distributing meat, and the attendant kudos and development of obligations and reciprocity, fell to the men.

One final and more specific point: neither Henderson (1851) or Hodgkinson (1845) nor other sources for the Macleay (see Campbell, V. 1978: table 1) refer to the use of nets in the hunting of macropods. This could be oversight, although the generally high quality of the sources rules against this. These were men who lived and worked, and in some cases travelled, with Aborigines practising a traditional economy. Moreover, elsewhere I have made the point that there were significant variations in material culture along the north coast (Godwin, 1988). It is conceivable, therefore, that nets were not employed in this area for the hunting of macropods. As I discuss below, however, this does not mean that these people did not engage in large drives: nets were not an indispensable element of such events.

#### 7.2.1.1.3 *Hunting of macropods by large-scale drives*

As we have already seen, large nets were most often used during large drives of macropods. Satterthwait's (1987) calculations demonstrate that use of nets in this fashion can result in significantly fewer people being needed to complete the encirclement of an area, or alternatively allow a larger area to be encircled than would otherwise be the case. However, there are a number

of descriptions of large drives in which no reference is made to the use of nets and we must therefore conclude that they were not an essential component for a successful drive.

Whether a net was used or not, the formula for a successful drive was probably the same. Hars (1939) provides a graphic account of one such drive in the Tenterfield area:

One section of the hunting party lined the northern side of the mountain up Hawkin's Gully, while another party travelled up the creek on the southern side. When the latter had got into their positions, they began the drive across the mountain towards their comrades on Hawkins Gully, who hid there awaiting the oncoming game, an enormous bag was obtained. The men were armed with nulla nullas, boomerangs, spears and waddies . . . One of the blacks, who was very friendly . . . killed three kangaroos and wallabies with his waddy which he threw with unerring aim. The blackfellows returned to camp literally weighed down with their hunt.

Henderson (1851: II: 127), Rudder (1925: 8-9), Burns (1844: III: 99) and Beilby (n.d. in Campbell, V. 1978) provide sufficient information to note that similar drives were organised on the middle and lower reaches of the Macleay. All describe groups of twenty men or more surrounding patches of rainforest or woodland, and driving the animals before them into a confined space where they were finished off with spears and clubs.

Henderson (1851: II: 127) also notes that dogs were sometimes used to help the hunters control the driving of the animals. Fire was also called upon to this end (Henderson, 1851: II: 127). McPherson (1978) similarly mentions the use of dogs in the drives on the tablelands and western slopes. There are no specific references to the use of fire to drive animals on the tablelands, but burning off of tracts of land was often undertaken with the express intention of improving pasture in a limited area, thereby attracting macropods to feed on it (chapter 2). As was seen in chapter 2, the effect of such burns has a marked impact on animal density with twice as many animals feeding on burnt patches as unburnt patches. Significantly higher numbers of animals were recorded on burnt patches for periods of up to 14 months after the fire event. No doubt the use of fire in this way, also mentioned by Henderson (1851: II: 127), would have proved useful in reducing the area to be surrounded for the drive. A large return was achieved by concentrating in a smaller area the resource available for exploitation.

The point has already been made that such drives involved considerable numbers of people. One could go as far as to say that without a sufficient labour force, driving would prove to be singularly unsuccessful method of hunting a highly mobile and agile prey. Unless the beaters are close together, and fully encircle the designated area, few animals will be driven into the hunters'

ambush. Animals are able to dart back through the line or escape to either side (P.J. Jarman, U.N.E. personal communication on drives undertaken to trap numbers of macropods for tagging programmes). My own experience of drives where grey kangaroos were being driven into a net for transference to another paddock was that animals were able to escape back through the line if people were much more than twenty metres apart. Bundock's (1978: 263) comment about the need for young men to be 'posted along the line to take up the running, and keep the terrified creatures going till they blundered into the nets' provides some inkling of the difficulties in such ventures and the need for a substantial number of people.

Although drives with as few as 20 men are recorded (Burns, 1844: III: 99), from comments made by Gardner, Ainsworth and others (section 7.2.1.1.2) it would seem that these large drives were associated with gatherings of groups from a wide area for ceremonial purposes, and that kangaroo meat was an important resource at such times. In support of this contention Gardner elsewhere observes that the major ceremonial centre of Burkenbandean, or Moore Creek, was chosen in part for the profusion of kangaroos round about (1854 in McBryde, 1978a: 243). Similarly, Hars (1939) mentions that Hawkin's Gully was an oft-used ceremonial location. It is probable that the drive he describes at this same place was organised while people were gathered for ceremonial events.

Drives of macropods with or without nets are versions of Satterthwait's density-dependent hunts. The presence of a resource which can be 'harvested' in this way is, as Satterthwait (1987) has noted, of considerable importance in the development of the patterns of long-distance movement, and exchange, discussed in the previous chapter:

An . . . advantage of density-dependent drives concerns the certainty of results. Large gatherings in which people from different places travelled some distance to meet at a common destination would have required assurance that food could be obtained in sufficient quantities to support the assembled population.

Density-dependent drives are one means of meeting these needs, provided a resource is available which can be manipulated in this way. On the tablelands and upper western slopes, where macropods were available in almost limitless numbers, this must have seemed a very attractive solution. It may not have been so important on the coastal fringe where the rich littoral and estuarine zones, as well as the luxuriant rainforest, would have offered a number of food resource available in profusion.

### 7.2.1.2 Possums

This animal was generally regarded as the most important faunal resource for Aborigines whether they were of the coast, gorges or tablelands. It was prized not just for its food value, but also because the skins were used in the manufacturing of cloaks found throughout the region (as were macropod skins [McPherson, 1978]). Henderson (1851: II: 127) described it as 'the staff of life' for the people of the middle reaches of the Macleay. Grey (1845: 26), a police magistrate at Port Macquarie, made a similar claim. Gardner (in McBryde, 1978a: 246) baldly states that 'the principal food of the various tribes of natives in the interior is the opossum'. McPherson (1978: 249) noted the possum was a 'more common article of food' than kangaroo meat. John Everett (1840) specifically mentions that in late autumn and early winter people travelled from his property to another location on the tablelands for the possum hunting. Bundock (1978: 263) observed that the process of cutting possums from trees must have been a taxing task with a stone axe, and that theft of steel tomahawks was a commonplace. The implication to be drawn from this is that possum was a desired and eagerly-sought item.

Both ring-tail and brush-tail possums were exploited, and they were hunted in various ways. One method was to find a tree exhibiting scratch marks, pointing to recent usage. The tree was climbed and the hollow limb in which the possum was hiding was cut open with a hatchet. When conditions were suitable (i.e. the animal was in a hollow tree) it was possible to smoke them out and dispatch them with a club.

Possum skins were traded because the soft, warm fur made excellent cloaks. These were used both along the coast, as well as the tablelands and western slopes. Bundock (1978: 262, 263) made mention of them, as do a number of others for the Richmond (see McBryde, 1978b: 191-2, table 3). Rudder (1925: 9) noted their use for this purpose on the Macleay. McPherson (1978: 251) similarly recorded the making of possum skin cloaks, while Wyndham (1889) mentioned their use during his travels with a group from the western slopes onto the tablelands in early spring.

Bundock (1978: 262) and McPherson (1978: 251) provide details of the manufacture of these cloaks from which it is possible to piece together a composite picture of the process. The following description is drawn from these two sources. (The method was probably similar for the kangaroo skin items that were also made - McPherson, 1978: 251). Firstly, the skin was carefully removed from the carcass. It was then scraped to remove any muscle or fat still adhering to the skin. It was then pegged out to dry. Once it had been dried it was then tanned and 'broken' by rubbing ashes and fat into it. When a sufficient number of skins had been collected and processed the skins were sewn together. Either a bone or wooden needle was used, and sometimes the men assisted in this task.

### 7.2.1.3 Other Faunal Resources

A wide variety of animals are mentioned as being exploited by Aborigines. Unfortunately, there are few details available on when or how they were exploited. Here I briefly note those animals cited in the various sources and any reference to the technology used. Table 7.1 provides details of the sources.

Bandicoots were caught both in the gorges and on the tablelands. The only details of their capture comes from Ainsworth (1922) who observed that they, along with other animals, were often caught during the drives through rainforest areas. No doubt this was also the case elsewhere. It is likely that they were also caught by individuals during other foraging activities. Rudder (1925) suggests they were a delicacy reserved for the elders of a group.

Flying foxes were caught in large numbers in the gorges and coast. They gathered to feed on the fruit trees in rainforest. Hodgkinson (1845) reported that these were favourite item of food for the people with whom he travelled. They were usually knocked from a tree with a club. There is no reference to their exploitation on the tablelands, though they may have been obtained during summer from the rainforest which fringes the eastern escarpment.

Reptiles are an oft-mentioned food. Both snakes and lizards contributed to the diet of both tableland and gorge country people. They would be dispatched with a blow from a club or stone axe. McPherson (1978: 250) noted that the Aborigines were very particular about snake meat, only eating it if they had killed the snake themselves. According to her, they did this because they believed the snake often bit itself as it was dying, thereby poisoning the flesh and rendering it inedible. Rudder (1925) commented that some lizards were considered a delicacy that was given to group elders, but no one else makes this point.

All manner of birds were eaten: bustards, emus, all waterfowl, and smaller birds as well. A variety of techniques were utilised to catch them. On the tablelands emus and bustards were speared from brush hides. They were also caught using the natural curiosity of these birds to lure and snare them. Emus were also hunted in the gorges but bustards were not available. Instead, brush turkeys were caught in the patches of rainforest which dotted the area. Wood pigeon, quail and other small birds were captured using snares. These snares were small lengths of grass string fashioned into a draw cord. The looped end was laid on the track or nest, and drawn tight when the bird stepped in it.

Given the rivers, creeks, swamps, lagoons and marshes which were common both in the gorges and across the tablelands, it is not surprising that waterfowl are a commonly-mentioned food source. Methods of capture were many and varied. They were knocked down using boomerangs and waddies by hunters placed in hides along the banks of watercourses. Good swimmers would also dive under birds and pull them under. Rudder (1925: 13) mentioned that the birds were sometimes driven down a watercourse and caught in snares. I am not sure what to make of this reference but it is possible that he meant nets were strung across the birds' path and in which they became entangled.

Fish were caught in the gorge country and in the western fall of the tablelands. They were not available on the tablelands proper. McPherson (1978: 250-1) notes that large fish of various species were speared using a simple light spear. She also mentions the use of nets but implies that these were not used in her district. There are numerous references to fishing on the Macleay, but few make it clear if they are referring to the littoral, estuarine or riparian zones. Four-pronged fishing spears were used, with bone or kangaroo incisor points.

Other techniques were also employed. Henderson (1851: II: 136) reported that stone weirs were constructed in the upper Macleay river during droughts or river lows (Bundock describes something similar in the upper Richmond, but using nets rather than stone for the trap). Beilby recorded the use of brush traps in small creeks, along with 'smart-weed' to stupify the fish and make them easier to catch. Tow-rows (butterfly nets) were also used to scoop fish from the shallows, but these appear to have been mainly used on the coast and estuaries.

On the tablelands and in the eastern-flowing rivers, eels could be obtained. Henderson (1851) noted that they were caught at nightfall and killed with a club. This suggests that, using a lighted brand, the eels were lured close by, and then dispatched by a blow to the head from a club, much as commercial eeling is undertaken nowadays. It is also possible that large numbers of eels could be collected during drier months or droughts when the smaller lagoons and marshes of the tablelands would dry out, something documented historically on the Llangothlin lagoons albeit for Europeans (I. Davidson, personal communication).

Freshwater crayfish were also exploited. Wyndham (1890) described crayfish of a very large size being dug from the swamps and lagoons of the tablelands with digging sticks. McPherson (1978) also mentioned crayfish were available in abundance, but observed that they were small, likening them to prawns.

animal	source: gorges and tableland	source: elsewhere in northern NSW	comments
bandicoot	Henderson, 1851: 134 Rudder, 1925: 9	Ainsworth, 1922: 17-8 Bundock 1978: 263	delicacy reserved for elders caught during drives of rainforest - large numbers, group activity
flying foxes	Henderson, 1851:II:183 Hodgkinson 1845: 222	Bundock, 1978 Ainsworth, 1922: 17	blacks are fonder of these than any other animal knocked from tree with club
reptiles	Hodgkinson, 1845: 223 Henderson, 1851:II:134 Rudder, 1925: 9 Norton, 1907 McPherson, 1978	numerous, see Sullivan, 1964	killed with blow to top of head
insect larvae	McPherson, 1978: 250 Norton, 1907 Hodgkinson, 1845:224-5	Bundock, 1978: 262	taken from apple gums larvae of wood moth -delicacy eaten raw delicacy-roasted then eaten
honey	Wyndham, 1889:39 McPherson, 1978: 253  Henderson, 1851: II: 139	Fry, 1842	lived on girroo honey describes attaching down to bee to follow it  honey important, sometimes a group activity
emus	Norton, 1907 McPherson, 1978:250 Gardner, 1854 Henderson, 1851: II 136		use of hides to spear or club

Table 7.1: References to animals hunted by Aboriginal people in northeastern N.S.W.

bustards	Norton, 1907 McPherson, 1978: 250		use of lure or snare
brush turkeys	Henderson, 1851: II: 136 Hodgkinson, 1845: 225	Bray, 1901	
various small birds	McPherson, 1978: 250		use of snares
water fowl	McPherson, 1978: 250  Gardner, 1854 McMaugh, 1931: 13 Beilby, n.d. Rudder, 1925: 13	Bundock, 1978 Flick, 1934	hunters in hides would throw boomerangs and waddies to kill birds  killed with boomerangs driven down waterway and caught in ?net killed with boomerang
fish	McPherson, 1978: 250-1 Gardner, 1854 Henderson, 1851: II: 136  Beilby, n.d.  Hodgkinson, 1845: 223		speared, nets used further west  4 prong fish spear tipped with bone or kangaroo incisors stone weirs constructed up-river during droughts brush traps built in small creeks speared from banks and mudflats
eels	Marsh, 1867: 64 Henderson, 1851: II 136  Hodgkinson, 1845: 223		eels collected from rivers caught at nightfall and killed with club
crayfish	Wyndham, 1890: 114  McPherson, 1978: 251		dug from swamps with digging stick abundant but size of prawns

Table 7.1: References to animals hunted by Aboriginal people in northern N.S.W.

The food potential of various insects was not overlooked. Honey from the native bee, of course, was collected whenever possible. Elaborate methods of tracking bees to their hives were employed (McPherson, 1978: 253; see also Bundock, 1978). Wyndham (1889: 39) claimed that during spring 'girroo', honey made from the blossom of the grass tree was an important resource in the western fall of the tablelands. Individuals would sometimes go off to collect it by themselves, but collecting this food was also a group activity.

Another food of which tableland people apparently were very fond was the larvae of various insects. Norton (1907) described them as a delicacy. Hodgkinson (1845) referred to them for the Macleay but makes no comment other than to note they were eaten raw: elsewhere there are references to them being roasted (Bundock, 1978).

#### 7.2.1.4 Seasonality

It can be seen that a wide variety of faunal resources was exploited on the tablelands and in the gorge country. Our sources provide few guides as to the seasonal availability/use of most of these foods. We can, however, make a few observations on the basis of animal ecology and what is available in the sources.

Kangaroos and possums are available throughout the year and alter their behaviour little on a seasonal basis. However, the quality of their skins does change markedly, and this is a factor that must be considered as this was an important reason for their exploitation. Pelts for both kangaroos and possums are at their best during the winter months when the animal has a thick, long and soft fur. Thus, it would make sense to hunt them for this purpose during the cold months. Indeed, one observer (Everett, 1840) specifically noted that groups were moving to hunt possums during this season.

Most other marsupials could have been exploited throughout the year, as could emus and bustards. Waterfowl would have varied in availability, being more plentiful during the wetter months, and all but disappearing during long droughts.

Honey and insect larvae were available during the spring and summer months. Fish would vary depending on the species and seasonal conditions. However, some species of fish would have been available throughout the year. Crayfish, too, were available throughout the year as were eels. Reptiles would have been in their prime during the summer and autumn months, while building up stores of fat to hibernate.

### 7.2.2 Plant Resources of the Gorge Country

Though early European settlers may have found the pursuits of the chase a more interesting subject for description they were certainly aware of the importance of plant foods in Aboriginal subsistence. Of course, because the majority of them were men who probably saw little of women's activities, and perhaps because their own perception was of these people as hunters of animals rather than collectors of plants, they have certainly underrepresented the variety of plant foods eaten, if not their dietary contribution. In the following discussion I have utilised the primary sources, but have also drawn on Cubis' (1977) very useful summary of the data. I have avoided merely compiling a list of edible plants available in the region so as not to convey the false notion that all available edible plant were eaten. Of course, ethnographic sources everywhere show that people have knowledge of many more plants than they habitually use. These 'emergency foods' are probably grossly underrepresented in the primary sources used here.

The sources for the Macleay alone list only ten plant foods. These are listed in table 7.2. Plant foods recorded as eaten elsewhere on the north coast are listed in Cubis (1977) and Sullivan (1964). Including the items listed in these sources in the count provides an all-up figure of 15 roots, vegetables, fruits and seeds. (It should be noted that I have excluded any unspecific reference which does not allow determination of species). These tables must surely represent only the tip of the iceberg as far as edible plants are concerned. The simple fact, however, that these plant foods were recorded as eaten may perhaps be taken as an indication that they were those most commonly exploited.

There are no great surprises in the plants that are listed. Tubers and roots are well represented: yams (*D. transversa*), bracken fern root (*P. esculentum*), and swamp root or bulrush (*Typha* sp.) are all mentioned a number of times. These were dug out with digging sticks or pointed nullas. Yams were roasted in fires with little preparation, but bracken fern and typha were pounded to break up the stringy root fibre and reducing them to a paste which was then baked. Fruits and berries are also included: native cherry (*E. cupressiformus*), native grape (*C. hypoglauca*) and figs (*Ficus* sp.) are all mentioned. Few required any special tools to either obtain or process them. Digging sticks were all that was needed to obtain roots and tubers, and all other plants could be collected by hand. Pebbles would have sufficed for any pounding that was occasionally needed.

There is no mention of special processing of 'burrawong' (*Macrozamia spiralis*) in either McMaugh (1931) or Simpson (1956). This could have been an oversight or it could be that people exploited naturally-leached kernels (Beck, 1985). The detailed descriptions recorded for cunjevoi (*C. macrorrhiza*) demonstrate that the Aborigines of this region knew the sophisticated leaching

Scientific name	Common name	Source	Comment
<i>Dioscorea transversa</i>	yam	Henderson, 1851: II: 141 Hodgkinson, 1845: 225 Rudder, 1925: 13	dug out of alluvial flats and rainforest with digging sticks and roasted on fire
<i>Alocasia macrorrhizza</i>	conjevoi	Henderson, 1851: II: 142-3 Rudder, 1925:13 Hodgkinson, 1845: 225	intensively treated prior to consumption
<i>Livistona australis</i>	Cabbage tree palm	Hodgkinson, 1845: 226	pulp at base of fronds eaten
<i>Ptychosperma elegans</i>	Bangalow palm	Hodgkinson, 1845	
<i>Macrozamia spiralis</i>	burrawang	McMaugh, 1931: 2	no mention of treatment prior to consumption
<i>Pteridium esculentum</i>	bracken fern	Hodgkinson, 1845: 225	rhizomes beaten into a paste, then roasted in hot coals of fire
<i>Typha augustifolia</i>	swamp root	Hodgkinson, 1845: 225 Rudder 1925: 13	edible roots obtained from plants growing in swamps
<i>Ficus sp.</i>	figs	Hodgkinson, 1845: 33 Henderson, 1851: II: 234	fruits eaten fresh
	rubber tree	Hodgkinson, 1845: 226	fruit eaten
<i>Achras australis</i>	native apple	Henderson, 1851: II: 234	fruit eaten fresh

Table 7.2: Plant foods collected in the Macleay valley

techniques necessary to render such plants safe for human consumption. This plant went through a series of stages for processing before it could be eaten. Three processes have been described:

1. Henderson (1851: II: 142-3) noted that the roots were collected, slightly roasted and then pounded. This treatment was repeated over a couple of days before being eaten.
2. Hodgkinson (1845: 225) reported that the roots were simply pounded between two flat stones until the juice was removed.
3. Rudder (1925: 13) described the plant being soaked in running water for two to three weeks, then pounded into a paste and baked in ashes.

It is impossible to ascertain which of these three was the most common, but it is possible that levels of toxins fluctuated on a seasonal basis and different treatments were used in response to these varying levels.

The majority of the plants listed in these tables would have been available in the gorge system, though their quantities and distribution may have been more limited than closer to the coast. This would certainly have been the case with the rainforest species. Yams and cunjevoi, too, would have been available only on the fertile alluvial flats found in the meanders of the rivers. Some species, however, would have been entirely absent from upriver areas. In this category are Cabbage tree and Bangalow palms as well as Macrozamia.

Seasonal availability of these plants varies (see figure 7.1). All are available during the summer months. As the seasons turn to autumn and winter the numbers continue to decrease. By July through October, only 30% of these edible plants are available. Some of those available are very close to the end of their edible phase (e.g. yams - the tuber would be small and stringy by late winter), or are only available close to the coast (e.g. Bangalow and Cabbage Tree palms and pandanus).

Examining Cubis' data (1977: appendix 1, tables 1-8) for all edible plants in coastal and sub-coastal areas a similar pattern emerges. Slightly less than 30% of edible plants are available for 2 months or more, or commence the edible phase of their cycle (e.g. tuber production, seed-setting or fruiting) over the period July through October. With the exception of yams, which are unlikely to be of high quality, none of the major carbohydrate sources are available.

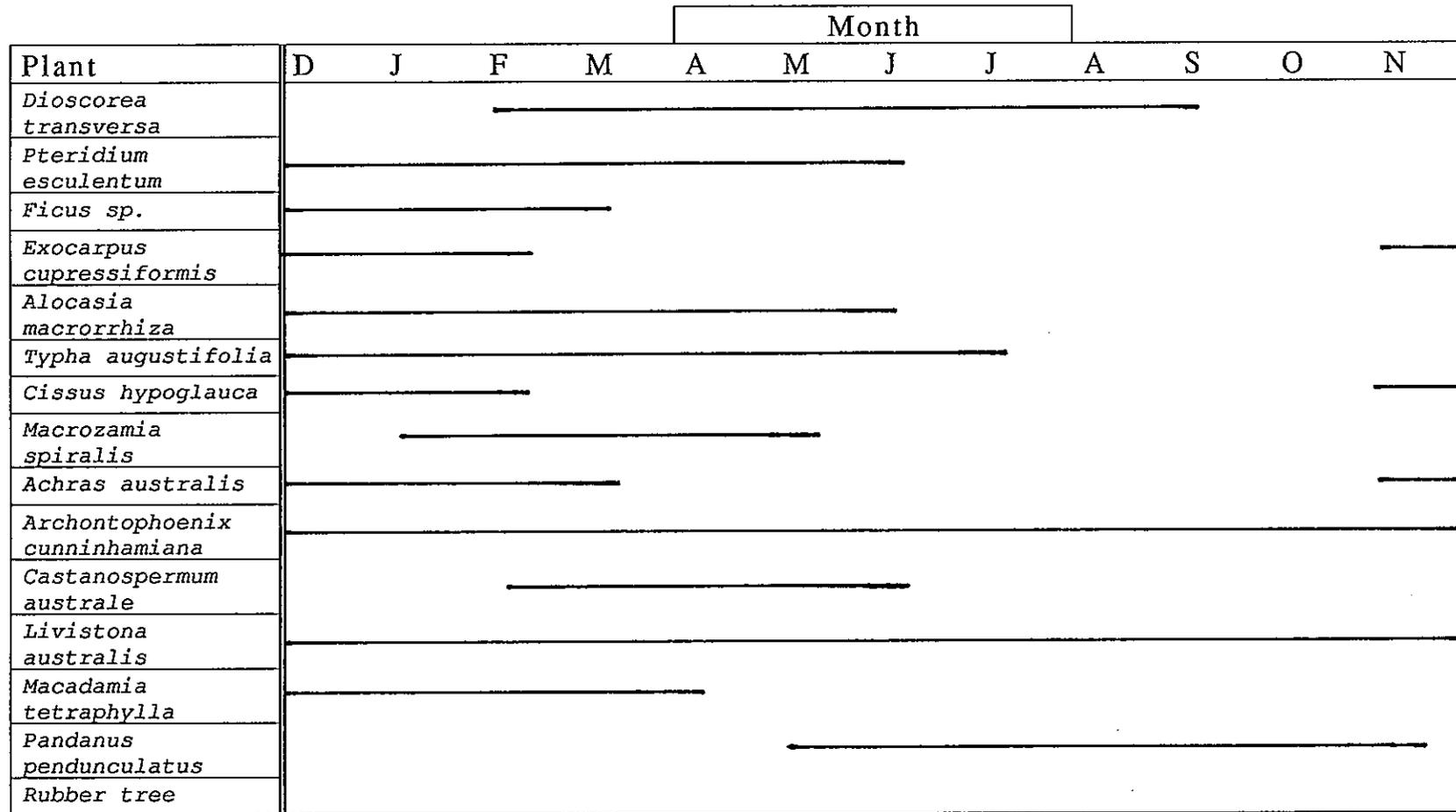


Figure 7.1: Seasonal availability of plant foods on the north coast and gorge country, northern NSW

### 7.2.3 Plant Resources of the Tablelands

References to plant exploitation on the tablelands are as sparse as those for the coast. Ethnographic sources for this region list a total of fourteen species of plant foods (though there are a few general mentions of 'fruits' and tubers - e.g. McPherson, 1978: 214). These are listed in table 7.3. Again, this represents only a small proportion of the edible plants available: Cubis (1977: appendix 2, tables 1-5) lists more than 50 edible plants. The plants which were definitely exploited are an interesting mix of some carbohydrate-rich varieties, different fruits, two legumes and a starchy extrusion from a eucalypt species. None of these plants required sophisticated processing/leaching technology. As was the case in the gorges, digging sticks and pebbles were all that was needed to harvest or process the plant foods.

Turning to the carbohydrate providers, we find Gardner (1854) describing four different types of 'yam':

- 'opia' a tuber 5 cms in diameter which was roasted;
- 'panda' and 'thambougi' which were collected from the swamps and marshes;
- 'elonga' which was available in the rocky hills.

Judging from the description Gardner provides, the first of these is probably *D. transversa*, the true yam. The others to which he refers are probably rhizome or root plants such as *Typha* and bracken ferns, rather than tubers. Bowdler (1981) has suggested that the 'elonga' Gardner describes might be the daisy yam (*M. scapigera*), which she thought to be common. It appears, however, she has confused the flower of this plant with another, *Hypochoeris radicata*, the flatweed which has invaded the tablelands very rapidly and now is the common yellow daisy seen throughout the tablelands (L. Cameron, personal communication). Daisy yams are certainly present on the tablelands but not in the quantities Bowdler believed (L. Cameron, pers comm). Another possibility for 'elonga' is bracken fern (*P. esculentum*). McPherson (1978: 251) is not very helpful in clarifying the situation as she simply noted that 'roots of various kinds are to be met with everywhere', suggesting that a number of different species were commonly exploited.

A number of sources (e.g. McPherson, 1978: 251; Gardner, in McBryde 1978a: 246; Wyndham, 1890: 117) refer to the use of grass seeds, ground into a paste and then baked into a bread. These relate primarily to the western slopes rather than the tablelands: the relevant species of grass do not grow on the tablelands in any quantity, nor are there any examples of seed-grinding equipment recorded anywhere on the tablelands. All the other plants they mention do occur either in the woodland/forests or swamps of the tablelands.

Scientific name	Common name	Source	Comments
<i>Boerhiva diffusa</i>	tartar, towtar	Wyndham, 1890: 118, Howell, n.d.	creeper, large quantities baked or steamed
<i>Brachychiton populneum</i>	kurrajong	Gardner, 1854	seeds eaten, root eaten, bark used for nets
<i>Acacia sp.</i>	wattle	McPherson, 1978: 253	gum eaten
<i>Capparis mitchelli</i>	native orange, native pomegranate	Wyndham, 1890: 118	fruit eaten
<i>Cissus hypoglauca</i>	native grape	Gardner, 1854: 1: 148	fruit eaten
<i>Dioscorea transversa</i>	yam	Gardner, 1854 Wyndham 1890: 117 McPherson, 1978: 251	tuber collected and eaten
<i>Eustruphus augustifolius</i>		Wyndham, 1890: 118	seeds roasted and eaten
<i>Exocarpus cupressiformis</i>	native cherry	Gardner, 1854: II: 257	fruit eaten
<i>Ficus sp.</i>	fig	Bates, 1939: 18	fruit eaten
<i>Glycine tabacina</i>	goonerang, glycine pea	Wyndham, 1890: 118	root collected, fibre removed, eaten in large quantities
<i>Eucalyptus viminalis</i>	manna	Gardner, 1854: II: 257 McPherson, 1978: 253 Calvert, 1847: 44	sweet starchy extrusion collected in large quantities
<i>Phaseolis truxilleusis</i>	koomine bean	Wyndham, 1890: 118	root collected and eaten
<i>Typha sp.</i>	typha	Gardner, 1854	possibly identified as a swamp yam

Table 7.3: References to plant foods eaten on the New England Tablelands

One plant food which was available on the tablelands in large amounts was 'manna'. Gardner (1854), McPherson (1978: 253) and Calvert (1847: 44) mention this as a eagerly sought and, during some seasons in some localities, an abundant food. Calvert made the following observation:

During the dry weather of the spring and summer months, Manna falls from the trees on the ridge of the Great Northern Range in New England, and under the red, the white and the mottley or speckled gum tree, on the Bundarra country which is much lower and the climate warmer as also in the Byron Plains. Manna may be gathered in other places, the pieces however are much smaller, and the quantities less than is to be found on the range of New England.

This food was a sweet starchy exudation from various species of gums, but primarily *E. viminalis*, otherwise known as the manna gum (Gilbert, 1965: appendix III). Exudation takes place after insect attack and could on occasion be so heavy that 'several pounds could be collected by one person in a few minutes' (quoted in Gilbert, 1965: appendix III). Because of its mildly purgative effect, however, it is unlikely that it could have been eaten in large quantities unless a natural immunity was developed to its medicinal properties. That it was a resource which figured in Aboriginal perceptions of the environment can be seen from their name for the Glencoe area, near Glen Innes. They called it 'Horra-will', meaning 'plenty of manna gum' (Walker, 1966: 10).

Various fruits and seeds were eaten. Gardner recorded that kurrajong seeds were collected and eaten. The corm of this tree is also edible and was dug up and eaten by Aborigines. Waterloo and Ilparran, just to the west of Glen Innes, were known as 'Ill-pah' meaning 'the place of many wild raspberries' (McPherson, 1904). The nectar of *Banksia* and *Hakea* species was collected during January and February. Native orange or native pomegranate (*C. mitchelli*) was also eaten as was native cherry (*E. cupressiformis*), native grape (*C. hypoglauca*), and figs. These were all collected during the summer months. As resources they would have been scattered through the woodland areas and served as a supplement to the stock diet rather than making a sizeable contribution in calorific terms.

Two legumes were eaten in large quantities, according to Wyndham (1890:118). 'Towtar' (*B. diffusa*), was a creeping vine which was collected from flats along watercourses and baked or steamed (see also Howell, n.d.: 36). The extremely fibrous root of 'goonerang' or glycine pea (*G. tabacina*) required processing to remove the fibre before it could be eaten.

The seasonal availability of these plants is shown in figure 7.2. It can be seen that, as was the case in the gorge country, there is a marked hiatus in availability of edible plants in the winter and spring months. None of the plants which could be thought to act as staples (e.g. yams or typha) are

Plant	Month											
	D	J	F	M	A	M	J	J	A	S	O	N
<i>B. diffusa</i>	_____											
<i>B. populneum</i>	_____											
<i>Acacia sp.</i>	_____											
<i>C. mitchelli</i>	_____											
<i>C. hypoglauca</i>	_____											
<i>D. transversa</i>	_____											
<i>E. augustifolius</i>	_____											
<i>E. cupressiformis</i>	_____											
<i>Ficus sp.</i>	_____											
<i>G. tabacina</i>	_____											
<i>E. viminalis</i>	_____											
<i>P. truxilleusis</i>	_____											
<i>Typha sp.</i>	_____											

Figure 7.2: Seasonal availability of plant foods on the New England Tablelands

available during these seasons. The pattern remains consistent when one examines data on seasonality for all edible plants on the tablelands (Cubis, 1977: appendix 2, tables 1-5). More than 70% of plants are at the end of their edible phase early in the winter months. Only a few commence their edible phase in either August, September or October.

### 7.3 A MODEL OF THE PREHISTORIC ABORIGINAL EXPLOITATION OF THE REGION

In the discussion above, and in the preceding two chapters, I have considered four main issues: what was the form of social organisation in the region under review, how did people distribute themselves across the landscape and in so doing relate to others, what food resources did they exploit, and what technology was employed in utilising these resources. Here I wish to draw these different threads together into a model of Aboriginal exploitation for the tablelands and gorge country. All substantiating material is included in chapters 2, 3, 5, 6 and sections 7.1 and 7.2 of this chapter.

#### 7.3.1 The Gorges and Coastal Zone

At the time of earliest written accounts there were two clan groups the Nulla-Nulla and the Conderang, perhaps numbering 200 hundred in total, who could lay claim to the gorge country of the Macleay, though people from other clans probably travelled through on occasion. For the greater part of the year people from these groups operated as members of small bands fluctuating between 10 and 20 people in size. The composition of these groups may have changed over the course of the year but there would have been a core membership of clan members.

Hodgkinson and Henderson make the point that groups in the lower Macleay had access to a range of environmental zones in their territory, providing the requisite variety to allow them to maintain themselves without recourse to the territory of another group. Such is unlikely to have been the case in the gorges, where resources tend to be restricted to a corridor less than 1 km wide along the narrow valley floor. Consequently, the gorge clans had custodianship of this area, but probably ranged extensively from the coastal plain back through the gorges to the tablelands in summer (and retreating from there as autumn advanced). This required gorge clans to maintain good relations with the other clans in whose territory they sometimes hunted and gathered. The two gorge clans may well have gained access to resources in the lower Macleay by their ability to control movement to and from the tablelands, as the gorge floors constitute the only practicable route there. By way of analogy, von Sturmer (1978) has shown that control of such thoroughfares was extremely important in western Cape York. Although the gorges were used throughout the year, it is probable that they were only exploited by groups making short forays into them, or in transit to and from the tablelands. That is, the gorges were not exploited intensively for any protracted period of time by

large groups of people. There is, therefore, little probability that the gorges were used for ceremonial gatherings of any size.

While dispersed in small bands, people gathered and processed the various plant foods available to them, requiring a very simple toolkit consisting of digging sticks, net bags and river pebbles. Animals, particularly possums and macropods, were hunted with stone hatchets, wooden clubs and composite spears with stone barbs. It is possible that during the winter and early spring months animal products assumed a dominant position in the diet of sub-coastal and gorge groups because of the lack of any plant resource which could be collected in large amounts at that time. This emphasis on meat is not implausible. For instance, Altman (1987) has shown that meat played a far larger part in the diet of Arnhem Land groups in recent times than has been previously supposed. A well-developed and effective technology for hunting would, therefore, have been essential. During droughts the users of the gorges were able to build small stone fishing weirs in the up-river shallows.

It is important to note that the gorge groups were definitely part of the coastal zone sphere of interaction. On the whole, this zone showed considerable flux in the relations between groups. It was very much a pattern of fission and fusion between various clans. This was also the case at the tribal level. Groups quickly erected social barriers between themselves, but these were just as quickly overcome. It appears, however, that relations between themselves and the people of the tablelands and western slopes had suffered a longterm breakdown, but did not prevent sub-coastal groups travelling to the tablelands.

### 7.3.2 The Tablelands

The tablelands were occupied throughout the year by bands of people from the three main languages present. These bands were composed of between 15 and 25 individuals, and moved frequently, as would be expected due to the relatively fine-grained nature of resources in this region. Bands ranged widely over the tablelands and the upper western slopes, and occasionally into the gorge country. The tablelands, however, were not abandoned at any time of the year.

Both natural and artificial concentrations of resources (e.g. swamps/lagoons and fired clearings in woodlands) were exploited where and when available. Plant resources, including a number of carbohydrate-rich varieties, could be gathered from the forest/woodland and swamps, and prepared, using a simple toolkit comprising digging stick, bags of plant fibre, and pebbles to pound some substances to a paste. As with the gorge country, meat may have been the major component of the diet during the winter and spring months. Apart from this, possums and macropods were hunted at this time because of the quality of their fur for rug manufacture. Hunting of animals would have

been an activity undertaken in the woodlands that clothed the tablelands. It would have required a well-developed hunting toolkit, including composite implements such as spears with barbs (possibly made of stone) and stone hatchets, as well as hunting nets. The wetlands/swamps would have teemed with waterfowl, crayfish, and eels or fish. These would have been procured in the main either with simple implements such as the digging stick or by hand. It is possible that nets might have been used in some circumstances.

Large gatherings of people occurred at certain key locations on the tablelands and the western slopes. These were attended by people from the tablelands and the western slopes, and were sometimes held during the winter months. Tableland groups also travelled to the western slopes during the summer months. However, the seasonal aspect should not be overstressed: the data are not conclusive on this point. Animal drives involving large numbers of people were organised at such times, and nets were often employed in this activity. Tableland and western slope people exchanged material goods as well as rituals during such gatherings.

The extreme divergence of tableland languages, in particular Nganjaywana, suggests a period of extreme social isolation between people of the tablelands and other groups, including those groups who originally shared the parent language (i.e. coastal Dhan-gadi speakers). The use of some Gamilaraay words in the tableland languages indicates this isolation was followed more recently by contact between tableland people and groups to the west. The lesser degree of dialectal development that has taken place on the tablelands and the western slopes suggests that social arrangements may have been more stable here than on the coast. This may in part be due to lower population densities, but it also indicates that good relations, once established, were not quickly broken. Whatever the state of relations between themselves and the people of the western slopes, the tableland groups had continuing poor relations with their coastal neighbours.

#### 7.4 ARCHAEOLOGICAL EXPECTATIONS

Generally, the behaviour of groups in the gorges and on the tablelands bears some relationship to Binford's (1977, 1980) model of foragers mapping on to resources, as discussed in chapter 6. Obviously, there are also clear examples of logistically organised elements in the tableland economy, namely in the large animal drives and facilities used in association with these. In what follows I have chosen to cast some of my observations concerning the form of the archaeological record using concepts developed by Binford to describe these different subsistence strategies. This in no way should be taken as meaning I embrace the environmentally deterministic aspects of Binford's formulation of this concept (see Wiessner, 1982 for a detailed critique of Binford on this point). However, Binford's clear and testable predictions of the form of the archaeological record deriving

from these different strategies makes it an extremely useful model for describing regional settlement patterns.

In the discussion which follows, I suggest that the stone artefact assemblages of this region will throw light on the settlement pattern and levels of residential mobility of its prehistoric inhabitants. Recently, Hiscock (1984; 1986b; 1988; 1989) has presented a detailed analysis of open site data from northwestern Queensland. He has shown that there is a definite relationship between availability of stone and the degree of rationing behaviour to be seen on sites as distance from stone source increases. Amount of raw material and size of artefacts decreases, while application of techniques to conserve, and extend the period of use of, a particular raw material increases with distance from source. Hiscock has argued that such economising behaviour in the use of stone will be adopted irrespective of settlement or subsistence strategy, and that any patterns in stone artefact assemblages will merely reflect rationing. As a result, he posits it will not be possible to reconstruct settlement or movement patterns using such data.

Hiscock's data is clearcut, and there can be no doubt that in his study area there is a definite trend for increasing economy in stone use as distance increases. I question, however, the conclusion that it is impossible to use stone artefacts to examine questions of settlement and movement. A closer consideration of the hierarchy of tactics and strategies may prove useful in understanding the relationship between artefact assemblages and settlement patterns. Tactics are procedures designed to gain an end, and manufacture of stone is one element of the tactics of exploitation. Strategies (such as settlement patterns) are the overall aims or objectives. It is possible to have logistically-organised tactics (such as the procurement and use of stone) in a foraging strategy, and the reverse may also apply. The strategy, or the approach that is taken to exploit the entire area, will have as profound an effect on the assemblage as the tactics for obtaining and using a particular resource, will determine the manner in which stone is treated.

In circumstances where stone played a major role in a logistically-based strategy we might expect patterns which do not accord with expectations of normal economising behaviour as distance from source increases. Consider, for example, a coarse-grained environment in which stone and other resources (water and food) are located in discrete parts of the landscape. A decision must be made whether to situate oneself on either the source of stone or the food/water source. Whether located on one or the other discrete resource, special activity groups must be sent out to obtain the other essential but distant resources. The land in between represents a corridor that must be quickly traversed to gain access these resources. We might not expect there to be much discard in such corridors, and with the exception of the quarry itself, greatest level of discard would occur in the

basecamps on which exploitation of food resources is centred. The greatest amount of rationing might well be found on sites which represent outliers from base camps for food exploitation but which are closer to the quarry than they are to the base.

I would suggest that normal rationing curves for stone artefacts results from the conjunction of four factors: a fine-grained environment for food, water and other critical resources, the coarse-grained distribution of preferred stone resources, and a foraging settlement/subsistence strategy in which people occupied a large tract of country for an extended period of time. Variation of assemblages from expected rationing curves should at least alert us to the possibility that either stone is not a coarse-grained resource, that the environment generally is not fine-grained, that a foraging strategy of moving across the environment to map onto resources has not been adopted, or that the area was not central to subsistence requirements. Examination of stone artefact assemblages can, therefore, provide some guidance to the settlement and subsistence strategy adopted by prehistoric people. I examine this proposition further in chapters 10 and 11.

In each of the following sections I first consider what the archaeological record will look like in the two areas selected for intensive archaeological survey. I then consider what patterns might be expected in the larger sphere of region-wide group interaction.

#### 7.4.1 The Gorges

The pattern of the archaeological record in the gorges is relatively simple. It demonstrates, in accordance with the model, a clear application of foraging strategy in an area which represents a corridor between two major resource areas. There is little evidence of re-use of particular sites: few sites demonstrate a palimpsest of activities from revisiting. Sites show considerable redundancy of form: there will be little, if any, functional variation between sites. This will stem from the fact that there will not be any logistically organised behaviour to obtain or use resources which are either scarce or restricted in distribution, or to support large-scale ceremonial gatherings. We can expect the toolkit to have a high degree of expedience. I would predict that because the gorges are not a major resource area but instead are used as a corridor for rapid transit between the tablelands and coastal hinterland, it is unlikely that the use of stone will display clear evidence of rationing behaviour. Rather, even relatively good quality, but discretely-distributed, stone will have been used in an expedient fashion by people who expect to have more good-quality stone available at either end of their passage through this corridor, and therefore see no need to husband what they obtain in the gorges.

Interaction and alliance between groups of the coastal zone presents a complex situation. As we have seen, in the short term, there was considerable fission and political realignment between groups, and attempts to define clear differences between clans. In the long term, however, these were overridden by maintenance of ties between groups of the same language, and between groups from different tribes. The archaeological record will reflect both these situations. In chapter 1 I discussed more fully the importance of style in material culture as a means of maintaining or emphasising relations between groups. Here, it is sufficient to note that we can expect the rock art of the coastal zone to demonstrate the duality mentioned above. There will be a few general styles covering the region representing the larger social groupings. By and large, these will centre on the three main river systems: the Richmond, Clarence and Macleay. There will not, however, be hard and fast boundaries between them, reflecting the interaction between groups from these valleys, and indirectly the sharing of elements of social organisation and ideology. Within any one stylistic regime we can predict there will be attempts to assert group separateness or autonomy. This may be done either by the use of a limited range of motifs or by adoption of a particular technique to render the art. The patrilineality and patrilocality of coastal groups may have played some part in the art displaying some heterogeneous tendencies as this would have restricted outside influences. Lithic material, the most durable element within the archaeological record, and commonly exchanged by groups, will show patterns of interaction between many groups of the coastal zone. With current level of refinement in the study of exchange systems in this region, it will demonstrate a rather homogenous pattern of social intercourse between people in the hinterland and the coast, as well as between one river valley and the next. Further work and greater definition in the archaeological record may make it possible to investigate breaks in exchange of material between particular areas. It is important to note that there should be a distinct boundary between the coastal zone and the tablelands/western slopes zone, expressing the extremely limited and poor contact, and definite social barrier, that seems to have existed between groups of these two zones for some time prior to contact.

#### **7.4.2 The Tablelands**

Some aspects the archaeological record of the tablelands will be similar to that of the gorge country. The Aborigines of this area also practised a foraging mode of subsistence, hence we are likely to find a large number of functionally redundant sites. In chapter 2, I presented data demonstrating that food and water resources on the tablelands were fine-grained in their distribution, while good-quality stone was a more coarsely distributed resource. I have also argued that the tablelands represented a major resource zone, rather than a transit corridor such as the gorges, and that people lived there for extended periods of time. Consequently, unlike the gorges,

## CHAPTER 8

## AXES, ART AND CEREMONIES: THE ARCHAEOLOGY OF GROUP INTERACTION

## 8.1 INTRODUCTION

In chapter 7, I offered series of observations about the patterns discernible in distribution of exotic raw materials and artistic styles in the region. In this chapter I review the pertinent archaeological data. The first section of the chapter summarises the results of Binns and McBryde's (1972) pioneering work on the use of thin-section analysis to define exchange networks of, in this case, ground-edge axes. It also includes the results of thin-sectioning of axes collected more recently on the tablelands and gorges by myself and others. In the next section of the chapter I review the results of recent analyses of art sites both from the coast and tablelands/western slopes. Finally I examine the distribution of ceremonial sites across the tablelands. It is clear that these data support the model of interaction I offer, in which the tablelands stands as a marchland between two large networks, one based on the coastal people and the other centring on the tableland and western slope groups. It is also shown that there appear to be definite ceremonial centres on the tablelands and the western slopes.

The information presented in this chapter is largely a distillation and synthesis of many years of research by McBryde and others. To date, however, this data has been collected in a rather *ad hoc* fashion, and its implications have been little considered. Bowdler (1981a), for instance, while making cursory reference to apparently large numbers of sites on the tablelands, did not consider the actual pattern of distribution of ceremonial sites. Nor did she examine the evidence of art styles or exchange networks to see if they correlated with the model of movement and interaction she offered. McBryde, too, collected her data in something of a theoretical vacuum. My review represents the first integration of all this information into a cohesive model of regional interaction. It is a testament to the quality of the preceding ground work that I am able to attempt this task.

## 8.2 SOURCING OF GROUND-EDGE AXES

As an adjunct to her excavation program, McBryde considered that there was potential to explore the distribution of ground-edge artefacts in relation to their source by detailed examination of their lithology. With the collaboration of Ray Binns, a professional geologist who had undertaken considerable work on the New England Tablelands, she initiated a program of sourcing a large sample of ground-edge. Sourcing was undertaken in three ways: macroscopic inspection, hand inspection using magnification, and microscopic analysis of thin-sections. More than 500 items of known provenance, either from the coast, tablelands or western

slopes were examined, the great majority of which came from museum collections. The results were published as a monograph in the early 1970's (Binns and McBryde, 1972).

The program was a great success on two counts. Firstly, Binns and McBryde were able to describe the extent of distribution of axes from known quarries: Moore Creek, near Tamworth, and Salisbury Court, near Uralla. In the first case, there was extremely widespread distribution of this distinctive stone with examples being found up to 600 kms to the west near Wilcannia on the Darling River. Stone from this source was also found in deposit dating to 3,800 b.p. in shelters at Graman, 180 kms to the north of Tamworth (McBryde, 1976). This remains one of the oldest examples of movement of axe material in Australia. In contrast, the material deriving from Salisbury Court had a far more restricted range, with no examples found further than 30 kms from source.

The second aspect of the study to yield results was the attempt to identify the sources of axes from unknown source. Binns and McBryde were able to locate two definite quarries, one near Tia on the tablelands and the other on Gragin Peak near Warialda on the western slopes. Gragin Peak material was found to have a wide distribution, though not as extensive as that from Moore Creek. Tia, on the other hand, had a more restricted distribution. They were also able to show that material found in the Wombah midden, on the northern side of the Clarence estuary, and elsewhere on the lower Clarence derived from sources on the upper reaches of the river. There was also good evidence that there had been movement of stone between the Clarence and Richmond River valleys.

The distributions of axes from the various sources were plotted by Binns and McBryde on a series of maps. Drawing on these data, Connah, Davidson and Rowland (1977) produced a simplified distribution map for the four quarries identified on the western slopes and tablelands: Moore Creek, Gragin Peak, Salisbury Court and Tia. This map has been reproduced here as figure 8.1. This map clearly shows that no axes from these sources found their way east into the Falls and the coast. Indeed, Tia shows an almost instant drop-off towards the east, while extending well west to Tamworth.

Figure 8.1 uses data collected by Binns and McBryde (1972) and includes distributions of axes from the main specifically-identified coastal source. The map shows that although there has been extensive movement of stone for axes both parallel and perpendicular to the coast, virtually none has penetrated the tablelands. The sole item on the tablelands deriving from a coastal source is an axe made of stone found near Ben Lomond, to the south of Glen Innes, and thought to derive from a source on the lower Macleay River.

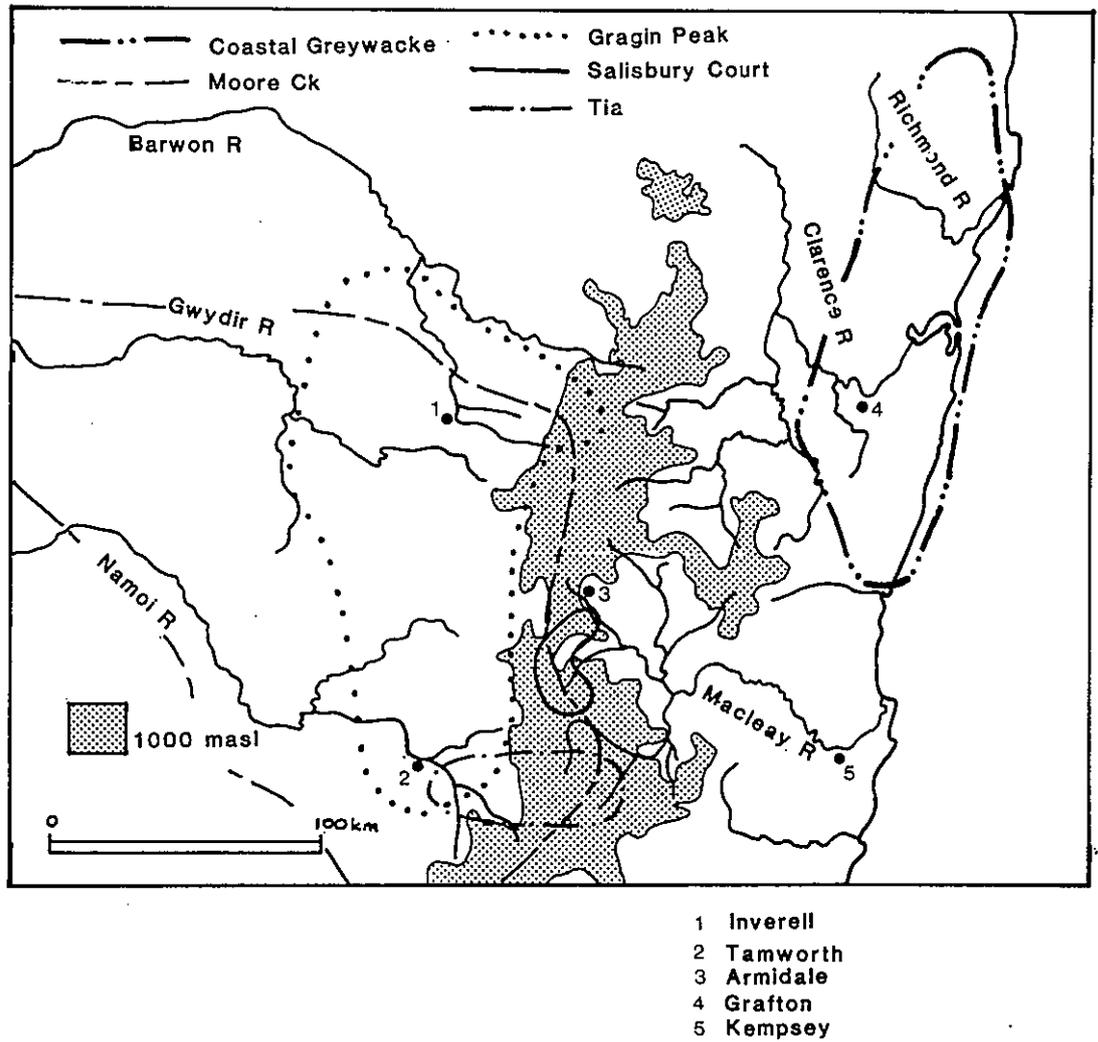


Figure 8.1: Distribution of main axe trading networks in northeastern N.S.W. (data in Binns and McBryde, 1972, and Connah et. al., 1977).

These results appeared clear-cut but I was concerned that Binns and McBryde's work might have missed examples of coastal sources on the tablelands. Their study had drawn heavily on museum collections and donations from farmers (Binns and McBryde, 1972: 2) which seemed to favour the western slopes and coastal strip, but had far fewer examples from the tablelands. Davidson (1982) noted that during investigations in the Guyra area he met a number of people who had collected axes but never contributed to Binns and McBryde's work. Consequently, I decided to have some more axes found on the tablelands thin-sectioned and sourced.

A sample of twenty axes and fragments were thin-sectioned in the Geology Department, U.N.E. Analysis of the thin-sections was undertaken by Nick Cook of that department. These axes had been obtained either by myself or others during fieldwork, or were donated by interested land owners who had found them on their properties. Although not a large sample it is useful for the purpose at hand. The find spot, rock type and likely source are shown in table 8.1.

All the axes and fragments appear to have been obtained from a source close to the find spot, normally within 5-10 kms. This largely reflects the geology of the tablelands. The majority of the axes are metamorphosed mudstones. Such materials are common on the tablelands, composed as they are of Paleozoic marine sediments intruded by numerous granite plutons. The heat from these plutons has metamorphosed the surrounding sediments, providing widespread outcrops of rock suitable for axe manufacture. Only one specimen demonstrates movement of material from the tablelands to the gorges. This was a specimen collected at the bottom of Dangars Falls. Its source, however, is an outcrop of metabasalt only a kilometre away, near the top of the falls. These results do not conflict in any way with those of Binns and McBryde. Rather, they confirm, in a limited way, that the attenuated distribution of material from the western slopes and tablelands at the eastern margin of the tableland is a real break. Further systematic work remains to be done.

Do these patterns of exchange represent anything more than the process of redistributing a relatively scarce resource? That is, is the movement of axe material simply a function of the need for people to obtain a resource that is not readily available within their own normal range, a process that has little to do with political and social arrangements in the region. Of itself, the clear archaeological and ethnographic evidence that the distribution of stone from Moore Creek was closely associated with ceremonial activity involving people from the tablelands and elsewhere on the western slopes proves nothing. Such gatherings would facilitate exchange but do not explain it, although the fact that there has been no exchange between tableland and coast would suggest that there was limited ceremonial contact between them.

specimen no.	material	location	source
1	metamorphosed sandstone	Wandsworth	1-2km
2	metamorphosed mudstone	Wandsworth	<20km
3	sandstone	Deepwater	1-2km
4	metamorphosed sandstone	Armidale	<20km
5	metamorphosed siltstone	Black Mtn Lagoon	<1km
6	metamorphosed siltstone	Upper Emu Ck	<2km
7	metamorphosed siltstone	Saumarez Ck	<2km
8	spotted hornfels	Wongiwibindah	<5km
9	metamorphosed sandstone	Llangothlin	<10km
10	metamorphosed sandstone	Llangothlin	<5km
11	spotted hornfels	Llangothlin	<2km
12	metamorphosed siltstone	Llangothlin	<5km
13	metamorphosed sandstone	Macleay River	<10km
14	metamorphosed siltstone	Dangars Falls	<2km
15	metamorphosed sandstone	Enmore	<5km
16	metamorphosed siltstone	St Leonards Ck	<5km
17	metamorphosed sandstone	St Leonards Ck	<5km
18	andesitic	St Leonards Ck	10-20km
19	metamorphosed sandstone	St Leonards Ck	<10km
20	metamorphosed sandstone	Enmore	<2km

Table 8.1: Composition and source of axes found on the New England Tablelands and gorges.

There are several strong arguments against the view that this is simply a process of redistributing a scarce resource devoid of socio-political implications. Firstly, raw material suitable for axe manufacture is widely available throughout northeastern N.S.W. Volcanic and metamorphosed sedimentary rocks outcrop frequently on the tablelands and western slopes. Similar outcrops are found in the coastal ranges, in addition to which there are large gravel beds in the numerous rivers from which suitable cobbles can be procured with ease. Only in the vast alluvial deposits of the northwestern rivers is stone a limited commodity, and the exchange of material is certainly not limited to this area.

Secondly, exchange appears to be symmetrical. That is, material does not simply move out from source to use area as would be expected if the quality of one material was so high that it was valued above locally-available stone. Rather, there is reciprocal exchange of stone between areas. Thus, material from Moore Creek passes northwest to Inverell and beyond, while material from that district found its way back to Moore Creek. On the coast, stone for axes was transported from the Clarence valley to the Richmond and Tweed valleys to the north, while material from these areas is found in the Clarence and further south.

Finally, there are few ethnographically recorded instances in Australia where exchange and trade was founded purely on functional requirements. While there are cases where particular resources which were essential for survival could only be obtained from certain areas (perhaps the movement of seed grinders from the Flinders Ranges into the Eyre Basin falls in this category), more often exchange was undertaken on the basis that an item possessed qualities which were perceived as valuable. There are also instances when exchange of identical items took place (e.g. Spencer and Gillen's (1899) account of two men swapping boomerangs which were the same in all respects) or where an object was broken or cached soon after receipt. Here the reason for exchanging goods appears to be to reinforce social ties and obligations, and perhaps to increase personal kudos, rather than to acquire a limited commodity.

The fact that people in this region were giving and receiving stone for axes (and probably other organic materials) from certain others, but choosing to ignore the possibility for reciprocal arrangements of the same sort with others points clearly to definite barriers existing. Appeal to geographical barriers is not possible. Therefore, it is social arrangements to which we must turn. It suffices to say at this point that the social arrangements that seem to govern this exchange of material conform with the patterns I had suggested in earlier chapters: extensive group interaction between tableland and western slope people, widespread networks between various coastal peoples, but extremely constricted social intercourse between the tableland/western slope and coastal groups.

The pattern is further complicated, however, by noting that distribution of stone on the tablelands and western slopes is asymmetrical. Material from Moore Creek and Gragin Peak is widely spread over the tablelands, but stone sourced to tableland quarries is far more limited in its distribution: a few examples from Tia have been found near Tamworth but, on the whole, stone from these quarries is found only in near vicinity to the source.

### 8.3 THE ROCK ART OF NORTHEASTERN NEW SOUTH WALES

The raw data in this section is derived from McBryde's efforts in the early and mid-1960's and from far more recent work by students at the University of New England. However, the interpretations and conclusions presented here, while drawn from these studies, are my own and offer some test for the model of regional social interaction I have posited.

#### 8.3.1 Review of rock art in the region

McBryde (1974) laid the ground work for rock art studies with her detailed recordings of sites in the Richmond and Clarence valleys, on the tablelands and across the northwestern slopes. She recorded 45 painted sites and 5 engraving sites in the coastal areas, 15 painting sites on the tablelands, and a further 12 paintings and 4 engraving sites on the western slopes. The great majority had not been described professionally prior to her endeavours.

McBryde felt she was able to discern four distinct styles in the region, using artistic form (engraving, drawing or painting), the type, range and representation of motif, and the type and range of colours used. In the Clarence valley and its tributaries she found a widespread drawing technique (dry pigments) of pictographs using red ochre and charcoal. Motifs include human hands and feet, hand prints, fish, goannas rendered in three ways (stick, outline and outline filled), human figures (stick and outline), bird tracks, barred figures, boomerangs (outline and outline filled), circles, semi-circles, rayed figures, snake-like figures, conical figures and numerous unidentified items (McBryde, 1974: 84-7). Some hand stencilling in white clay was also found. In some cases, motifs drawn with charcoal were highlighted by incising the soft sandstone inside them to expose a fresh white surface (McBryde, 1974: 88).

There was also a distinctive form of engraving in which simple linear marks, sometimes referred to as tally marks, inverted U-shaped motifs with another U inside them, and "crown-like signs" (McBryde, 1974: 91). The motifs are either incised or abraded. There are only five sites with these type of engravings and, with the exception of a single engraving site near Kyogle near Lismore, are the only engraving sites so far recorded in northern coastal N.S.W. All these five sites lie in close proximity to each other along a short stretch of the Clarence River between Grafton and Copmanhurst. As McBryde notes, this distribution is in no way a reflection

of suitable rock surfaces, as many more outcrops with overhangs and walls suitable for engraving are available (McBryde, 1974: 96).

On the tablelands the art comprises pictographs which have been painted (wet pigment) in red ochre on the walls of granite overhangs. Motif range is very different from that of the coast, with human figures and bird tracks predominating. Simple geometric shapes such as circles (sometimes barred) also occur, along with animal tracks. Some items of material culture (spears or digging sticks) have been painted. There are also representations of various animals, including birds, tortoises and goannas, but they are not common. All motifs have been rendered as single line or stick figures. No attempt has been made to depict figures, human or otherwise, in outline form (McBryde, 1974: 100-13).

The art of the tablelands is duplicated in sites from the western slopes. Paintings found at Graman, Gravesend, as well as in sites I have inspected near Inverell and Warialda, demonstrate strong similarities with those found on the tablelands in motif and presentation (McBryde, 1974: 112-8). The art of the western slopes also, however, includes several elements not found on the tablelands. Firstly, stencilling is present in one of the sites (Graman A6). Engravings are also found at a number of sites (Graman B1 and B2), Bullawa Creek, Birrigal and Warialda. The engravings, however, vary widely in motif depicted, and therefore do not represent a coherent style as seen in the Clarence valley. These engravings constitute McBryde's fourth art type in the region.

McBryde (1974: 116) offered a tentative relative chronology for art on the western slopes. Here evidence of motif superposition and limited archaeological data suggested that the stencil sites were the oldest art. They were followed by the red ochre motifs, which were in turn superseded by engravings. Elsewhere, she did not feel able to establish the relative ages of art, though there was some evidence of superposition of motifs on the tablelands, indicating that some of these sites apparently were painted over a period of time. She also suggested that the Clarence valley engravings bore some relationship to various sites seen elsewhere in Australia, and considered to be of great antiquity (McBryde, 1974: 92-3).

Two questions must be addressed: are the differences between these four types of art significant, and what do the differences mean? Let us examine the pictographic art first. The some of the differences between the art of the western slopes/tablelands and the Clarence valley are absolute: certain motifs are only found in one or other region, colour choice, and application technique (i.e. all the Clarence pictographs are drawings and all the tablelands/western slopes are paintings). There are also notable differences in composition, with the animated scenes found in tableland/western slope art being entirely absent on the coast, while the outlined, and

infilled, figures of the coast are not found on the tablelands and western slopes. The relative percentages of various shared motif types also varies significantly between the areas: bird tracks, for instance, are the most commonly represented motif on the tablelands and western slopes but are rare in the Clarence valley.

It is possible that the geology of the region might influence artistic representations. However, the styles of this region are fairly simple and can be undertaken on even fairly rough surfaces. Therefore, rock type and surface topography would not appear to be a major factor in determining the type of pictographs.

The distribution of engravings would be influenced by geology, as it would be expected they would be restricted to sandstone, with the granites and sedimentaries of the tablelands and much of the western slopes being too hard for pecking and grooving. The absence of petroglyphs on the tablelands is, therefore, unsurprising. Irrespective of this, motif selection of engravings on the western slopes (animal and bird tracks, human figures and feet, and various stylised animals) has little resemblance to that of sites in the Clarence valley. Nor are the curious U-shaped motifs found in the Clarence repeated on the western slopes. This cannot be explained by geology.

In both the pictographic and petroglyphic art there are variations between the coast, as represented by the Clarence valley, and the tablelands/western slopes that reflect cultural decisions by the people of these areas about what to depict and how it should be presented. In short, there are significant differences in the stylistic traditions of the art of these areas, in which style is defined as 'a consistent set of preferences for certain forms and modes, with a range of permissible variation' (Forge, 1977: 30). The question to now consider is, what do these stylistic differences mean?

In chapter 1, I presented a brief review of the meaning of style in which I argued that style is a means of conveying complex messages about how a group perceives themselves and their relationships with their neighbours. We can, therefore, view the stylistic traditions of the rock art of this region as part of a process of encoding information of this sort. The fact that there are two distinct styles in both the pictographs and petroglyphs, one centring on the coast and the other focusing on the tablelands and western slopes, is in total accord with the expectations of the model I have presented in which the tableland and western slope groups constitute one sphere of social interaction and information exchange, and the people of the coast another, entirely separate network.

In my model I also suggested that the artistic record might reflect other features of social organisation in the region. Specifically, I noted that the patrilineal/patrilocal descent system in association with very strong attitudes towards group boundaries could manifest itself by encouraging some stylistic heterogeneity. A recent reappraisal of art sites within the Clarence valley and its tributaries by Collins (1989) has found evidence of precisely this.

Collins undertook a detailed statistical analysis of motif type and presentation in this area for both the pictographs and petroglyphs, and comparing patterns found with ethnohistorical data on clan boundaries. She concluded that the art does constitute a distinct style for this region (Collins, 1989: 156). As a whole, sites in the Gumbaynggir and Bandjalang territories contain a similar range of motifs. However, she found that pictograph sites comprised a series of distinct clusters. Those clusters at the northern and southern boundaries differed from each other, and other clusters, in terms of their relative motif, colour and technique content.

Clusters in the central part of her study area demonstrated similarities in motif type. Each, however, lay on opposite sides of the Gumbaynggir/Bandjalang boundary. She found that these sites showed significant differences in the colour range and technique: one group of sites displayed a dominance of black and scratched linear motifs, while in the other light red and outline filled motifs dominated the assemblage. On the whole, Bandjalang sites were dominated by black, scratched motifs and Gumbaynggir by light red, linear figures. Collins demonstrated that this variation was not an artefact of environmental factors (1989: 158). She also found a similar pattern in petroglyph sites. All these sites contain rows of abraded grooves, but only sites south of the river contained the inverted U and crown motifs. However, she suggested a note of caution here because of the small sample available. Collins also concluded that the petroglyphs were contemporaneous with the pictographs (Collins, 1989: 157).

Thus, it appears that while groups at both tribal and clan level adopted a similar range of motifs, they chose to reinforce their separateness by use of different colour schemes and technique. It is tempting to suggest that motif was important in encoding the actual information, while colour and technique encoded the identity of the person who made the art. In this way it would be possible share conventions of meaning, but still clearly display the signature of a particular group without loss of meaning. However, there is no evidence to support this dichotomy. The results of Collins' (1989) study matches predictions of the model predicated on a system of social organisation exhibiting high levels of interaction but considerable fluidity in political alignment in which one was continually balancing group autonomy against past, current and future allegiances.

Unfortunately, there is no comparable study for the tablelands and western slopes. The pictographs of these areas appear, however, to display far more homogeneity than Collins found in the Clarence, with only red ochre being used (other than for a couple of white figures at Copeton) (but see Cook, Davidson and Sutton, 1989), and all sites having been painted. The range of motifs and their method of execution is also remarkably consistent. With the exception of stencils at Graman (which may well pre-date occupation of the tablelands), only one site contains a motif not found at two or more other sites widespread within the region. This is the bird-like figures found at Gravesend site 1. Thus, while further consideration of this question would be useful, the pattern on the tablelands and western slopes is at least consistent with the model suggesting, as it does, the maintenance of a very open system of social interaction across the tablelands and western slopes.

#### 8.4 CEREMONIAL SITES

In chapter 7, I suggested that the logistical tactics, such as net-hunting and animal drives, would be associated with the large-scale gatherings. Unfortunately, the facilities associated with such tactics were of organic construction, and are unlikely to survive in the archaeological record, except under exceptional environmental conditions.

Indirect evidence of the use of nets, in the form of large amounts of macropod bones in certain sites, may exist, although study of population structures of these remains would be needed to establish the manner in which they were procured. In this region, the taphonomic conditions pertaining in most sites are such that bone is unlikely to survive for very long due to low pH, and the faunal material which has survived is unlikely to be an accurate reflection of past hunting behaviour. The existence of distinct ceremonial centres, however, may be at least a hint that these logistical tactics were used in the region and have some antiquity.

To examine this possibility I reviewed the National Parks and Wildlife Service site register for the distribution of known ceremonial sites on the tablelands and northwestern slopes, from as far south as Tamworth to the Queensland border, and from Graman in the west to the eastern fall of the tableland. Included in the category ceremonial sites were all stone arrangements, bora rings (or earth dancing circles), carved trees, and art sites (both engravings and paintings). Although it is possible that some of these sites may have had a secular function, we know from ethnographic sources that these types of sites were definitely associated with ceremonial activity, and I will proceed upon this premise. I am quite confident that the distribution of ceremonial sites represents archaeological reality: they are very obvious, easily recognised by the lay-person, the population of the region is quite large, and McBryde's tactic of advertising in newspapers and extensive property visitation plus survey work in the region elicited a good response from landowners on these types of sites.

A total of 129 sites in this category have been recorded in the National Parks register for the above area. They comprise 69 art sites, 31 bora rings, 8 stone arrangements, and 21 carved trees. I then plotted the location of these sites on 1:100,000 maps with interesting results. Eighty of the sites are widely scattered with no more than two sites within 5kms of each other. The remaining 49 sites constitute a series of clusters of three or more sites within 5kms of each other. There are six of these clusters. The largest are those at Graman (on Ottleys Creek) with 19 sites, Moore Creek with 8 sites and Mt Yarrowyck with 7 sites. The remaining three, Ramah, Terry Hie Hie and Bendemeer, have four, five and six sites respectively. In most instances the sites in these clusters lie within less than 2-3kms of each other.

The distribution of sites in this way is not a function of suitable materials. There are outcrops of granite available throughout this region which offer suitable surfaces for production of rock art but which have not been used, and sandstone, while not as common, is still present in many parts of the western slopes. Nor is the distribution of pictographs simply associated with occupation sites. Although some painting sites do have occupation deposit as well, numbers of sites with art do not have other evidence of occupation such as artefactual and faunal debris. Many sites with occupation deposit do not have art present. Similarly, engravings are not found on every outcrop of sandstone, nor do all sites in sandstone areas have engravings. A wide range of tree species were used for carving, and rock for stone arrangements is ubiquitous so this has not influenced their distribution. Bora rings, carved trees and stone arrangements may have been adversely affected by farming practices, such as clearing of timber and ploughing, but will not have affected the rockart sites. Moreover, there has been little cultivation on the tablelands, so ploughing and removal of stone will have had little impact on stone arrangements and bora rings in this area. Bushfires may have reduced the numbers of carved trees.

I would suggest that this variation in distribution is consistent with the ethnographic picture. The widespread distribution of isolated ceremonial sites may have been associated with ceremonial activity involving members of one or two bands. The few congregations of more sites would have been associated with the revisitation of key areas on a regular basis by larger numbers of people. In relation to this I note the following.

The Moore Creek area was called Burkenbandean by local Aborigines at contact, and was known as a major ceremonial centre at which large numbers of people gathered (see chapters 5 and 6). Gardiner states that the ceremonies, which he compares with the Bunya feasts, were supported by kangaroo hunts, which were particularly common in this area. The presence of the Moore Creek axe quarry is immediately adjacent to the ceremonial sites, as shown in McBryde's map of the area reproduced here as figure 8.2. The archaeological data confirms the ethnographic accounts, and we might therefore readily accept Gardner's description. It is at just such places

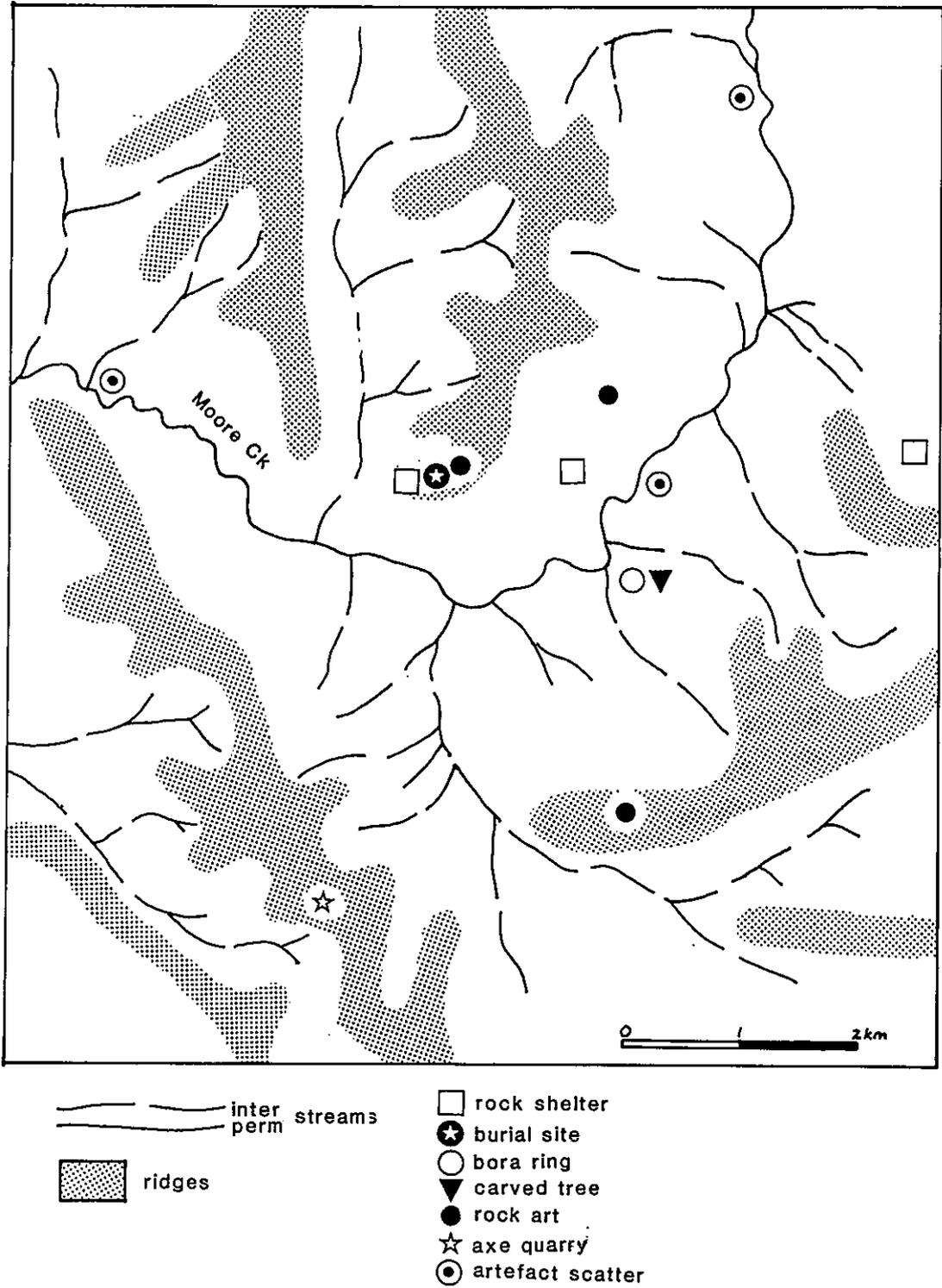


Figure 8.2: Distribution of sites in the Moore Creek valley (sfter McBryde, 1974).

that I would suggest net-hunts and animal drives would be used: the large numbers of people necessary to implement this technology effectively were gathered in a small area known to be rich in kangaroos. Interestingly, this location has rich basalt-derived soils, encouraging pasture growth and no doubt a high macropod population as a result. Similarly, Graman is also a very rich area, which may have made it an attractive proposition for visitation by large numbers of people (see McBryde, 1976). Terry Hie Hie was also known at contact as an area in which ceremonies were regularly held.

While the evidence is not conclusive, there is at least some archaeological evidence which suggests there definite ceremonial centres in the region as indicated by the ethnographic data. Sustenance of the large groups gathered at such places could have been provided by the use of nets and animal drives, but the chances of finding evidence of this are slight.

Before closing this chapter I would like to consider other avenues for research into ceremonial site distribution that might prove fruitful. While various elements of Bowdler's (1981) thesis have been demonstrated as inadequate (see chapters 2, 4, 5 and 11), it does appear that there are considerable numbers of ceremonial sites on the tablelands. I have argued that the tablelands do represent a marchland, where groups from the tablelands/western slopes appear to have been in conflict with those from the coastal areas. Ignoring for the moment the taphonomic problems, could the distribution and density of ceremonial sites on the tablelands have played some part in this competition for particular areas?

Claims for custodianship of an area are validated by knowledge and practise of the appropriate ceremonies and ritual. Satterthwait and Heather (1987) have presented a case that, in southeastern Queensland, the distribution of bora rings, an archaeological relic of these sorts of ritual, are a means of creating a cultural landscape. We also know from Gardner that in the New England region carved trees and stone arrangements were used as boundary markers of particular groups territories. It may be that the high density of bora rings, carved trees and stone arrangements were an expression of the rival claims of competing groups, seeking to validate their claim to parts of the tablelands by carrying out ceremonies in those areas they believed to be under their control. The location of sites may, therefore, be associated with strategic points in the landscape such as distinct routes from one area to another, or particularly rich portions. Detailed analysis of ceremonial site location in relation to these and other factors could test the potential for ceremonial site distribution to throw light on questions of this sort.