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TOWARDS A CLASSIFICATION OF AUSTRALIAN ABORIGINAL STONE
ARRANGEMENTS: AN INVESTIGATION OF METHODOLOGICAL PROBLEMS WITH A
GAZETTEER OF SELECTED SITES

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DECLARATION

I declare that, unless otherwise indicated, the work contained in this dissertation is my own and has not been submitted for any other degree at this, or any other, university.

SIGNED

DATE

24.8.87
ABSTRACT

A classification of Australian Aboriginal stone arrangements is fundamental to the understanding of their function and social significance for both Australian and world prehistory.

The implications of certain problems with the archaeological data for a classification of arrangements, such as dating and inadequate reporting, are discussed. Possible principles governing the mode of construction, design and location of arrangements are investigated, and the criteria for classification suggested.

A two-tier classification is proposed. On the first level, the technological and morphological characteristics of discrete stone arrangements are organised into classes. On the second level, the combination of arrangement classes at any one site defines site types. 144 sites in four regions in New South Wales are classified. Comparisons are made between classes and site types within each region and across regions. Existing opinions about the distribution of so-called 'simple' and 'complex' types are challenged.

An investigation of the relationship between classes or site types, and other kinds of archaeological sites, such as rock art, reveals no perfect correlations either within one region or across regions. It is proposed that any governing principles are more likely to have operated at a local level, reflecting such factors as local topography, beliefs and traditions, and population density, rather than at a universal level.

The significance of a classification of stone arrangements for studies on culture areas, and on complex Aboriginal hunter-gathering is discussed. Further research is proposed with regard to the former. The construction and location of many arrangements is regarded as evidence for a considerable investment of time and energy in non-subsistence activities. It is suggested that these stone arrangements are associated with the archaeological evidence identified by Australian and overseas researchers, for an increasingly more complex stage in the evolution of hunter-gatherers, in which ceremonial and ritual requirements were paramount.
Permanent memorials of the culture of Australian aboriginals appear to be rare. When we have enumerated the rather limited number of painted and incised rocks and considered the vast store of stone implements and ceremonial objects which are scattered all over Australia, we have exhausted most of the evidence of aboriginal enterprise which may be regarded as in any way permanent.

But in addition to these there are other permanent works of the aboriginals, which though designed at times on an almost grand scale, have received less attention than they deserve. Short of megalithic culture there are many manifestations of a stone cult which, although comparatively trivial in their display, are yet of the greatest interest.

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<table>
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<th>Abbreviation</th>
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<td>ACT</td>
<td>Australian National Territory</td>
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<tr>
<td>AHC</td>
<td>Australian Heritage Commission</td>
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<tr>
<td>CNSW</td>
<td>A sampled region in central NSW, encompassing the Bathurst, Dubbo, Forbes, Gilgandra, Narromine and Nyngan 1:250,000 maps</td>
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<tr>
<td>NE</td>
<td>A sampled region in New England, encompassing the Dorrigo, Grafton, Maclean, Tweed Heads and Warwick 1:250,000 maps</td>
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<td>NPWS</td>
<td>National Parks and Wildlife Service (NPWS)</td>
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<td>NSW</td>
<td>New South Wales</td>
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<td>SNSW</td>
<td>A sampled region in south-eastern NSW, encompassing the Bega, Canberra, Cootamundra Goulburn, Mallacoota, Tallangatta, Ulladulla, Wagga Wagga and Wollongong 1:250,000 maps</td>
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<td>WNSW</td>
<td>A sampled region in western NSW, encompassing the Broken Hill, Cobham Lake, White Cliffs and Wilcannia 1:250,000 maps</td>
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A major paradox of studies in Australian prehistory is that one of the most conspicuous, tangible, and durable relics of Aboriginal culture, has been largely neglected. While in Europe, extensive popular and scholarly interest has been shown in stone monuments and numerous studies have been published, no systematic examination of Australian Aboriginal stone arrangements has been undertaken. This is despite the fact that numerous sites have been registered since McCarthy [1970:xiii] observed that

The stone arrangements are as yet little known, they are very few in Tasmania and Victoria, but as many as 100 or more in each of the other States and the Northern Territory. Many more will undoubtedly be found.

In 1986 more than 284 such sites had been identified in New South Wales alone. The few exceptions to the neglect include McBryde's [1974] chapter on stone and earth ceremonial sites in New England, and more recently, a minor thesis on stone formations in Tasmania [Cane 1980].

One important area of research from which the stone arrangement evidence, other than stone fish and eel traps, has been omitted, is that of complex Aboriginal hunter-gatherers. This omission is ironical in view of the opinion held by some earlier Australian and British scholars and 'enthusiasts' that the arrangements testified to a previous advanced Aboriginal culture [summarised in Thorpe 1924]. Indeed, ethnographical and archaeological studies overseas have suggested that the scale of monuments may provide some indication of the complexity of the society which built them [Oliviera 1986:106]. The dearth of parallel studies in Australia is possibly due to the fact that theoretical interests here have been ecologically or demographically orientated [Thomas
However, even those discussions which infer a social basis for changes in the archaeological record, overlook the potential of the majority of stone arrangements in favour of the few with an obvious economic function - fish traps and drainage systems [Lourandos 1983: 90]. Only Bowdler [1981: 109] has realised the possibilities, for example, of investigating the antiquity of ceremonial gatherings using stone arrangement evidence. Since social theorists consider that ceremonial gatherings provided the circumstances for change, by increasing demands on productivity and on social relations [Bender 1981: 154], it is ironical that one of the most tangible and durable remains of such activities is often overlooked.

The theoretical orientation of Australian prehistoric studies notwithstanding, there are also a number of fundamental problems presented by a study of stone arrangements which inhibit the use of this evidence. They include problems of dating, including the linking of arrangements with archaeological sequences or assemblages, problems with preservation and identification, inadequate site records and sparse ethnohistorical references to their use.

The present study is intended to redress the above state of affairs. It is realised that the use of stone arrangement evidence is hampered further by the lack of a standard nomenclature and methodological framework within which to organise the apparently disparate body of data. In the following discussion, the possibilities of a classification of stone arrangements will be investigated on two levels. On the first level, the problems of organising the data into manageable and clearly defined units or types will be addressed. On the second level, the variations between the defined types will be examined with view to making inferences about their origin and function. In order to test the appropriateness of the classification, a study of sites in four regions of New South Wales will be undertaken.

It might be expected that an examination of the range of types of stone arrangements in relation to the local geography and to other archaeological
sites might suggest reasons for variations in their construction and morphology, and for the significance of their location. Consequently, it may then be possible to identify certain unifying principles governing the intrinsic and extrinsic attributes of stone arrangements, including their relationship to other archaeological sites or artefacts, which may be important in discerning their function and, possibly, period of use. Such principles may have operated at a local level and therefore may reflect localised cultural traditions or uses, or they may have a more universal application relevant to the evolution of Aboriginal hunter-gatherers.

The term 'stone arrangement' is defined here as denoting a stone or stones placed in some sort of order by Aborigines, either as a product of other activities, such as clearing, or by transporting stones to, or setting stones in, a designated place. Thus a stone arrangement may consist of one stone only or of hundreds of stones. However, the definition does not include natural stone settings which have significance for Aborigines. As the arranged stones are invariably small in scale, locally available and naturally rather than artificially shaped, Aboriginal arrangements are not normally designated 'megalithic' by researchers.

The term 'stone arrangement' is preferred over a number of other terms used in the literature because of its wide applicability. For instance, the terms: stone design [Dow 1938b:30], pattern [Gerritsen 1976:20], picture [Macknight and Gray 1970], ceremonial ground [Black 1950:8; Radcliffe-Brown 1926:205] and monument [Sharp 1934:26] have restricted usage. Similarly, other terms, such as stone structure [Mountford 1940:284-7; Coutts et al. 1978:1], erection [Brown 1900:152] and construction [Stockton and Rodgers 1979:7] infer that the object is of a substantial nature, and are only appropriate for stone-walled houses, fish traps, cairns, walls and the like. The term 'stone alignment' has been used in a general way to mean 'made from or utilising stone materials' [Hotchin 1980:119]. However, the term literally means stones placed in a line or aligned with one another. McBryde [1974:29,45] applies the term in this
more restricted sense to this one category of arrangement distinct from cairns and standing stones. Consequently, the term alignment is not accepted as a synonym for arrangements in the present discussion. Cane [1980:6] prefers stone formation or feature as general terms to describe Tasmanian sites, although he uses the term arrangement in subsequent research [Cane 1984:183]. Although the Tasmanian sites are distinctive in being located principally on pebble beaches, their mode of construction and morphology are not unparalleled on the mainland. Consequently, there is no reason for limiting Cane's terms to Tasmanian examples.

Given the variety of terms used in the literature, it is appropriate to mention some of the inconsistencies in the application of the term 'stone arrangement', so as to avoid any confusion with the broad definition used here. Such confusion is largely due to the fact that the function of some arrangements is actually or presumed to be known. Mulvaney [1975:257-60] distinguishes between stone arrangements, stone pathways and Macassan-inspired stone pictures. Similarly, McCarthy [1970:15-25] separated arrangements from stone fish traps in his discussion, but also referred to the Brewarrina traps as the 'most famous arrangement'. On some state site record forms the category of stone arrangement appears to be a convenient one in which to place sites whose function is indeterminate. Hence, fish traps, burials, and bora grounds made of stone are invariably recorded separately from other arrangements, and in Queensland, stone circles, assumed to be ceremonial, form yet another site category. A study of arrangements, which is not based upon function, such as the present one, must therefore examine sites recorded under various headings. However, not all categories of arrangement will be discussed in detail in this classification. These are fish and eel traps and their accoutrements, and stone structures referred to as houses. Their construction and function have been documented elsewhere [Coutts et al. 1978; Williams 1985]. The fishing structures make use of the natural topography and hydrology and have counterparts in other areas made of stone and brush for
whom there is ethnohistorical evidence of use. The stone houses also appear to be counterparts of timber shelters. The co-occurrence of large numbers of houses and stone trapping systems in western Victoria warrants a separate study.

The principal sources of information utilised by the present writer, are published materials and manuscripts held by the Australian Institute of Aboriginal Studies and the records of 144 sites, most of which were obtained from the NSW National Parks and Wildlife Service. Numbers (1-144) in square brackets found throughout the text refer to these sites and correspond with abridged site descriptions in Appendix A. The other appendices contain figures, plates, tables and maps.

With regard to one further source of information, it is regrettable that R.J. and J.M. Rowlands declined to take part in the scholarly exchange of ideas and data, and indicated their intention to produce their own study of stone arrangements.

Stone arrangements continue to be of significance to Aboriginal communities because of their traditional and historical value, and in some cases, for religious reasons. It should be understood, therefore, that a study of stone arrangements is relevant not only to the interests of prehistoric archaeology, but also to the heritage of contemporary Australian Aborigines.
CHAPTER ONE: BASIC PROBLEMS

... queer cairns, symbolical geometrical figures 'understood' no doubt by the blackfellows, but hopelessly perplexing in their fulness to any white I have yet seen [Sowden 1882:43].

Any investigation of Australian stone arrangements faces at least four basic problems: a) the origin and authenticity of many arrangements are in doubt; b) there is no chronological framework in which to place the sites, although some antiquity for the building tradition is presumed; c) the quality of the data is variable, particularly in the case of site records; and d) there is a dearth of ethnographic information about the origin and use of arrangements in many regions, which leads to a search for parallels in the more distant, but ethnographically rich areas of northern Australia.

Certain intrinsic characteristics, which include size, construction, shape and state of repair, and extrinsic factors, such as location or environmental setting, may also present problems for identifying Aboriginal stone arrangements. Undoubtedly problems of identification have resulted in an under-representation of arrangements in official records [Stockton and Rogers 1979:1]. The ethnography of stone arrangements in the Kimberleys and Cape York indicates that some sites may consist of as few as one or two stones which might easily be mistaken for natural settings [Plates 1 and 2]. Not surprisingly then, the reverse may occur where natural groupings are attributed to human action. In some cases, no firm conclusions can be reached. Cane [1980:120-1] discussed the possibility that natural agents were responsible for at least some of the stone formations he recorded on pebble beaches in eastern Tasmania. An Aboriginal origin of an arrangement has rarely been confirmed by scientific excavation. However, at a site near Melbourne, excavation uncovered a cairn in the centre of an earth ring together with a few Aboriginal artefacts [Frankel 1982: 93-5; Plate 3].

The characteristically small size or low height of many Australian stone
arrangements may also present difficulties in distinguishing them from their surroundings. Many authors have remarked upon the poor state of preservation of arrangements. One site in New England was already in disrepair by the turn of the century [Brown 1900: 152]. The rapidity of the decay is aptly illustrated in photographs of groups of mounds at Poolamacca in western New South Wales, taken in 1908 and 1945 [Plate 4]. Environmental factors such as thick vegetation and stony terrain have impeded the identification and description of arrangements in Tasmania [Cane 1980; Plate 5] and in New England [Brayshaw 1978; McBryde 1974]. Encroaching sand dunes have been held responsible for hiding or altering some sites in the Mootwingee district of western NSW [Gerritsen 1976:20] Single course arrangements are particularly susceptible to disturbance by natural processes, wandering stock, ploughing and other European activities. Furthermore, arrangements have been the object of deliberate vandalism. In 1986, damage was noted at a series of mounds at Narrengullen near Canberra. Stones with upturned unweathered surfaces had obviously been removed from their original setting, while some had been smashed to pieces. Their original state and number are now lost.

Europeans have also used stone as a building material, thus creating one further area of confusion in the identification of stone arrangements. There has been at least one case of excitement at the discovery of what was later found to be an explorer’s campfire [Crawford 1968:42]. European ‘arrangements’ include the cairns of surveyors and prospectors, lines of stones and heaps remaining from homes, gardens and graves of former settlers, and stone piles built by bushwalkers. Other such arrangements include accumulations of stones resulting from land clearance and the ubiquitous travellers’ stone fireplaces. Kimber [1981:11] noted that prospectors probably left behind many arrangements in Central Australia. Their marks included a knapped pile or two of rock near an outcrop, low heaps of stone beside shallow pits and V-shaped rectangular tent-outlines, all of whose shapes have counterparts at sites deemed to be Aboriginal.
The location of an arrangement is not always a reliable criterion for distinguishing Aboriginal from European constructions. While in some areas, the locations of presumed Aboriginal and surveyors' cairns were said to be mutually exclusive [Mountford 1940:286], in other regions it is not uncommon for arrangements to share an elevated situation with a trigonometrical station [8 and 9]. Inevitably, this has sometimes led to the destruction or damage of pre-existing structures. What seems to have been a unique double ring of stones on Iron Mountain in north Queensland was severely disturbed by the placement of a survey disc in the centre [Colliver in McCarthy 1970:7]. The co-existence of European and Aboriginal structures appears to have occurred at some Tasmanian sites [Cane 1980:149]. The European examples were often distinguished by an association with fences and wire, and in one case, a hut.

Uncertainty about the origin of arrangements is not a recent phenomenon. Bradshaw was unsure about a stone wall he found in the 1890's during his exploration of the Prince Regent River in north-western Australia [1892:96]. Consequently, investigators have had to resort to evidence other than the physical form of arrangements to discover their origin. A low cairn found on another northern expedition was deemed to be Aboriginal on the grounds that previous visits by Europeans to the region were unrecorded [Crosland 1902:14]. Frankel [1982:95-6] took into account the Aboriginal tradition of building ceremonial earth rings containing stone components attested elsewhere in eastern Australia, together with the presence of the Aboriginal artefacts and corresponding dearth of European material before proposing an Aboriginal origin for the internal cairn. In a series of articles on the Waroonee-type slab cairns, Mountford [1927:171; 1940:279-83] described his initial reservations and later his elimination of alternative explanations to an Aboriginal origin. He took into account the Surveyor-General's department's assertion that such cairns were not constructed by surveyors, and the local Aborigines' denial that Europeans could have made them [Mountford 1927:171].

The presence of Aboriginal cultural remains in the same area has been used
to support an Aboriginal origin for some arrangements [Edwards 1965:24]. However, as Brayshaw [1978:215] noted in the context of sites at Kempsey, evidence of other occupation in the immediate vicinity is not always forthcoming nor would be expected if the sites were totemic or ceremonial. The probabilities of site-use by either Aborigines or Europeans have been discussed [Cane 1980:Chapter 10] on the basis of the suitability of the site for a range of activities which either of these groups might have been expected to have engaged in.

The second problem to be considered here concerns the antiquity of stone arrangements. This is compounded by a number of factors. For example, there have been few excavations, scientific or otherwise, and even fewer radiocarbon assays. At only one site has a stratigraphic sequence of arrangements been published [Jones: 1964: 198]. Studies of the rate of weathering on stones remain inconclusive [McBryde 1974:52]. There is a dearth of ethnohistorical accounts of the use or existence of arrangements in most areas where traditional Aboriginal life was rapidly extinguished or disrupted after European settlement. Furthermore, in the past, information from Aborigines was not always forthcoming, due either to an ignorance of the arrangements or a reluctance to divulge tribal secrets to Europeans. In addition, there is every possibility that some stone arrangements were constructed progressively over an indefinite period. To give an example from the ethnography, curators of a site in the Western Desert restore fallen stones to original settings and shift some to new positions when they consider them to have been incorrectly placed [Wallace 1980:117-8].

Finally, direct associations between stone arrangements and other cultural materials is difficult to prove. Surface campsites, art sites, carved trees, and so on, pose similar dating problems and may be located some distance from arrangements.

In support of assumptions that stone arrangements have considerable antiquity, Ferguson [1981:624-29] obtained a radiocarbon date of about 18,500
BP for a cultural horizon containing a stone cluster at Quinnup Brook in south-western Western Australia. Jones [in Cane 1980:16] gained a minimum date of 750 + 100 BP for the lower of two alignments at the Bay of Fires in eastern Tasmania. He suggested [1964:198] that this sequence was evidence for a continuity of tradition. In western Victoria, Williams [1985:206] obtained a date of 380 + 150 BP for a stone structure at Gorrie Swamp, while modern dates were received for four similar constructions in the Kinghorn complex in the same region. No evidence of any re-building was found, and in some cases, artefacts of European manufacture were included in the debris [Coutts et al. 1977:38].

Relative antiquity has been gauged on the basis of the condition of some sites. The explorer Grey [1841:226-7] estimated shell material within a mound he had opened, near Hanover Bay, north-western Australia, to be 200 to 300 years old. He thought that the covering stones were more recent because of their fresh-looking sharp edges. On the other hand, Bradshaw [1892:96] assumed that the stone wall he found in the Kimberleys region to be old, because a tree was growing out of it.

The date of the earliest Aboriginal occupation in a region may suggest a terminus post quern for the construction of stone arrangements. In western Victoria, for example, occupation is estimated to date from about 3,500 BP. The house, fish and eel-trapping complexes are therefore most likely to date to the late Holocene or Recent periods [Coutts et al. 1978:34]. Similarly, evidence for Pleistocene occupation in the four regions surveyed (Chapter 5) is sparse, suggesting that those arrangements located in so-called harsh environments are of more recent date.

As McBryde [1974:52] noted, the dearth of ethnohistorical accounts of stone arrangements may indicate a greater age than living memory or simply the incomplete nature of the observations of Aboriginal culture. G. Wilson, an early settler in the Wilson River region of New England was unable to obtain information from local Aborigines, neither first- or second-hand about the
stone erections he discovered [Brown 1900:152], while the only details an Aboriginal informant in the Flinders Ranges could provide about the Waroonee cairns, was that an old blackfellow a long time ago had built them [Mountford 1927:171]. In the following account there are hints that a reluctance on the part of the Aborigines to divulge information arose out of a concern to protect the arrangements:

The natives are very tenacious of any of these stones being moved, especially the centre one. The only reply the blacks make to any enquiry on this subject, and on which they are loth to speak is "Don't know! blackfellow make it so long time ago." [From Miles 1854 quoted in Thorpe 1924:485].

The perceived ignorance of the Aborigines led at least one observer to the extreme conclusion that the sites must belong to some earlier golden age:

... as it is well-known that the aborigines of today are not people likely to indulge in the great labour of constructing cairns of this description, hence my opinion that they are the remaining marks of trade routes of some previous race of people, evidently with some knowledge of navigation, who communicated with the North of Australia in by-gone times... [Brockman 1923 quoted in Thorpe 1924:488]

Stone arrangements embedded in sand-dunes in western New South Wales may be quite old [McCarthy 1986 interview], but studies of the geomorphological processes active upon these arrangements have yet to be published. It is relevant to note that stone tool studies were similarly limited before radiocarbon dating; some independent validation of the antiquity of stone arrangements remains to be discovered.

The problem of the varying quality of the recorded data will only be briefly dealt with here. While the various state authorities have produced guidelines for the recording of stone arrangements (via their respective site record forms) the amount of detail provided is still apparently dependent upon the recorder's level of expertise and interest, the appropriateness of recording
equipment and time constraints. Moreover, uncertainty about the origin of a suspected arrangement may result in only a brief preliminary recording. State authorities, through a lack of resources, are limited in how quickly, if at all, they can authenticate suspected sites. It is also a fact that some sites are no longer extant. Recourse to the wider literature is therefore necessary for ethnographic and comparative material. Ideally, an investigation of arrangements should encompass site records, the literature including ethnography and ethnohistory and site visitation.

With regard to ethnography, a distinction should be made between that obtained from traditional Aboriginal societies in northern and north-western Australia and the ethnohistory in regions where tribal life was disrupted soon after European contact, such as in eastern and south-eastern Australia. Various authors have reported on stone arrangements in contemporary use in northern Australia. These accounts are viewed as functional correlates for arrangements in other regions. However, to paraphrase McBryde [1974:51], it is not justifiable to use such correlates to suggest any connection in belief and ceremonial between widely separated areas. On the other hand, they may offer a range of probable interpretations. It should not be overlooked that some Aboriginal communities in de-tribalised areas have continued to transmit traditional and sacred knowledge until comparatively recent times. Representatives of the Yuin people on the south-east coast of New South Wales have revealed the sacred importance of Mumbulla Mountain where a number of natural arrangements and one artificial stone arrangement are located [Egloff 1979]. Some arrangements have acquired a new significance to Aboriginal communities as part of their cultural and historical heritage, although their origin and exact function are now forgotten [Creamer 1984:7-11]. However in Tasmania, Cane [1980:141-6] discovered that no detailed investigations have been made of any ethnohistorical references relevant to the construction of the stone formations. His own research uncovered only a few accounts of the Tasmanian Aborigine's use of stone.
The problems of authenticity, antiquity, inadequate recording and scarce ethnohistorical references have a number of implications for a study such as this one. There is a likelihood that some sites will be mistakenly identified as European or Aboriginal in origin which may give an incorrect picture of the diversity of Aboriginal arrangements in a particular region. It is often the case that assumptions are made as to what is or is not characteristically 'Aboriginal' without a thorough examination of sites in the region have been carried out. A number of doubtful Aboriginal arrangements on the New South Wales sites register will be discussed in the following regional surveys. The possibility of deliberately faked arrangements cannot be overlooked. On her return in the 1970's to the Serpentine sites in New England, McBryde [note to NPWS file on site 21-2-9] discovered a number of 'arrangements' structurally similar to those she had recorded a decade earlier, but obviously added in subsequent years. The incomplete state of many arrangements not only has implications for determining who built them and why, but also for studies of their physical characteristics. Care must be taken with conclusions about regional or cultural diversity in forms or designs where the original characteristics of sites have become blurred and even obliterated.

The lack of a chronological framework has resulted in a tendency for arrangement studies to be synchronic, concerned with their physical features, distribution and function. No attempts have been made, for example, at a seriation of arrangements based on form, or at correlations of types with other archaeological site types. McCarthy [interview 1986] however, has raised the possibility that the designs of some arrangements in western New South Wales might correspond to motifs in the early Paramitee style of engravings. While an investigation of such correspondences is beyond the scope of this dissertation, it is interesting to note that at least one circular alignment in the sample [21] was bisected by lines in a manner reminiscent of cartwheel designs belonging to the engravings' corpus [17]. The dating problem may explain in part the absence of stone arrangements from discussions of late Holocene changes.
The implications of poor site records are obvious. Where the data base is incomplete, conclusions drawn about the descriptive, locational and other attributes of sites can only be tentative at best. The site information assembled for this dissertation is appended in the belief that the basis for any conclusions should be explicit.

The scarcity of ethnographic evidence for the use and origin of some stone arrangements has two consequences. It may lead to a tendency to inflate the significance of the little ethnographic information which survives. A preoccupation with initiations, corroborees, and tribal fights may overlook other aspects of ritual life. That the latter must have also included ceremonies associated with increase and mythological sites is supported by research undertaken in north-eastern New South Wales by Radcliffe-Brown [1929] and more recently by Sabine [1978], as well as by the increasing data on sites of significance provided by Aboriginal communities [Creamer 1984]. The second consequence may be an increased dependence on the part of researchers upon evidence of a different nature. The significance of physical attributes, location, geographical and social (i.e. relationship with other archaeological sites) setting has been realised in overseas studies of stone monuments [e.g. Powell 1969: Chapter 1 on megalithic tombs] for the purpose of hypothesizing about their origin and use, but it has not received the same degree of scholarly attention in Australia. For instance, there have been no investigations of the factors influencing the location of stone arrangements parallel to that by Heather [1983] on earth rings in south-east Queensland. Although referring to campsites, Creamer [1984:8.2] emphasizes that a site's location is the product of the particular local Aboriginal culture with its ideas about clan boundaries, access to food and division of labour.

Furthermore, an archaeological investigation of stone arrangements may be an important adjunct to the ethnographies of some sites. As one anthropologist [Palmer 1977:36] has observed:
Stone arrangements for which a convincing practical explanation is available are contentious provided the data collected are reliable and well-documented. Mythological explanations are less conclusive since they tell use only the relevance and meaning of the site to contemporary informants and tell us nothing of who erected the stones in the first place or why.

Moreover, in regions lacking adequate ethnographies such an investigation may suggest independent means of establishing criteria significant for understanding arrangements as artefacts of past cultural practices. It may be hypothesized, therefore, that stones were arranged by Aborigines according to principles reflecting their purpose, and their geographical and social setting. The possibilities of discovering such principles will be the subject of discussion in the next chapter.
CHAPTER TWO: THE SEARCH FOR PRINCIPLES

The evidence clearly indicates that there are numerous reasons for the creation of stone arrangements, with little consistency in type or overall design... [Palmer 1977:37].

Very frequently the ceremonial ground is marked out by heaps or lines of piled up soil, or by heaps and lines of stones. Each ceremonial ground has its own particular arrangement and plan, no two being exactly the same, though certain general principles recur with some frequency [Radcliffe-Brown 1926:205].

One area of prehistoric studies is characterized by a search for, and explanation of, processes presumed to underlie the archaeological record. These processes determine how the data came to be where they are, the form they take and, to a certain extent, their state of preservation. In the case of stone arrangements, one might expect cultural and environmental processes to have been at work in the spiritual and secular spheres of human activity. The choice of raw material is a case in point. While stone was readily available in many regions, its durable qualities must have made it a preferred material for marking or demarcating areas, for monument building, and for a wide range of economic and domestic purposes, such as the consolidating of wooden structures. The fact that the Yir Yoront of Cape York Peninsula imported stone because of the poor quality of the local variety suggests a tradition of stone construction for ceremonial grounds, rather than mere opportunism Sharp 1934:26]. In contrast, stone arrangements in the Sydney-Hawkesbury region occur less frequently than paintings and engravings, despite an inexhaustible supply of loose stones and slabs [McCarthy 1970:1]. Furthermore, the fact that Australian stone arrangements utilise mostly small, easily manoeuvred and locally available stones suggests methods of construction, organization of labour, and functions at variance with those of their megalithic counterparts in South-East Asia and Europe.
Opinions differ as to whether or not stone arrangements were bound by any unifying principles beyond the preference for stone. The quotations which introduce this chapter illustrate this difference and give rise to two issues. The first concerns the appropriateness of searching for principles which have applicability throughout a continent such as Australia, bearing in mind that overseas studies of monuments, such as that by Burl [1976] in the British Isles, and Daniel [1960] in France were more confined geographically, culturally and probably temporally. Aboriginal culture was, and still is, manifested across diverse and widely separated environmental and climatic zones, which in turn have contributed to regionality in customs, religious beliefs, language and material culture. As a survey of Aboriginal burial customs has shown, continent-wide generalizations about culture could be inappropriate, and even inaccurate [summary of Meehan's research in Mulvaney 1975:255]. The second issue pertains to the likelihood of principles being specific to certain contexts, such as ceremony or hunting. The implications of these issues will be discussed here utilising general observations made, on the one hand, by prehistorians about the distribution and location of Australian arrangements, and on the other, by ethnographers about their construction, physical characteristics, function and location.

The practice of building stone arrangements has been described as almost pan-Australian in its distribution [Morwood 1979:78]. Arrangements are found in many environmental, including topographical zones, ranging from arid plains in inland Australia, to the rainforests on the eastern seaboard. They are located in lowlying or flat landscapes and on top of mountains. A study has yet to be undertaken of the variations in density and form of arrangements across the different environmental and also cultural zones, although general statements about site distribution, location, and frequency of types in certain regions suggest that the presence or absence of arrangements is significant. For instance, scholars have remarked on the absence of stone arrangements near Brisbane in south-eastern Queensland, and have noted that ceremonial
grounds there were constructed out of earth (Morwood 1979:78). The question as to whether or not inferences may be drawn from an apparent correspondence between some stone arrangements and earth sites will be addressed in due course. Arrangements are also deemed to be rare in south-western Western Australia and in Victoria (excepting those at Carisbrook and in the Western District). Stone arrangements occur in varying density in New South Wales. It has been suggested that the marked concentration of sites in north-eastern New South Wales and south-western Queensland indicates that the tribes of the Darling Basin made a greater use of stone structures in ceremonies than did other tribes (Dow 1938b:30). However, it should be borne in mind that many regions have not yet been surveyed adequately. The impression of a paucity of stone arrangements and ceremonial sites in the southern uplands of south-eastern Australia described by Flood (1980:143) is being challenged by recent additions to the NSW site register, for example, by Geering (1981) and Sams (1982).

Morwood (1979:78) discerned no lowland or highland dichotomy in the distribution of sites in south-central Queensland. Similarly, McBryde (1974:40) found low cairns both in the plateau country of the New England tablelands and in adjoining coastal river valleys. Furthermore, there appeared to be no significant pattern in the distribution of arrangement sites on the tablelands, excepting perhaps a preference for elevated positions with a good outlook. Presland (1981:12) maintained that Victorian stone structures were not linked to any particular environment or landform. However, this does not seem to agree with the abundance of a certain types found specifically on the stony rises in the Western District.

Correspondence between the distribution of arrangements and other archaeological site types has been considered significant in some areas. A distinction has been drawn between the occurrence of arrangements together with rock engravings west of the Darling River, which once comprised the Bagundji and Malyangabu territories, and their absence east of that river in
Gamilaroi and Wiradjuri territories, where instead, carved trees and rock paintings are found. It has been suggested that the distribution of arrangements and engravings reflects cultural and linguistic divisions [Allen 1980:34]. Indeed, a high density of arrangements accompanied by campsites, art and quarry sites has been recorded in the region covered by Cooper Creek and its tributaries, which is a known migration route extending from Queensland to the Lake Eyre and Darling River basins [Kelly 1968]. The proportion of arrangements to other site-types appears to vary and, unlike the two following examples, is not always quantifiable. Of 29 sites located during a survey in the southern uplands of New South Wales, two were arrangements [Winston-Gregson 1978:32]. In another survey, in the Upper Macquarie River district in central New South Wales, 16 out of nearly 150 sites were arrangements [Pearson 1981:539a].

Comments about the distribution of types in some areas imply both environmental and cultural reasons for the variation. McCarthy [1970:18-9] noted that arrangements in New South Wales were simpler in type (meaning heaps) along the coastal plain and in the mountain ranges, in contrast to more 'complex' sites in the west of the state, where combinations of heaps, circles, and pathways featured. Complex sites of this kind are generally associated with more open desert country, such as on the claypans and hills of inland Australia [McCarthy 1970:82]. In Western Australia, the same scholar [McCarthy 1970:80] found no gradation from complex to simple sites from north to south. Across the continent, McBryde [1974:45] found a mixture of commonly occurring types (heaps) and rare types (standing stones, circles and alignments) together with earth ceremonial grounds on the New England tablelands. To these types may be added the pit-like circles at Kempsey [Brayshaw 1978: 212]. In Victoria, the functionally defined types, hunting-hides, tribal boundary stones and petrographs are held to be absent [Lane and Fullagher 1980:134], while in South Australia ceremonial grounds consisting of stone circles and pathways are apparently unknown [Pretty in
Differential distribution and site location of stone slab cairns and pebble or cobble mounds has been remarked upon in the latter state [Mawson and Hossfeld 1926:23; Mountford 1940:287]. Mounds and pits were the most commonly occurring stone features at eleven Tasmanian locations, with other types either absent or in small numbers at most sites. The significance of this distribution pattern is uncertain due to problems in establishing their origin [Cane 1980:6].

Given the apparent diversity in formal types, their frequency and function, it would not be surprising if any principles governing arrangements were more readily identifiable at a regional rather than continental level. One would expect them to reflect local needs, such as the availability of stone and space, and proximity to food and water resources, and social or economic needs, illustrated in the manner of their construction, distance from other sites including campsites, and size and design.

As indicated in the following brief survey, the ethnography of stone arrangements presents certain problems for the prehistorian in discerning governing principles. Summaries have been made elsewhere [McBryde 1974: 51; McCarthy 1970:51-80] based on material collected by early twentieth century anthropologists, such as Sharp [1934] and McConnel [1932] in Cape York Peninsula, Love [1938] and Elkin [1930,1933] in the Kimberleys, McCarthy [1953a] on Groote Eylandt, Spencer and Gillen [1968] in central and northern Australia. More recent anthropological works include Tindale [1974], Gould [1969] and Wallace [1980] in central Australia, Palmer [1977] in the Pilbara region and Cane [1984] in the eastern part of the Great Sandy Desert, Western Australia. The restriction on access to details of arrangements in the latter work, illustrates the trend in recent years for information of a sacred nature to remain uncirculated. This means that recourse must still be made to the older research for detailed published accounts of stone arrangements then in use.

Ethnographic examples are useful in so far as they may serve, as models
for the range of likely practices [Rosenfeld on art 1982:20]. They may provide some idea of the range of origins and uses of arrangements in general and the sacred and non-sacred contexts to which they belong. They may also suggest characteristics and associations of arrangements which may assist the prehistorian in identifying and understanding sites in other regions which lack detailed Aboriginal knowledge. However, an examination of ethnographic examples indicates a lack of certain information necessarily of concern to the prehistorian. The lacuna is no doubt a reflection of the interests of the observers and of their informants.

The ethnography consulted by the writer indicates that stone arrangements had a range of origins and functions in sacred and non-sacred contexts. In the sacred realm, they may be totem sites where totemic ancestors first performed the appropriate ceremonies and who consequently turned into stone [Gould 1966:2]. They may represent scenes of the exploits of one or many of the mythical ancestors such as the Wandjina, [Love 1938:137; Sharp 1934:26; McCarthy 1953b], or they may commemorate some striking incident or draw attention to some sacred place [Love 1938:137; Crawford 1968:40]. According to Aborigines, therefore, arrangements may have a mythical origin, i.e. due to some mythical event, ancestor-hero or totemic being, or a human origin. Moreover, natural features may have the same function as some arrangements [Love 1938:137]. The natural topography may carry the story line for a particular tradition at a particular site often in conjunction with a rock alignment or sacred rock pile [Gould 1969:143]. As Sharp's [1934:26-8] study of the ritual life of the Yir Yoront in the Cape York Peninsula shows, not all sacred arrangements necessarily had ceremonies attached to them. The myths of 'little sacred grounds' were largely historical in nature and there were no taboos on knowledge of them. In contrast, 'big sacred grounds' were taboo to the uninitiated, the stones were considered to be dangerous and the myths connected with their establishment were secret. Initiation, historical and increase ceremonies took place at these grounds.
In non-sacred contexts, stone arrangements may serve as hunting hides [Tindale 1974:106], markers of water sources [Kimber 1981:15] and tribal boundaries [Tindale 1974:29], hut foundations [McCarthy 1970:8], circles for preparing seed [Tindale 1974:95], weirs [McCarthy 1970:83] and yards for dingo puppies [Davidson 1954:518]. The transfer of place names and myths to newly-constructed sites by re-located Aboriginal groups suggests that arrangements could play a role in legitimising claims to territory [Tindale 1974:74]. Kimber [1981:13-16] described a number of so-called arrangements formed as a consequence of other activities. They include stones cleared aside to make sleeping places, stone steps up to caches of sacred objects, and cooking stones. Stones used to support wooden burial platforms (not to be confused with inquest stones) may also fall into this category [Love 1938:139].

The types of arrangements whose use has been attested include heaps, alignments or lines of stones, sometimes running parallel or radiating out, sometimes forming patterns and enclosures, circles (here including ovals for convenience), ‘table’ stones, single and upright stones, pits and walled structures of various shapes. The arrangements may comprise as few as one or two stones placed beside or on top of one another, or hundreds of stones laid out in lines running for half a kilometre [McCarthy 1970:59], or in elaborate ground patterns representing a Dreamtime battleground, as at Tunbai [Crawford 1968:43], a yam totem [Plate 6A] or the story of Jiningbirna the snake woman and her children [McCarthy 1953b:106]. Of these types, single stones, stones in trees, rock gongs and inconspicuous and jumbled groups of stones are least likely to be identifiable archaeologically.

Even more problematic for the prehistorian is the apparent lack of correlation between the physical characteristics of the types and their origin or use. This is particularly the case for arrangements of a sacred nature. Totemic beings metamorphosed into alignments, piles or ‘rubbing stones’ in the Rawlinson and Petermann Ranges of Central Australia [Gould 1966:2]. Arrangements for a particular totem may differ in form within one territory, as
is the case with barramundi increase centres near Walcott Inlet [Elkin 1933:467]. Inquest stones at the scene of a burial may be arranged in a circle or in a line [Love 1938:139 and Plate 6B]. A correspondence between the shape of actual stones or their arrangement with the subjects they represent may be demonstrable in cases such as eggs of birds, genitalia, faeces [Sharp 1934:27], a subincised penis or the long root of the wild grape [Love 1938:Pl. XIV A,B]. Figurative motifs in arrangement design are apparently rare. Examples which come to mind include the Macassan-inspired stone pictures in eastern Arnhem Land [Macknight and Gray 1970], supposedly crude human representations in Torres Strait [MacFarlane 1949:29] and a human foot in western Arnhem Land [Hossfeld 1966:61]. A circular arrangement of slabs enclosing two egg-like stones in north-west Queensland has been named 'The Emu Nest', but it is unclear whether this is an European or Aboriginal interpretation [Hill 1982:3].

The majority of stone arrangements do not lend themselves to such figurative explanations - the range of possible subjects is too great. Love [1938: 139], for example, noted that cairns had different meanings in different localities within Worora territory in the northern Kimberleys. They may signify a place where a Wandjina laid down and died, a mass of uncooked food, or a sneezing place onto which a passerby should place a spear or twig to avoid a sneezing fit. Aborigines in the Forest River District, also in the Kimberleys, marked a water-lily talu with a heap 2.1m in diameter and 0.9m high from which stones were thrown during the increase rite [Elkin 1933:478-9]. At Pukara, in the Gibson Desert, a watersnake totem increase centre consisted of eight small heaps, the largest being 0.6m high [Gould 1968:122-3]. In the secular sphere, heaps served as boundary markers, sometimes incorporating an upright stone [Tindale 1974:29]. As with heaps, circles may occur singly or in groups, and in combination with other types at totemic increase sites for species as varied as the hakea flower, nalgo nut and fish. At one barramundi site, two circles combined in a concentric arrangement [Elkin 1933:Pl.11 A]. A circle or oval of stones may be placed about a corpse on the first night of
funerary rites [Love 1938: Pl. XIII C].

Standing or upright stones, by virtue of their conspicuous shape and placement, seem to be particularly suited to marking boundaries (as noted above in association with heaps) and proximity to a sacred place such as a store of tribal objects [Love 1938: Pl. XI D]. They may, however, mark Dreamtime events and totemic species, as illustrated by the sinuous linear arrangements of upright stones belonging to the kangaroo totem of the Kantyu tribe [Plate 7].

Lines have a similar range of meanings in sacred contexts to types previously discussed. In addition they may demarcate areas of ground associated with mythical events such as the path leading into a rectangular enclosure forming the Tunbai battleground [Crawford 1968:43]. They may also indicate the route taken by mythological beings in the Dreamtime [Palmer 1977: 36]. Secular functions include supports for brush fences to trap emus [Tindale 1974: 106] and margins of cleared areas in wet weather shelters [Kimber 1981:14].

'Table' stone arrangements have been the subject of some interest because of McBryde's [1974:48,51] discovery of parallel arrangements at two sites near Ebor in New England. They consist of slabs of stone placed on stone blocks or 'tables' [Elkin 1933:468]. They are reported near Wandjina galleries and do not appear to have a non-sacred counterpart. However, their precise significance is unclear. Elkin [1930:269] reported that one example at Bindjibi meant rain. Pits dug into rock in the Kimberleys appear to share a similar purpose to talu pits in earth or rock reported elsewhere in north-western Australia [McCarthy 1970:82].

The ethnography suggests that the more built-up, wall-like structures had a secular purpose. They are commonly found as hunting hides or traps. They may be free-standing or built against natural rock features. The function of such structures is suggested by the degree of cover they provide the hunter, coupled with their proximity to waterholes and animal runs. Low stone walls may also
serve as markers of soaks or waterholes which might otherwise be bypassed [Kimber 1981:16].

This short survey of ethnographically attested stone arrangements in northern and central Australia indicates that it is often difficult to correlate the form of an arrangement with its origin or function. The exceptions would include the so-called 'table' stones (as sacred markers or mythic objects), walled structures (as markers or hides) and conspicuously-shaped stones (as mythic or commemorative objects).

Similarly, there is not enough evidence to suggest physical characteristics exclusive to sacred and non-sacred contexts. It was shown, for instance, that heaps and lines, singly or numerous, may function in either context. However, sites comprising one or more types of arrangements of stones (or earth), covering relatively large and usually bare areas of ground are generally regarded to be ceremonial grounds where the events in the mythical dramas took place and were re-enacted. As Mulvaney [1975:257] observed:

Examples are known throughout Australia, ranging from a few square feet to acres in area, and in the east were termed Bora grounds.

Their situation on claypans, lake beds, cleared areas of gibber plains or rock surfaces, their size, and the prevalence of heaps, linear arrangements and sometimes standing or upright stones to form patterns, pathways and enclosures distinguish them from the smaller sites. Not only do these extensive sites have greater archaeological visibility, but they also have a more obviously non-secular function. They are unlikely to be confused with economic stone structures, such as fish traps, which may display a similar variety in their pattern, because they lack direct association with any food resources. Similarly, their low height militates against their interpretation as hides or shelters. Apart from initiations, there is little available information on the ceremonies specific to stone ceremonial grounds. Some appear to have
shared a similar range of functions with certain smaller arrangements. A large linear arrangement, for example, served as a *talu* or increase centre in Ungarinyin territory [Elkin 1933: Pl. IVB]. The large ceremonial grounds would appear to have accommodated a group of people in contrast to the smaller totemic sites where one individual might have been responsible for the ritual [Elkin 1938:478]. Crawford's [1968:43] reference to the use of the usual Aboriginal stone arrangement for ritual dances and ceremonies implies group participation.

On the whole, early twentieth century ethnographers have paid little attention to non-religious principles governing stone arrangements. The significance of site location, construction and design, and affinity to other Aboriginal sites has not been adequately investigated. For instance, the presence or absence of cultural debris at or near stone arrangements, which might assist in assessing site function, is rarely commented upon. However, in a recent report, numerous lithic flakes were reported near a V-shaped arrangement, south-west of Port Hedland, known as a Dreamtime circumcision and sub-incision place [Palmer 1977:35].

Notwithstanding the characteristic locations of the large ceremonial grounds noted above, the general impression gained from the ethnography is that arrangements of varying function might be expected in similar environmental contexts. Totemic increase and mythological sites, hunting hides, sacred and non-sacred markers, as well as arrangements formed during domestic activities, would not be unexpected near food and water sources. Arrangements may occur in more conspicuous situations, such as on bare ground or rock, on cliff tops [Love 1938: Pl XI D], along a ridge [Plate 7] or less obviously on flat grasslands [Love 1938: Pl. XII B].

There is no information about the proximity of secret-sacred arrangements to lesser or non-sacred sites. Given the system of warning markers used and taboos restricting access to sacred territory, the two kinds of sites were presumably not close by. While seclusion of a site might be a useful criterion
for establishing cultural milieu, there is no means of gauging the distance to other sites without recourse to site records and site distribution maps. However, for reasons of religious sensitivity, plans of sacred stone arrangements are rarely published. One exception is that of the site complex at Lake Moore in Western Australia [Gould and Gould 1968: Fig. 5]. Domestic areas are shown to be only about 120m uphill from a sacred serpentine alignment on the lake shore. However, the problem of establishing contemporaneity between the sacred and the profane sites remains, as is also the case with arrangements found at or near art sites. Even so, at least one further context in which arrangements may have had meaning can be suggested by virtue of the association. Some mythological sites were deliberately located near unusual or distinctive topographical features, but proving the relationship is highly subjective without ethnographic evidence. There is insufficient information to suggest any correspondence between site location and types of arrangement.

As far as distribution is concerned, the ethnography suggests that a fairly high proportion of stone arrangements with various functions were in use at any one time in a tribal territory. Twenty-five stone ceremonial sites were reported amongst the Yir Yoront of Cape York Peninsula and these were supplemented by at least ten sites shared with other clans. Only six of the twenty-five sites were specifically for increase of species while a further six were for initiation or puberty rites. Just under fifty percent, or ten sites were described as historical in nature with no restrictions on access [Sharp 1934:26-8]. Regrettably, the physical descriptions of these sites were not published.

Apart from references to distinctive arrangement types, such as upright stones or 'table' stones [McBryde 1974: 51], a study remains to be undertaken of arrangements characteristic of northern Australia whose function was known and which might suggest regional traditions corresponding to linguistic or tribal, or more generally, cultural groups. In summary, the ethnography of northern Australia indicates that certain stone arrangements form a
significant component of a rich and elaborate ceremonial life characterised by totemic increase rituals, initiations, mythological re-enactments and other rituals. It might be expected that stone arrangements in eastern Australia reflect aspects of ceremonial life there in corresponding intensity, as well as a range of economic and domestic practices. It is obvious from the above survey that more detailed information about stone arrangements in a circumscribed area is required if comparisons between sites with varying physical and contextual characteristics are to be made, and if some understanding of their origin and purpose in ethnographically depleted regions is to reached. Furthermore, a standard method of referring to and analysing arrangements across the continent is necessary, and it is in this context that a classification of this class of artefact becomes important.
CHAPTER 3: THE TECHNIQUE OF CLASSIFICATION

Classification as an analytical technique for organizing archaeological data into a form suitable for drawing comparisons and for making inferences about past human behaviour is as applicable to structures, and hence monuments, as it is to portable artefacts [Rouse 1972: 40-41]. Furthermore, classification is of fundamental importance for the interpretation of archaeological evidence.

The technique has been a principal feature of monument studies overseas, especially with regard to megalithic constructions in Western Europe, although certain limitations have affected the success of its application. The usefulness of the technique is largely dependent upon the discernment of the classifier and the assumptions of his time or school of thought [paraphrase of Powell 1969:1]. According to Fleming [1972:57], typological classification is limited, firstly, by the difficulties in correlating a typological sequence with a chronological one, and secondly, by the dearth of explanations for the changes exhibited by the types. Moreover, as shown by Catherall [1972:147], new evidence may necessitate a new classification.

In Great Britain, investigations of monument morphology, design, construction and also location, have provided the basis of discussions of the problems of the origins of the structures, their antiquity, function, and to explain their variation, despite an absence of ethnographic information, and a dearth of associated artefacts and settlement remains [Burl 1976:7; Bradley 1984:6, Renfrew 1983:10]. Types considered to fall at the head of a series, or prototypes, for which there are few parallels, and rare and highly localized monuments, for instance, have been examined for evidence of changes in local design requirements which in turn may reflect social and cultural needs [Fleming 1972]. In one classification of henge monuments based on excavated internal features such as stone circles and burials, an evolutionary sequence
with apparent chronological significance has been suggested [Catherall 1972:148-9]. While the wide variety of architectural traits exhibited by monuments may militate against precise definitions or tight typologies, broad classes have been derived on the basis of recurring features such as entrances, in the case of henge monuments [Wainwright 1969:113-4] and shape in the case of stone circles [Thom 1967:136; Burl 1976:41-50].

In contrast, analysis of Australian stone arrangements has not proceeded beyond a very general level. Such scholarly neglect is partly explained by the various problems canvassed in Chapter One and is paralleled by a lack of interest in archaeological field survey. However, on a theoretical level, there remains a further problem of appropriate analytical approach.

As early as 1940, McCarthy [1940:188] highlighted a tension between what might be termed a strictly archaeological approach to the study of arrangements and an ethnographic one. He remarked:

... although stone arrangements may be classified into different types and such a definition is convenient for descriptive purposes, it is purely arbitrary, because it is not consistent with function. Each type is used for more than one purpose in the ritual associated with magic, religion, and mythology, and further, even to denote notable events in daily life.

The availability of ethnography in some regions as a source of information about contemporary arrangements has, to a certain extent, prevented a more objective and systematic study of their construction and purpose in prehistory, along the lines of European studies. Indeed, theorists have argued against so-called folk classification for studying past cultural phenomena, wherein descendants of that culture classify or interpret artefacts in terms of their own experience [Dunnell 1971:134-5]. Not only is there a likelihood of such information being misunderstood or distorted, which Palmer [1977:33,36] maintains has been the case with some Aboriginal information about stone
arrangements, but some explanations may prove unhelpful, as when classes of artefacts are assigned a supernatural origin [e.g. Love 1938:137].

The tension between approaches has been discussed at greater length in other areas of Australian prehistoric study and a few brief comments concerning this debate are relevant here. In the case of art, Clegg [1983:87] observed a trend over the last two to three decades away from an ethnographic approach towards an archaeological one, corresponded by a shift from typologies based on interpretation to those based on the description and analysis of carefully collected data. Dissatisfaction with the subjectivity and omissions on the part of ethnographers, together with a lack of informants with an unbroken tradition in most areas outside north and central Australia were seen as influencing this trend [Clegg 1983:87]. Classification of discrete characteristics in rock art has been considered useful for overcoming the problems of superficial identifications and for comparing figures, sites and styles [Maynard 1977:387]. Under Maynard's scheme, traits are selected from categories of technique, form, motif, size and character and they may operate independently to describe an individual figure or groups of figures [Maynard 1977: 390, 399]. This kind of trait analysis reveals a more systematic methodological approach to art, which on the one hand, requires a more detailed, internally consistent and unambiguous means of describing figures and styles than undertaken previously, and on the other, prescribes the labelling of figures as a classificatory device rather than as interpretation. Furthermore, trait analysis may detect the cultural, technological or functional factors which are considered to produce styles [Clegg 1977:262], defined as the sum total of traits in an individual figure or group of figures [after Maynard 1977:399]. This has enabled Clegg [1977:262-5] to suggest three functionally distinct art-site types in a study of selected sites in Cape York and Sydney, and Maynard [quoted in Clegg 1983:89] to propose a three-part chronological sequence based on style.

In stone tool research, dissatisfaction has been expressed with both formal
and functional classifications [e.g. Mulvaney 1977: 267; White and O'Connell 1982: 83-88]. In the case of the former, it was realised that formally distinct tools were rare, and that formal characteristics did not necessarily correspond with tool function. In the case of functional classification, there has been a lingering uncertainty, not dispelled by ethnographic observations of tool use, surrounding the function and even multiple functions of many prehistoric implements. Not all scholars [e.g. White and O'Connell 1982:86] agree with Mulvaney [1977:267] that traditional typology may have a purpose in explaining cultural preference for fashioning a tool in a particular way. In response, analytical and often elaborate statistical approaches have been undertaken which involve the selection of a wide range of attributes (descriptive, technological, geographical and so on) from which types may be derived. Alternatively, investigations of microscopic use-wear, raw material and the technology of tool manufacture, each of which requires a different classification of the stone artefacts being studied, have been promoted [White and O'Connell 1982: 83-8]. Raw material studies, for instance, suggest that attributes of artefacts are influenced by the quality and availability of stone to the extent that certain tool classes may be correlated with rock types or proximity to rock sources [White and O'Connell 1982:85]. It becomes obvious, therefore, that no one classification will suffice to organise the many characteristics displayed by the material. Rather, certain attributes are chosen to address questions or problems [Dunnell 1971:64], and consequently various classifications of the same body of artefacts may result using different data, such as those relating to manufacture, styles and chronology. However, as the art and stone specialists have emphasized, a standard nomenclature and methodological practice are prerequisites for any classification in any discipline [eg.Casey et al.1968:24; Maynard 1977:388]. A close systematic examination of the attributes of Australian stone arrangements and their classification has yet to be undertaken.

Only two classifications based on an Australia-wide survey of Aboriginal
stone arrangements have been published; namely McCarthy [1940] and Lane and Fullagher [1980]. They illustrate a dichotomy in theoretical approach. McCarthy follows an essentially inductive approach, utilising morphology and construction technique. For their part, Lane and Fullagher deduce a typology based upon function. In both cases, the results are marred by internal inconsistencies and a lack of explicitness.

McCarthy [1940:184] classified arrangements into: 1) fish traps, 2) monoliths, 3) heaps and cairns, 4) circles and lines, and 5) elaborate arrangements which combine 2) and 4). This list is a *mélange* of types derived on the basis of function (in the first case), shape (2 and 4), mode of construction (3) and degree of detail (5). Later, in his discussion of Western Australian types, McCarthy [1970:82-3] augmented the list with ethnographically attested functional types, such as stone markers in trees, rock gongs and hunting blinds.

The derivation of stone arrangement types at a regional level displays similar inconsistencies. Morwood [1982:52], for instance, includes heaps under the category of shape, and then uses the latter criterion to differentiate arrangements in south-central Queensland. In South Australia, heaps were classed according to regional distinctiveness, such as the Waroonee type, and raw material, as in the case of pebble mounds and stone slab cairns [Mountford 1940: 286; Pretty 1970:43-4]. At Mt Olga, Central Australia, two types of ovals were identified according to shape and additional features [Pringle and Kollosche 1958]. In Tasmania, Cane [1980:5] constructed a typology based primarily on construction method and secondarily on recurring and measurable features such as plan and rim characteristics. On a more qualitative level, McCarthy [1970:18-9] drew a distinction in New South Wales between simple types meaning rough heaps or cairns, and elaborate types in which a number of individual types were combined. However, a gradation from simple to elaborate or complex types has not, to date, been analysed in detail. Indeed, some sites comprise a number of heaps arranged in groups or patterns which may be
validly categorised as 'elaborate' along with sites composed of lines and circles. This means that McCarthy's general observation [1970:18] that arrangement types in New South Wales become more elaborate the further from the coast they are, may require verification.

McCarthy's broad classification remains in use despite the lack of detail about the types. There has been no analysis of the five individual types since they were proposed. Regional variations have been detected at a gross level only. For instance, elaborate sites were noted as absent in South Australia, although present in western New South Wales [Pretty 1970: 43], while heaps appear to predominate in mountainous regions [McCarthy 1970:18]. Similarly, low cairns, generally less than 0.5m high were common at New England sites, but their significance as a heap type has not been investigated [McBryde 1974:45].

A prominent omission in stone arrangement studies is the lack of attention given to the so-called elaborate sites. While certain features appear to recur with some frequency, such as circles and parallel lines, which may form passageways and enclosures, there have been few complete descriptions and no classificatory studies of them published. To assign them to a broad functional category (to be discussed below) such as 'ceremonial site' is inadequate in view of their wide distribution especially in the more arid parts of the continent, and the wide range of motifs or designs they exhibit. References to local stone arrangement styles or traditions, unique, rare or common types and other illustrations of diversity warrant closer scrutiny. The possibility that the design of some arrangements may correlate with the design (one or two circles joined by a passageway) of earth bora rings has been realised but not been subjected to analysis.

The functional categories proposed by Lane and Fullagher [1980] also suffer from a lack of specificity. These categories are 1) artificial dams, weirs, dykes across water courses, 2) fish traps, 3) hunting hides, 4) direction indicators, 5) tribal boundaries, 6) hearth stones, threshing floors, 7) shelters, 8)
petrographs and 9) ceremonial. According to the authors, function may be derived on the basis of information gained from Aborigines, inferences from ethnographic analogy, archaeological data, form and content, or from a combination of these sources. This approach is valid insofar as it provides a theoretical framework, a functional typology, against which the data may be tested. However, the analysis as presented is incomplete. It provides no guidelines as to what attributes of stone arrangements are useful for deriving what function. To paraphrase Gardin [1984:73], the next step would be to find from amongst the intrinsic properties of the artefacts, pertaining to shape, fabrication or ornament, those which show maximum co-variation with the functional class. The importance of this step becomes apparent when one considers the number of arrangements whose function and antiquity are uncertain or unknown. Furthermore, no assessment is made of the reliability or usefulness of the information gained from the respective sources noted above, or how details from one source, say anthropological research, corresponds to details from another source such as the archaeology. As with functional classification in other prehistoric studies, no provision is made for explaining the characteristics of stone arrangements, other than in functional terms. The opportunities are thereby limited for investigating variations in form, location, archaeological context and so on, in terms of cultural preference or time difference.

Indeed, establishing the Aboriginal identity and the purpose of stone arrangements can be a difficult procedure and is best dealt with in a circumscribed study of arrangements and their context, such as that undertaken by Cane [1980] in eastern Tasmania. The dearth of artefacts he collected from 249 stone features suggested a minimal Aboriginal presence, while at only one site did he find a proven association between an Aboriginal artefact and a stone formation [Cane 1980:137]. Furthermore, ethnohistorical information about human activities on the pebble beaches was scant [Cane 1980:124ff]. Thus Cane's classification organised a diverse and numerous class of material,
whose origin and function were unknown, and which had few parallels elsewhere in Tasmania or on the Australian mainland. His analysis illustrates the relevance of a formal approach to stone arrangements as a preliminary to speculating about their functional classification. This is not to suggest that his analysis showed a correlation between formal or descriptive type and function. On the other hand, there was an indication that the combination of formal types was functionally significant. A number of issues arise from this observation which are relevant to the present study.

The first issue deals with the selection of attributes. According to Dunnell [1971:131-2]:

Only those attributes which can be assumed to be the result of human activities are useful, ...[as] Prehistory assumes that attributes which are the products of human activity and which recur over a series of artefacts can be treated as manifestations of ideas held in common by makers and users of artefacts.

Whilst Cane was able to justify the assignation of most of the well-defined formations to a human origin and therefore his principal types (eg.mounds and pits) were valid, his choice of attributes to derive sub-types is more open to question. Indeed, he conceded [Cane 1980:117] that the pit sub-types were descriptive units only and he presumed no cultural, stylistic or functional meaning. This was borne out by his lack of reference to sub-types in his discussion, where the most useful analytical unit appeared to be the type. Thus, when he compared some pits with hut depressions recorded on other Tasmanian coastlines, he did not mention their sub-type [Cane 1980:141]. Similarly, Cane [1980:139] suggested that some mounds and larger pits may have been hunting-hides without referring to their sub-types. Closer analysis supports the impression that correspondence is lacking between sub-types and the presumed origin or function of a site. Pits with a continuous raised rim occurred at the three Bay of Fires sites which, Cane [1980:149] proposed, were Aboriginal ceremonial sites. They were also present at the Actaeon Island site
which he thought more likely to be European [Cane 1980:61-3,149]. The size and shape of types also does not appear to distinguish between formations of different origin or function. On the whole, there is no formal distinction between types of mounds or pits from sites deemed to have an European or Aboriginal origin.

However, there did seem to be a correlation between the variety of types at one site and possible Aboriginal origin [Cane 1980:144]. The principal examples were the Bay of Fires sites and the two sites at Bluff Hill Point. At the former sites, alignment, pit and mound types were present [Cane 1980:12-44]. At the latter sites, the types were mound, pit, pebble enclosure, pebble ridge, linear depression, path and enclosure pit [Cane 1980:92-114]. In contrast, the suspected European or natural sites of Actaeon Island, Bennetts Point, Jacobs Boat Harbour and Iron Stone Creek consisted of one or two types only [Cane 1980:61-3,68,81-2,69 respectively]. The comparatively 'elaborate' nature of the two possible Aboriginal sites agrees with that correspondence between elaboration and ceremonial function noted at certain Aboriginal sites on the mainland.

In summary, Cane's classification suggests that the formal attributes of stone arrangements at a broad level (here being the type) rather than at a more particularistic level (sub-type) are the most useful when speculating about the function and origin of a site. Furthermore, the classification indicates that it is the combination of types which may be informative. Differentiation of the characteristics of individual arrangements, however, might theoretically be useful in a study of inter-site or intra-site variation. The unique occurrence of all three pit-types at the Bay of Fires, for instance, could have cultural significance [Cane 1980:118]. However, such an analysis requires, firstly, that the Aboriginal origin of the sites be confirmed, and secondly, that the characteristics chosen to define sub-types be authenticated as artificial.

The second issue refers to the comprehensiveness of classifications. With reference to Dunnell [1971:123]:
To conceive of data as unique or 'idiosyncratic' is to abandon any attempt at explanation ... From the onset phenomena are assumed to be unique, and the problem is to categorize them so that they are no longer unique and thus capable of explanation.

However, as classifications by Cane [1980:151] and others show, not all artefacts are readily classifiable according to the chosen criteria. Cane's atypical examples, such as pebble ridges and enclosures, walls and pathways were comparatively rare, and he found it difficult to analyse them beyond mere description. Even Maynard [1977:399] admitted that her system of terminology was designed to describe the normal visual characteristics of Australian rock art, and that exceptional figures would require individual treatment. One is reminded here of a comment by Taylor [1948:118], which may be juxtaposed against the above quotation, that the variability of phenomena may be too great and too general to permit it being represented by an abstract type or types; and that this may be culturally significant.

It is interesting to note the omission of one category of arrangement from McCarthy's list of types. It includes groups of elongated or peculiar-looking stones [Love 1938:138], and individual stones which are distinct from standing stones or monoliths [Cane 1984:183]. Superficially, such stones are unique since they often occur singly and rarely look alike. However, the repeated practice of setting or placing conspicuous stones warrants their inclusion in the present study.

Ideally then, a classification of arrangements should be able to cater for 'typical' and 'atypical' examples according to a stated set of principles. The categories of the classification should, as Maynard [1977:389-90] has emphasized, operate independently of the individual artefact, thus avoiding the problem of creating new categories when a new combination of characteristics is discovered.

In the remainder of this and the next chapter, the possibility of an
Australia-wide classification of stone arrangements will be investigated, based on an examination of the intrinsic and extrinsic properties of selected examples. It necessarily differs in scope from Cane's Tasmanian study, in that the examples are taken from a wider geographical area, belong to diverse environmental contexts and exhibit a greater variety of form, both individually and in combination. However, as similar problems exist regarding the identity and function of some sites, the approach taken is firstly description and definition followed by a discussion of the possible cultural significance of various characteristics of arrangements. By organising the data into classes or types, it is hoped that the variety or homogeneity of arrangements within a site, locale or region may become apparent. It may then be possible to hypothesize about the significance of, or reasons for, any patterning of classes. In the course of this analysis, a standardised nomenclature will be promoted.

The 144 sites in the sample are drawn from four geographically and topographically distinct regions according to selected 1:250,000 maps [Figure 1]. The total area involved is about 28,500 sq.km [Table A.1]. The various situations of stone arrangements may thereby be examined in terms of local and regional geography. Furthermore, archaeological and ethnohistorical investigations of Aboriginal culture in these regions provides contextual information. Variations amongst stone arrangements may thus be compared with variations in the regional culture. The existence of stone arrangement traditions may also be examined. In addition, the regional approach provides the opportunity for comparing arrangements in southern New South Wales which are not well known, with those in the more intensively studied areas.

According to one definition, an attribute is the smallest qualitatively distinct unit involved in classification [Dunnell 1971:49]. While an artefact may have an infinite number of possible attributes, a classification necessarily requires the selection of a finite number pertinent to the problem at hand [Dunnell 1971:52]. Of importance to the present study is the observation that
attributes may operate in more than one scale. On the one hand, they may define a discrete object. On the other hand, discrete objects may function as attributes to define an aggregate of discrete objects [Dunnell 1971:152]. An illustration of this is where a stone arrangement site consists of a number of arrangements, each of which may be defined individually or as a component of a composite arrangement. Alternatively, there are single sites defined by one arrangement only, one heap, one circle and the like. These two scales thus present one of the dilemmas to be faced in classifying Australian stone arrangements. Another dilemma concerns the selection of attributes which are demonstrably products of human activities. To partly paraphrase another scholar [Rouse 1970:186], attributes ideally should indicate modes, which conform to a community's standards, which express its concepts, or which reveal its customary ways of manufacturing and using artifacts.

For the purposes of this study, attributes are selected from the modes of manufacture and morphology. Construction method is seen as a response to the requirements of site function, site location (including availability of raw material) and culture, which governs the manner or tradition of building in a certain way. Thus, circles composed of a series of heaps may have been functionally or culturally distinct from circles made from single stones aligned in one course. Alternatively, the difference might have been caused by the varying availability or the size or shape of the stone in a particular location. Similarly, form may illustrate variations or homogeneity in single or composite arrangements which are culturally or functionally significant, and may assist, as may also be the case with construction method, in establishing origin in ambiguous cases. Furthermore, form may be influenced by spatial or raw material limitations.

In the case of discrete arrangements, form specifically refers to plan, which was the most commonly occurring formal attribute described in the site
records. Unfortunately, plans of composite sites were not readily available to the writer. Profile was not included as an attribute because of its unreliability for classification purposes. Profile was not given in many cases, and it is generally more susceptible to alteration than plan. Heaps, for instance, may subside which can result in a more rounded profile and wider base.

Attributes of size were noted but do not define classes. Again, dimensions were not always adequately recorded, and site-area only rarely. However, the possibility of size defining sub-classes will be investigated. A correlation between certain shapes and sizes may indicate conventions governing the size of some arrangement classes, which may be culturally or functionally prescribed. The dimensions of circles, for instance, might suggest their likely capacity and purpose. Studies of earth circles in the Moreton Bay region of southern Queensland have shown, in conjunction with ethnohistorical accounts of initiation ceremonies, that the larger of the two-circle sites normally had a public function, while the smaller ring was reserved for a select group of participants [Heather 1983:21ff.]. The bi-modal distribution of earth circle dimensions was considered to be functionally determined [Heather 1983:49; Steele 1983:28]. Similar studies of stone ring circularity in Great Britain have prompted hypotheses about the kind of ritual enacted there [Fleming 1972: 58–9]. Similarly, heap size may have been governed by the need for conspicuousness or it may be a chronological indicator in cases where stone was habitually added over generations.

Once stone arrangements are defined in terms of their construction and morphology, their locational characteristics may be investigated. There is sufficient evidence from overseas regarding the siting of megalithic structures [Powell 1969:3], and in Australia in the case of earth circles in the Moreton Bay region [Heather 1983:98], to suggest that certain locations were preferred for certain monuments. Consequently it may be possible to show a correlation between some landforms and site types, which in turn may suggest the function
of the latter. Some distance from water is in inferred by some topographical locations such as mountain summits, which in turn implies that close proximity to water was not as important as position in certain cases. Topographical location was chosen to illustrate the characteristics of site location, since it was considered to be less affected by changes to the landscape subsequent to European contact, and also because of the varying quality of locational information in the site reports. Nine categories, including an indeterminate one, were identified [Table A.2].

Basically, stone arrangements were produced by the addition or removal of stone. As outlined in Figure 2, additions may be made by heaping up stones, and by placing them upright or horizontal. The removal of stones involves the pushing aside or digging out of stones to form a clear space. Sometimes it is difficult to discern the construction method from site descriptions. As the action of removal seems largely to have been necessitated by the extreme stoniness of a location [Plate 8], the distinction between the arrangements so formed and the others may not be so important. For the purposes of this classification, the distinction in the mode of constructing heaps and heaped arrangements will not be emphasized.

The classes of arrangement are defined as follows.

**Heap**

Various terms have been used to refer to the construction of multi-coursed arrangements. In general, cairn, heap, pile and mound have been applied indiscriminately. While some scholars have applied the term 'ca’rn' to pyramid-like structures [Mountford 1940:286], others have used it as a synonym for heap or pile where rough and loosely packed constructions were the subject [McCarthy n.d:2]. Alternatively, there is a case of a prominent pyramid structure [64] designated as a pile [Towle 1939a:203]. Cane [1980:7] sought to overcome the problem by using the single term 'mound'. However, as
mound may in some contexts carry the connotation of burial or oven mound, the term 'heap' is preferred in the present study. Although heaps are prone to subsidence, as already noted, it may be possible to sustain a typological distinction between those exhibiting care and planning in the selection of stone and in their execution, and those which seem but a jumbled collection of various-sized stones. The so-called 'Warooonee' type or stone slab cairn, is one example of a well-built hollow structure built up to 1.5m high by setting tabular stone slabs at right angles, and which is confined to a particular region in South Australia [Mountford 1940:286; Pretty 1970:43]. This type is distinguished in the same region from large, solid heaps over 7m in diameter made of cobbles, and usually located between valleys [Mawson and Hossfeld 1926:22-3]. The careful construction of some heaps, however, has fuelled speculation about their date and origin. Surveyors' trigonometrical stations and military posts are amongst the identifications proposed. Furthermore, there has been some confusion between clusters and heaps of low height. There seems to be a case for re-designating some low heaps as clusters, because they are only one-stone high. This problem will be discussed in due course.

**Heaped arrangement**

A heaped arrangement is defined as a wall-like structure built in the same manner as a heap. In one sense, it may be described as one heap stretched out in a line, and so it delimits an area rather than marks a spot. As in the case of site 135 and a site in the Gibson Desert [McCarthy 1970:83], they may incorporate naturally occurring rocks to form a longer more substantial barrier. Other examples include the stone houses and walls associated with the Lake Condah trapping systems in Western Victoria [Coutts et al.1978:1], dry stone walls reported by Cane [1980:115] in eastern Tasmania, as well as structures identified as hunting-hides in Central Australia [Kimber 1981:17; Smith 1982]. The carefully built-up stone rows in some structures have, once again, suggested a European origin [116].
**Upright stone**

This class comprises stones placed upright with the longest edge perpendicular to the ground. Such stones are characteristically tall and slender, sometimes tapering towards the top, although rectangular and irregular-shaped upright stones are reported. Upright stones may be supported by smaller stones, be wedged into a rock fracture or set in the ground.

Miscellaneous placed stones, alignments and clusters, were all one-course arrangements formed by the placing of stones in a horizontal plane as opposed to setting upright or heaping.

**Placed stone**

Placed stone arrangements consist of one or more stones placed in a conspicuous position propped up by other stones, set in the ground or near a contrasting feature. The definition is a broad one for what might otherwise be a miscellaneous category of stones. The following examples give some idea of their character and variety: small stones laid on large blocks (some referred to as table-like); a seat-like arrangement in which a slab was placed horizontally across smaller stones or blocks; curiously-shaped stones placed together or singly; stones found in association with one another with no outstanding characteristics except the suggestion of artificial placement. The identification of many arrangements in this category depends upon the existence of artefacts including definite artificial arrangements in the vicinity.

**Alignment**

An alignment, on the other hand, is a row of stones in which one stone is placed after another. An alignment may form variously-shaped outlines, may enclose or partly enclose and divide areas. Naturally occurring rocks may also
be incorporated in this kind of arrangement. Alignments may exhibit the choice or local availability of like-sized stones.

Cluster

A cluster is an arrangement of stones laid together in a group to mark one spot. The grouping may be compact, so as to form a 'pavement' or flat mosaic surface [53], or be loose in formation. The stones in a cluster do not overlap to the extent of being heaped, and are not aligned. Some heaps which reach no higher than three inches [7.6cm] as at site 11, might be better termed clusters. Similarly, low arrangements described as stone scatters might be conveniently designated loose or less compact clusters [McBryde 1974:34, no.37].

Two clusters are reported to have consisted of six stones lying close together [2], while in a recent excavation report, the term 'cluster' described groups of stones, from 1-2m in diameter consisting of 27-81 stones. Ferguson [1981:626-28] suggested that the stones were originally arranged on a horizontal plane as illustrated by the one cluster excavated. Towle [1932-33:42 n.1], who made frequent use of the term 'cluster', defined it as stones not piled into heap, but lying on the surface of the rock. He also observed that some clusters would be taken to be natural if not for the nearness of other arrangements.

Secondary or clearance arrangement

This category of arrangement includes simple cleared areas of ground to show something unusual in the bedrock [Cane 1984:183] or to provide a sleeping place [Kimber 1981:13]. There are other arrangements which appear to be counterparts of alignments, wherein stones are pushed aside to form thick, sometimes multi-course rows at the edge of cleared corridors and circular areas. Heaps may also be formed in this way. The present sample of sites included no well-defined examples, although there are well-known sites, such
as Pindera Downs [Plate 8] on the stony plains of western and north-western New South Wales, and unusual heaped or dug out circular enclosures at Kempsey in New England [Brayshaw 1978]. Apart from the suggestion that one small heap at the end of a line of heaps in western New South Wales had resulted from path clearance, there was little upon which to base a discussion of this class of arrangement in the present study.

Pit and channel

No examples of these classes were identified in the study sample. Cane [1980:117] described at some length pits made by removing stone on pebble beaches. He divided them according to the presence and extent of rims raised above the beach level. There are references elsewhere to stone-lined pits and pits dug out of solid rock [McCarthy 1970:82]. Canals belonging to the Lake Condah trapping-complex have been described as channels excavated into basalt bedrock, and along with stone races or above-ground walled channels, generally follow drainage lines [Coutts et al.1978:12,24].

In the following chapter, the various arrangement classes will be discussed with regard to sites in the four sampled regions, and they will be further defined by certain morphological traits. For some unidentified arrangements, these traits were estimated from photographs, plans or dimensions. A diameter measurement, for instance, was taken to indicate a circular shape. The traits fall under two categories, open and closed. In the former, the traits relate to shapes which do not, or only partially enclose a space. They may be subdivided into curved and straight shapes. Examples include single lines, parallel lines and semi-circles. In the closed category fall traits of closed shapes. These include circles, ovals and oblongs. The following discussion will also describe arrangements as components of sites.
CHAPTER 4: TOWARDS A CLASSIFICATION OF AUSTRALIAN
ABORIGINAL STONE ARRANGEMENTS

In this chapter, the task of classifying Australian Aboriginal stone arrangements is approached in two stages. In the first, the data from 144 recorded sites in New South Wales are organised into the technological classes defined in the previous chapter. These classes are divided, where appropriate, into morphological categories or types. In the second stage, various site-types are identified according to the combination of arrangement classes present at each site. In each stage, reference is made to the topographical location of arrangements with view to establishing correlations between classes, morphological types or site-types, and location.

In the first part of this discussion, the arrangement classes are considered in turn. More attention is paid to the heap and alignment classes, however, as these occurred in the highest frequencies.

Heaps were found at the greatest number of sites in each of the four regions compared to the other arrangement classes [Figure 3] and were usually in elevated positions [Table B]. As far as the size of heaps was concerned, few exceeded 3m in greatest horizontal measurement and 0.5m in height [Figure 4]. As a general observation, heaps with the greater dimensions were located in WNSW and CNSW [Plate 9A], while, by contrast, heaps in NE fell into the smaller categories [Plate 12B, Figure 5]. Exact comparisons are difficult to make since dimensional information especially for the larger heap sites, is not always complete. For the easier recording of heap dimensions, the following standardised nomenclature is proposed:
The term extra large could be used at the recorder's discretion for heaps of unusually large size, such as those reported in South Australia to be 7m in diameter at the base and estimated to contain 37,000 stones [Mawson and Hossfeld 1926:23]. With regard to height, the already commonly used term 'low' would apply to heaps less than 0.5m high, and 'average' to those 0.5m-1m or so high. For exceptional cases, such as the 1.8m high heaps recorded by Grey [1841:227-7] in north-western Australia, special reference could be made to their height.

Morphologically, heaps are divisible into various types [Table C] which does not necessarily reflect their original shapes in every case. The most common morphological type was circular heap [Plate 12B], followed by irregular heap. This latter category refers to heaps whose original shape has been disturbed. The remainder occurred comparatively infrequently and consequently were more restricted in distribution. It is relevant to note that Cane [1980:116] found that the majority of mounds in his Tasmanian study were also circular which suggests a conceptual link with mainland examples. Heap sites in NE showed the greatest morphological variety amongst individual heaps [Plate 13B], but this may be a reflection of more accurate reporting. In CNSW, for instance, heaps at over half of the sites were not described.

Heaps in the sample displayed a number of additional features at some sites which may or may not be original and which as a result are not used in the classification to define sub-types. These features included depressions in heaps [90,102,130], and construction over earth mounds [27,28], around the base of trees [site 68, Plate 13B] and in earth basins [84].

Heaped arrangements occurred at only 13 sites in the sample, mainly in NE and SNSW [Figure 3], and were invariably in high locations. The most common types were linear and U-shaped. The former type may be described as wall-like,
extending in linear formation over some distance. One example was the Tuntable Falls built-up pathway approximately 50m long [6]. U-shaped heaped arrangements ranged in width from 5m-11m and were thus larger than the average heap.

Upright stones featured at 12 sites which were usually at a high altitude [Plate 11A]. Most of these sites were in NE, followed by WNSW [Figure 3]. At two sites in NE [32 and 33], upright stones were a principal feature. Included was an unique star-like formation made of slabs [Plate 11B]. In yet another unparalled arrangement [5] in that region, one upright stood at the end of two spirals. None of the sampled upright stones exceeded 1m in height and thus cannot be compared with ‘monoliths’ found in Europe at such sites as Stonehenge.

The so-called placed stone arrangements were, by definition, difficult to categorise. Four sites, all at some altitude in NE and SNSW, seemed to have stones which did not fit any pattern. McBryde’s ‘seat’ and ‘table’ stones featured at the northern sites [32,33]. A further site [138] in SNSW could also be described as table-like, as small stones had been set on large boulders. Unusual-looking stones, including one whose shape was reminiscent of a human profile, were found singly or in clusters and may constitute another type. They were identified at the NE sites.

Alignments featured at one third of the sampled sites and thus were the second most numerous class [Figure 3]. Those in CNSW and WNSW tended to be in low, flat locations while in NE and SNSW, there was a decided preference for very high locations. This dichotomy generally reflects the respective regional topographies, although as will be discussed later, open, cleared spaces are likely to have been a prerequisite for sites such as these, and therefore would have been a determining factor in site location. Regrettably, a large number of sites with alignments, especially those in WNSW which contain a variety of examples, either have not been recorded in detail or have been published in sources not made available to the writer. Consequently, the morphological
types described here represent only a small proportion of the actual range.

Open alignments took a variety of forms. The most common morphological types were single or parallel lines [Plate 15]. Apart from joining other arrangements [32, 82], lines may also connect natural rock outcrops [103]. Excepting one remark on the orientation of a single straight line [66], there have been no published studies of the significance of alignment orientations either with natural or man-made features or with celestial bodies.

There were insufficient data with which to discuss the dimensional characteristics of open alignments, but the sample indicated that single lines may exceed 50m in length. On Mt. Namadgi in SNSW, there were three sets of parallel lines described as 'corridors', each set on a sloping rock slab [Plate 16B, 17]. It was difficult to tell if these were originally open-ended as snow creep may be responsible for the collection of stones across the lower ends of each corridor. They averaged about 19-20m long and 2-3m wide. Elsewhere, there are examples of parallel lines up to 40m long.

Radiating lines fell into two groups. In the first, the lines or rather 'arms' were short, about 1m long, and were attached to a small enclosure [126,140]. In the second group, the lines formed an extensive arrangement [75, 85]. The remaining types, including semi-circular and U-shapes, were uncommon in the sample. In some instances, these shapes may have resulted from the incorporation of a natural feature in the design, such as a tree [68] or rock depression [9, 38].

Sites with closed alignments or enclosures [Table D] were as frequent as the open variety, although they were generally found at lower elevations. This is understandable when it was considered that proportionately more of these sites were located in the less mountainous regions, WNSW and CNSW. The predominant types were circles and ovals, represented in all four regions. As shown in Figures 6-7, most circles for which dimensional information is available, were less than 10m in diameter. The largest were in NE [10,34]. Ovals shared a similar dimensional range although most were less than 6m in
greatest diameter. The significance of these sizes for drawing comparisons with earth circles will be discussed in due course. Where a circle was associated with an oval, it was noted that the latter was the greater in size which might reflect a functional difference. At one site [88] the disparity in size was some 17m. It is highly likely that larger circles and ovals are to be found in WNSW, judging from some of the sketch plans and photographs of extensive arrangement sites consulted by the present writer.

It was difficult to determine if the irregular shape of some enclosures was due to disturbance or was original. They were smaller than the oval and circular types. The two instances of the crescent shape suggest that this was not a common type, although it has at least one parallel at Carisbrook in Victoria [Lane and Fullagher 1980:Fig.34]. This type may have been related to certain parallel line alignments, and are not dissimilar to the now closed corridor-types on Mount Namadgi [120] mentioned earlier. The single enclosure at Mundamia Creek in SNSW agrees with the latter in size.

Examples of joined ovals and circles were only found in SNSW in the sample although McCarthy [1970:19] commented on their being a distinctive form in western New South Wales. It was noteworthy that the set of ovals on Mt.Sturgiss [125] lay in the same district as the divided oval on Mt.Endrick [126,Plate 14B], although the latter enclosed a larger area. These types were characteristically located on high, exposed rock surfaces.

In contrast to the circular types, square and oblong enclosures were less common and more restricted in distribution [Table D.2]. Dimensionally they fitted within the range of the circular types [Figure 3]. Significantly, at all but one of these sites [82] there were also circular enclosures, suggesting that one type was not necessarily a substitute for the other. It may be hypothesized that each had a different function or that one type was a later addition.

Finally, there were a number of miscellaneous curved and angular enclosures such as kidney-shapes which are difficult to classify without more information. They were usually joined to other alignments to make some sort of
Features associated with enclosures included heaps at either end (Plate 9B) and a median line (126a, Plate 14B), an internal cross alignment (76), internal lines which made a cartwheel design (21), an internal heap and small circle (64) and trees in the circumference (68). There was some indication of purposeful orientation at some sites in CNSW and SNSW (such as 69, 86, 126) which appeared to be on an east-west axis. More research is required to determine whether or not these orientations are a cultural or functional trait.

The combination of open and closed alignments differed from site to site rendering it difficult to detect any recurring patterns. The majority of these sites was located in WNSW. As expected, most sites contained ovals or circles, while at only two sites were there angular enclosures. At four, possibly five sites, enclosures were joined to parallel lines, suggesting that the latter functioned as passageways (18, 21, 46, 61, 82). There were also instances of single lines were joined to enclosures (18-21) which may indicate a similar purpose to that of connecting parallel lines.

The characteristics of stone arrangements with enclosures and lines are of particular interest in view of comments made about the overall distribution pattern of arrangements in eastern Australia in relation to earth rings. Functional relationships have been postulated but not proven. McBryde (1974:29-30) for instance, doubted if stone arrangements in her New England survey were comparable to earth rings, as conceptually (in structure, morphology and location) the sites were dissimilar. As noted earlier, few sites in the present sample in NE contained features resembling those of earth bora grounds. There were only two circles, both isolated sites, a further circle made of heaps and only one case of parallel lines [32]. One of the circles [34] may have had a track leading to it. Dimensionally, it fitted into the smaller ring category as defined by Steele (1983:28), that is 7m-17m. The remaining circle [10] would fit into the large ring category, defined as 15m-33m. The heap circle on the other hand, greatly exceeded Steele's range and is thus not
strictly comparable.

The comparative rarity of stone enclosures in NE contrasts with the numerous earth rings recorded in the river valleys and coastal strip of north-eastern New South Wales, and also with the records of stone 'boorl' rings once present in the Tweed River valley [McBryde 1974:55; Sullivan 1964:137ff.]. It is likely that the boorl rings were direct and localised counterparts of earth bora rings, as ethnohistorical accounts confirm their use in initiation ceremonies [Sullivan 1964:137ff.]. None of the stone arrangements in the other sampled regions showed characteristics which corresponded directly with earth ring sites. They varied in shape and number of enclosures, in dimensions and type of arrangements present, which possibly reflects more localised cultural traditions.

However, those sites with alignments in WNSW and CNSW containing passageways and single lines leading to enclosures suggests some conceptual links with earth ring sites bearing similar morphological traits. With regard to one such trait, enclosure entrances, at only two sites [46,82] was there clear evidence of an opening connected to a passageway. One further oval [22] had an opening but no obvious passageway. It is not inconceivable that some sketch maps are generalised to the extent that breaks in the outlines of alignments are not shown or that the original gaps have become filled with stones over the years. Other evidence such as spaces left at an end of an oval [126] and traces of a track [34] may also point to the presence of an opening.

As detailed analysis had been undertaken on earth rings in south-eastern Queensland [Heather 1983; Steele 1983], the present writer took the opportunity of investigating further the possible relationships between earth circles and stone arrangements. The latter were found mainly in the foothills and plains west of the Great Dividing Range and were notable for their absence in the immediate area of Brisbane, where earth rings have been reported. Thirty-five arrangements were examined on the basis of the state site records. Of these, 16 contained enclosures formed by alignments. Morphologically, they were
similar to those recorded in the NSW sample, although there were no angular enclosures (oblong or square). In dimensions and number of rings, they were also comparable, with one ring, two ring and multi-ring variations. Similarly, the dimensions of the Queensland arrangements did not conform with those of the earth rings on the coast. All but one ring fell either within Steele's small ring range or were even smaller. The exception was an unusual ring of stones set about the perimeter of a large earth ring on the coastal plain [Brisbane Arch.Br.KB:52]. In summary, the stone arrangements in south-eastern Queensland displayed similar variations from the one and two ring morphologies and dimensions of earth circles as analysed by Heather [1983], as did the NSW stone arrangements, which further supports the notion that the difference between the two kinds of sites was not necessarily just one of raw material.

The last class to be discussed is cluster. Clusters were present at slightly more sites than were upright stones and heaped arrangements [Figure 3]. It is doubtful if their number reflects the correct density of sites with this class. As noted earlier, some of the low heaps recorded in NE may in fact be clusters. Furthermore, stone hearths, which are often structurally and morphologically clusters, have been recorded as campsites rather than as stone arrangements, thus falling outside the ambit of this survey. Consequently, the number of clusters described here should not be taken as representative or culturally significant in any way. Morphologically, clusters are divisible into a range of types similar to heaps with circular and irregular types the most frequent. Dimensional details were scant, but they seemed to fall within the diameter range of 0.5m-1.5m, and were therefore smaller on average than heaps.

In the preceding discussion, the stone arrangements in the sample were organised into classes and described in terms of their morphological and locational characteristics. In the next stage of the classification, the classes are organised into three basic site-types according to their combination at
each site.

Sites displaying a number of discrete arrangements from one or more classes have been variously termed stone designs, ceremonial grounds, patterns, complex, elaborate or extensive stone arrangements and elaborate combinations. The problem for the classifier lies in the large number of possible combinations of the six classes or even further of the morphological types in each class. While a classification of arrangements at the scale of site should attempt to display their variety, it should also be manageable if comparisons between sites are to be made readily. Unfortunately, there are very few clues in the literature on how to go about such a classification beyond formulating dichotomies between simple and complex types, or between single class and multiple class sites.

Sixty percent of sites in the sample consisted of more than one discrete arrangement while most of the remainder consisted of one isolated arrangement such as a circle or heap [Table E.1]. These latter sites were conveniently classifiable as isolated or single site-types. In the sample there were four types of isolated sites, which could if necessary, be further divided according to morphology. They were single heap, heaped arrangement, alignment (divisible into single line and single enclosure) and cluster [Tables F.1 and G]. There were no reported single instances of upright or placed stones. Almost one third of sites in the respective classes were single types. They varied in distribution, with single heap and cluster types more concentrated in the more westerly regions, WNSW and CNSW [Table F.2]. It is interesting to note the absence of single alignments in WNSW, where sites with multiple alignments were more numerous, and which made clear their distinction from the morphologically less elaborate earth ceremonial sites on the eastern seaboard.

Single arrangements had few characteristics exclusive of sites with multiple arrangements. Locationally, there was little difference. Single heaped arrangements appeared to be located at higher elevations generally than those
contained in multiple sites, but this may due to their absence in the less mountainous areas of CNSW and WNSW. Single heaps followed the pattern of all sites with heaps, in being situated in the higher places. Similarly with regard to dimensions, there were few differences between the single and other types. Heaps were generally larger in WNSW and CNSW and this was reflected in the single type also. However, it was noteworthy that the two largest circles in the sample were also single sites [10 and 34] in NE which may signify a conceptual link with single earth rings in the same region and which are believed to have had range of functions besides initiation grounds [Sullivan 1964:135-6].

Sites with more than one discrete arrangement, may be conveniently classified into those consisting of one class only such as heap sites or alignment sites [Table H], and composite sites, where more than one class was combined [Table I]. While in some cases, the arrangement of the various components formed a readily discernable pattern, many did not [Plate 13] or were unpublished thereby making site description difficult. It was therefore considered that it was easier to refer to one class sites in terms of their respective class, such as heap sites. However, the composite sites are not categorised further although their components are listed [Table I].

Heap sites consisted of pairs, one or more lines (defined here as three or more heaps in a row), a semi-circle and most often groups of heaps (which were not arranged in a discernable pattern) [Plate 13]. At a few sites (for example 63), there were combinations of such arrangements, none of which were identical. The distribution of this site-type varied with heap pairs absent from NE and SNSW, and groups predominant in NE, CNSW and SNSW [Table H.2]. Heaps arranged in recognizable patterns, such as in lines, were more prevalent in WNSW and CNSW. It might be supposed that 'alignments' irrespective of their mode of construction were a particular characteristic of the western plains of these regions.

The number of heaps at these sites varied greatly. Lines may consist of up
to 124 heaps [84] in CNSW, although they usually contained less than 27 heaps. Sites with the largest number of heaps in a group were located in SNSW, with 100-200 reported at one site [108], 67 [114] and 28 [107] at other sites, followed by NE sites with 41 heaps [13] and 38 heaps [11]. All the group heap sites in NE and SNSW were in elevated positions, including hillslopes, ridge crests and mountain tops, while those in WNSW and CNSW were in a variety of situations. Apart from a tendency for one of a pair of heaps to be larger, the one instance where they covered an earth mound [62], and the occurrence of the rare triangular and square heaps at some group sites, there was little to distinguish heaps at these sites on morphological and dimensional grounds from those heaps in other site-types.

Sites consisting of multiple examples of heaped arrangements, upright stones, placed stones, or clusters were restricted in their distribution and frequency [Table H] and will be discussed in the context of the other site-types in the regional studies. However, the high number of heaped arrangements at a site in SNSW [116] is unique in the sample and are suspected to be of European origin.

Although sixteen sites in the sample consisted of alignments only, it is noteworthy that only one was present in NE [Table H]. Sites with open alignments or lines only were few, all were different in plan, and unlike single alignments, they were restricted to elevated positions in NE and SNSW. Enclosure sites on the contrary, were more numerous although again, none were identical. Sites with both open alignments and enclosures usually consisted of one or more enclosures with an adjoining passageway formed by parallel lines, all of which were located in WNSW and CNSW. Two sites [75,85] with radiating lines corresponded closely in plan, location and region. The significance of these sites will be discussed in the regional analysis.

Finally, the third and least numerous group of arrangements belonged to the composite site-type [Table I]. They occurred in all regions in more or less the same number. There was a regional variation, however, in the nature of their
combinations and none were identical in plan. Although some of these sites might differ only from one class sites in the addition of a single upright stone or a single heap, it was assumed that such an addition was functionally or culturally relevant, and therefore merited a special designation. This particular category of site also served to indicate the extent of variation amongst the components of any one site in a particular region or location which could also be compared across regions. Some of the NE sites such as one at Ebor [32, Plate 11B] comprised numerous classes of arrangements whose combination was unique, must have been significant to those who erected them, and whose function presumably differed from that of sites comprised only of groups of heaps elsewhere in the region.

The location of composite sites generally reflects the regional topography, although the number of composite sites at a very high altitude in SNSW is conspicuous. As might be expected, heaps and alignments were the predominant components of these sites and were found in combination in all regions [Table 1]. In contrast, composite sites with upright stones or heaped arrangements were found primarily in NE followed by WNSW. In fact, the majority of sites with upright stones belonged to this site-type. Single upright stones appeared to have been deliberately made the focus of attention at some sites, and at three sites in NE they were of sufficient size and number to warrant designation as the main arrangement feature.

It is difficult to draw any significant correlations between one class of arrangement and another in this site-type. A correlation could be made between placed stones and upright stones, observable at the two Ebor sites, which suggests that special importance was attached to singular stones. Furthermore, heaps found within or at the end of alignments may be stone dumps or may have had some symbolic purpose analogous to that of the two clusters reported to have once existed within an earth bora ring [2]. A negative correlation was noted between alignments and lines of heaps, the significance of which will be discussed in a later chapter.
Summary

Six classes of stone arrangement have been distinguished in this classification according to mode of construction. Apart from those of upright stone and placed stone, the classes were found to be readily divisible into morphological types. Thus, it is possible to discuss discrete arrangements in terms of their construction and morphology. Due to the paucity of dimensional information for many sites, further categorisation based on size has not been undertaken. However, a standard terminology to refer to the size of heaps has been proposed.

All classes except placed stone were present in varying frequency in each of the four regions. Heaps were found to be the most frequently occurring class, followed by alignments. Sites with upright stones were most numerous in NE and so may be considered to be a characteristic of that region. As noted earlier, the distribution of clusters in the sample is not likely to be representative. However, their presence alongside heaps was also a characteristic of certain NE sites. Heaped arrangements and placed stones were usually found in the eastern regions. As far as the variety of classes within each region is concerned, it appears that NE and SNSW on the one hand, and WNSW and CNSW on the other, share common characteristics [Figure 3].

The location of many arrangements appears to reflect the character of the regional topography. The extent to which this may be accurate with respect to the different classes and site-types will be discussed in detail in the following chapter.

Arrangement sites have been classified according to the number of components, or discrete arrangements, and classes represented. Each of the three site-types was present in all four regions, the greatest variation in frequency occurring amongst the composite site-types [Table E.1]. The three site-types were found in a variety of locations and no correlation could be made between one site-type and any specific location, although some general
observations could be made. A higher proportion of composite site-types was found at a very high elevation such as mountain summits than the other site-types [Table E.2].

Not all arrangement classes were represented in all site-types, which would seem to reflect the comparative rarity of some classes such as upright stones and placed stones. Similarly, certain morphological types were rare, which consequently restricted the number of site-types and regions they featured in. They included triangular, square, and elongated oval heaps, joined ovals and circles, long radiating line alignments, spiral alignments, square enclosures, and Y- and cross-shaped alignments. The combination of open and closed alignments at one site was also rare in NE, although relatively common in WNSW.

The most common morphology of heaps, clusters and closed alignments was the circular shape. Alternative shapes, particularly amongst heaps and clusters, may be due to subsidence or disturbance, although there may be grounds for suggesting that oblong heaps reflected a functional requirement in the context of burials. This issue will be discussed in the next chapter. In the case of enclosures, morphological variations may have been culturally determined, or if occurring in the same region, functionally determined or even due to temporal differences.

The infrequent use of classes other than alignments to construct recognizable enclosures and line arrangements was a notable characteristic in all four regions. Although two circles of heaps and an oval of upright stones were reported, only one of the circles enclosed an empty space and could therefore be considered comparable to a closed alignment.

Given the variety of arrangements noted in NE in class, morphology and location, the proportionately smaller number of stone enclosures there is marked. It might be hypothesized that this apparent imbalance is due to the co-occurrence of enclosures constructed by non-stone materials in that region, although the possibility that some stone sites have been destroyed since
European contact cannot be dismissed. The task of considering matters of a more regional nature will be addressed in the next chapter and in so doing, the usefulness of the proposed classification will be tested.
The following examination of stone arrangements in their regional context is not intended to be a culture-history or a prehistory. Such a detailed study of the archaeology and ethnohistory of the four sample regions, although highly relevant, is beyond the scope of this dissertation. Rather, some idea of the physical landscape in which the arrangements are situated and of their archaeological context is given. Associations between stone arrangements and other kinds of archaeological sites are investigated, with the aim of discovering any correlations which might shed light on the origin and purpose of the arrangements. In conjunction with this, pertinent ethnohistorical information will be referred to.

In order to come to some understanding of the relationship between the stone arrangement site-types and their physical and archaeological context, their proximity to a range of other sites and to water was measured. Distance to water was considered a relevant indicator of the proximity of arrangements to food and water resources in the absence of any other environmental description, which in turn might be an important factor in determining the purpose of a site. In order to do this, NPWS 1:250,000 maps containing all recorded sites were used in addition to the site records of the arrangements. Not surprisingly, the degree of proximity was not always easy to determine. In the site records 'near' might mean a distance of 1-2km or a few metres only, and in either case the exact nature of the relationship between the sites still remains a matter for speculation. Given this problem of proving associations, a distance range of 0-5km was arbitrarily chosen for discussing possible site relationships in a general way. This choice was based upon the premise that an association might be more easily identifiable within a smaller area than in a larger one which may have a higher site density. It was recognised, however, that the identification of other sites within 5km of an arrangement did not
necessarily signify that they were related in time or in function. Nevertheless, it may be possible to hypothesize, on the basis of proximity, the likelihood of such relationships.

**Western New South Wales (WNSW)**

This arid region is marked by low-lying ranges in the west and is predominantly flat in the east featuring stony plains, sand dunes and claypans [Map 1]. Water availability varies according to season the principal source being the Darling River which flows through the south-eastern portion of the region, and is joined by the Paroo River Channel at Wilcannia.

Certain aspects of the Aboriginal culture of the Darling River region and further west distinguish it from that to the east of the river. These include differing religious beliefs, ceremonies, certain motifs in the rock engravings, the presence of cyclons and the absence of carved trees [Allen 1980:34-5; Black 1944:12]. Most of the area in WNSW corresponds to the territory of the Bagundgi linguistic group which, as will be discussed in the next chapter, might suggest some degree of cultural unity in the area. Communication in the past was apparently with the north and west via the river systems. As Mulvaney [1976:88] has observed, the Darling River system is one of a few areas which possibly combined the maximum population mobility with the greatest opportunity for meeting people or receiving goods from distant regions. This is evidenced by such imports as fine quality pituri from the Mulligan River in Queensland, greenstone axes from the Leichardt Ranges also in the north, red ochre from the Flinders Ranges, as well as the export of stone implements from the Barrier Range [Hardy 1969:14]. There is also evidence of indirect links with Torres Strait in the form of a pearl shell found at Cobham Lake [Hardy 1969:14]. It might be expected that stone arrangements, being another element in the material culture, would also reflect this intercourse.

Aboriginal occupation in western New South Wales dates to the Pleistocene when it was centred on the inland lakes system, which included the Willandra,
Victoria and Tandou lakes [Mulvaney 1975:147-152]. The proximity of the stone arrangements to the Darling and Paroo rivers in WNSW suggests that they are related to the later shift of occupation to the river districts, about 15,000 BP, when the lakes began to dry up [Allen 1980:41]. This is supported by the evidence of stone artefacts from the Small Tool Tradition dated to the Holocene period found at campsites near some stone arrangements and at stone-working sites [Buchan 1975].

The abundance and wide distribution of Aboriginal sites recorded in the region testifies to the general, if not always continuous, availability of essential resources, as well as of rock shelters and surfaces suitable for art. In August 1986, there were 636 sites registered at the NPWS. They are mostly open campsites, art shelters and rock engravings. The number of arrangements is comparatively small (46), comprising only 7.2% of sites in the region. Quarries, sites of mythological significance, mia mias, burials and scarred trees are also scarce. Given the aridity of the plains, it is to be expected that Aboriginal occupation would be circumscribed. Site-distribution maps indicate that most sites are located near water. The distribution is not uniform, yet this may be as much a reflection of the intensity of archaeological field survey as of Aboriginal occupation. The greatest density of sites occurs in the Mootwingee district, where there are at least 80 recorded sites, many of which comprise rock art.

The 36 stone arrangement sites chosen as a sample for this study sampled are located in or near the western ranges [Map 1], and are at least 1km from, and usually within 250m of, water. Such locations are in keeping with the regional pattern of site-location. In addition, there is a series of arrangements not included in the sample, close to the western edge of the Paroo River channel. The sampled stone arrangements are rarely found within 5 km of (and in some cases 50 km from) a quarry, natural mythological site, grinding grooves, scarred tree or a burial. However, as they invariably lie in the same locality as an occupation site which may comprise artefact scatters, as well
as hearths and other debris, art-sites and another stone arrangement, the
discussion about cultural associations will be concerned with such sites.
Nevertheless, the absence of any locational association with the other
site-types may also be culturally significant.

The three stone arrangement site-types are found in a similar range of
locations [Table J, Figure 8], although there appears to be a case for
differentiating between single arrangement types, predominantly heaps, and
one-class and composite site-types in which heaps are not a principal element.
Sites consisting of one or more heaps tend to be elevated above the level of the
plains and creek flats, while on the other hand, those comprised mainly of
alignments are invariably set on creek flats or on low, wide and flat ridges. It
may be hypothesized that such a dichotomy in site-location reflects different
activities, and different people or numbers of people involved in them.

Few of the single sites (heaps) are reported to be near campsites, despite
the fact that they are invariably situated near a creek or waterhole. In only two
instances [25,50] is there any mention of campsites either adjacent or in a
contiguous gully. These heaps are not dimensionally or morphologically
dissimilar from other heaps and are of average height - approximately 1m.
Various functions of such heaps may be proposed including marking a route or
water source. Dow [1938b:35] doubted that such heaps served as boundary
markers because:

In the localities where these cairns occur there are very
definite physical features in the way of watercourses and
prominent hills, and the erection of such a cairn as a landmark
would be superfluous.

As indicated on Map 1, it is difficult to discern a correspondence between the
location of single heaps and proposed boundaries, although it is not
inconceivable that the large heap near Mt Gipps [45] functioned as a territorial
marker. Other heaps are inconspicuous by comparison and may have subsided
[26,55,59].
There is no suggestion in the records that the single heaps marked graves or had been used as fireplaces, and with two exceptions, there is little evidence to counter an Aboriginal origin for them. Dow [1938b:32], for instance, remarked on a heap known to early pastoralists which was reported to have had a definite native pad running from it. Knowledge of its purpose has not survived however. Two heaps, 500m from one another [27-8], are exceptional in being located on creek flats and in each covering an earth mound. It has been suggested that they belonged to early European dams. They are paralleled by a pair of heaps [62] on the same Tarella Station, which was similarly unique amongst the one-class heap sites.

Only one heap [58] has been found near a rock art site although five other heaps at Mootwingee are reported at the same grid reference as art sites. More detailed study is required to determine their proximity and likely connections.

Single arrangements tend to be clustered in rugged locations such as Mootwingee. Some heaps are reported to lie at the same grid reference as, or within 1km of, another arrangement, most of which are heaps. The Mt.Gipps heap [45] is completely isolated and is the only one with dimensions similar to those reported in north-eastern South Australia to have been built up by native passers-by.

In contrast to single arrangement sites, there is supporting evidence for a correlation between large arrangement sites and extensive campsites. Six of the 14 one-class sites and seven of the eight composite sites are reported in association with campsites. In the former group are two alignment sites with enclosures [16 and 61], in the immediate vicinity of which are numerous fireplaces and artefact scatters near a watercourse. Neither of the arrangements are reported to have contained artefacts suggesting that the activities there were segregated from those in the camps, and that they are likely to be ceremonial sites. There is also a line of six heaps [17, Plate 9A], alongside which lay abundant stone flakes. Dow [1939:215] proposed that the latter signified a knife factory connected with initiation ceremonies. It is
interesting to note the connection between quarrying for axes near Mt. Foster in CNSW (see below) and ceremonial activities, which may lend support to Dow's interpretation. The combination of art, heaps and stone blades at this site also suggest a ceremonial context.

The large cluster site [53] is unique in the sample and has been interpreted as an Aboriginal camping ground, although a ceremonial function was not dismissed. Given its proximity to Broken Hill, some clarification is necessary on whether it postdates European settlement, when Aborigines were known to have congregated near townships [Keams 1982:15]. The site is not located near any art sites or other arrangements.

All but one [44] of the composite sites near or just over 1km from large campsites, contained passageway and enclosure alignments [19,20,43,47]. It may conjectured that the intensity of visitation, attested to by the plentiful artefacts and other remains, together with the elaborate plans of the arrangements, is the result of their use by large gatherings and possibly over successive periods.

Only two one-class sites, both heaps [17,51] are directly associated with art. A further two pairs [48,49] lie no more than 500m from an art site. The only composite site connected with art consisted mainly of a pair of upright slabs [44]. The manner of supporting these slabs is reminiscent of arrangements reported further west near Woomera [Butement and Pither1956:116], and is unparalleled in the present sample. There are also a number of composite sites in the same locality as art sites near Mootwingee [43,60], and in the Coturaundee Range to the north-east [24]. The alignment component of these sites is comparatively small, thus lending credence to the separation of extensive alignment sites and art. Site 43 is an exception amongst these sites and will be discussed in due course.

Some one-class and composite sites have no obvious connections with any other sites including arrangements. They comprise sites with enclosures large enough to accommodate numerous people [21-2,46], at least one of which may
have been an initiation ground [22]; a line pattern of heaps [63], a series of
heaps considered to be graves [52], and a pair of heaps covering earth mounds
[62] whose Aboriginal origin is doubtful. It could be argued that some of these
sites may have had a sacred function in view of their relative seclusion.
However, these sites share more morphological and constructional traits with
sites with archaeological associations than with each other. On the basis of the
Poolamacca heaps [52, Plate 4], a correlation may be proposed between their
oblong shape and their function as graves. McBryde [1974:36] has noted a
similar correlation at a former heap site in NE.

One-class sites and composite sites are rarely located at the same grid
reference as another arrangement. It is therefore unlikely that single heaps
mark the close proximity of sites with alignments unless distances of over
5km are accepted as near. Ten sites are located within a 1-5km radius of
another arrangement, three of which are at Mootwingee [42-3, 48]. Site 43 is
unique there in being the only site with alignments - a set of parallel lines. Its
correspondence with an extensive campsite is also unique in that part of the
range. Possibly, it served as a focal point for domestic and ceremonial
activities at Mootwingee, assuming that the alignments were ceremonial and
were connected with Aboriginal visitation to the engraving sites. This site is
the only one in WNSW with such marked cultural associations between
ceremonial gatherings and art.

In summary, sites consisting principally of heaps in WNSW are usually
located in the ranges, the most common site-type being single heap. While
campsites and art-sites do not necessarily lie in their immediate vicinity,
there does seem to be a contextual link between heaps and art, especially in the
Mootwingee district and at Koonawarra. The exceptions are heaps covering
earth mounds of dubious origin, those designated as graves and a line pattern of
heaps. Practical reasons for the preference for heaps in the ranges may be a
lack of flat spaces compared with the plains and a ready availability of stone.
Nearly all the heaps are jumbled masses of many-sized local stones, although
early publications indicate that some were built up neatly and had a prismatic or triangular cross-section [17]. Their antiquity is incalculable despite the fact that vegetation growth was observed in some.

While lines of heaps occur at a few sites, and standing stones are used in one case to form an oval, one-course alignments are the usual means of making lines, passageways and enclosures, as attested at nearly one third of the sites sampled in the region. Their plan and possible link with large campsites beside creeks suggests that they were focal points for Aboriginal gatherings and associated ceremonies. Indeed, sites with alignments are more likely to lie within 5km of a similar site than any other arrangements. Their distribution in the region reflects this. They form a cluster in a wide valley on the western edge of the Bunker Hills [22-3], near Mulga Springs [46-7, 61], and at Purnanga [19 and 20]. Exceptions to this pattern are the enclosures near Mt. Arrowsmith [16] in the far north-western portion of the region and a site on the eastern edge of the Nunthorungee Range [18]. Despite the similarity in morphological components, each site with alignments differs in plan, even from those in the same cluster of sites. The closest similarities lie between the Purnanga sites, each of which has three circular enclosures joined by lines, and sites 46 and 61 which feature long passageways running into a large central enclosure.

There is no ethnographic evidence for Aboriginal use of any of these sites, but the preponderance of passageways and enclosures suggests similarities with ceremonial sites attested in other regions.

Lack of detailed information about many of the one-class and composite sites has made it difficult to discuss variations in the plan of the stone arrangements which might reflect cultural preference rather than environmental factors. The latter would probably explain the dichotomy in associations and locations between heap sites in the ranges and alignment sites on the flats. The apparent clustering of some alignment sites may be due to water availability which would have been important for large gatherings of people, although stone availability may also have been a prerequisite. However
such factors do not explain the variations in the plan of these sites remarked upon earlier.

It may not be coincidental that the most distant site from the Darling River, at Mt. Arrowsmith, presents the greatest variation in plan, perhaps indicating that it belonged to another cultural sphere of influence. It is interesting to note that its location places it within the Malyangaba linguistic group [Map 1]. On present evidence, the main body of elaborate sites with alignments seems to be restricted to west of the Bynguano Range; 'elaborate' referring here to sites containing numerous and more various morphological types, as illustrated by sites 18-20. In contrast, sites with alignments at Mootwingee and further west are simpler in design [43,47]. Similarly, the greatest number of heap sites, especially single heaps, are located in the western portion of the region. It is noteworthy that the two sites with a standing stone component [44,60] belong to that district, one of which [44] shows affinities with sites in Central Australia. In other words, the distribution of stone arrangements in WNSW indicates that those further east, towards the Paroo River Channel, display the greatest variety and number of discrete arrangements. While the topographically less rugged nature of this area may have encouraged the more extensive character of the arrangements, cultural reasons may also be proposed. These sites are closer to the Darling and Paroo river corridors which facilitated inter-tribal meetings and trade-links as well as the introduction of different cultural traits and innovations to the region.

On the evidence of the stone arrangements alone, it is provisionally proposed that there are two cultural provinces or activity zones in WNSW. The western zone is characterized geographically by more rugged terrain than in the east and the lack of immediate access to the major river-systems. Nevertheless it undoubtedly provided a focus for Aboriginal artists in the Mootwingee district. In the east, the flat landscape and water sources provided greater opportunities for communication, ceremonial activities and trade, as have been attested at Laidley's Ponds near the Darling River, south-east of
Broken Hill [Hardy 1969:16]. Furthermore, the elaborate alignments may indirectly testify to the more intensive usage of the riverine plains in the spring-summer periods, at which time the native millet was harvested in great quantity thereby enabling larger and less nomadic groups of people to be supported than at other times [Allen 1980:33-6].

Central New South Wales (CNSW)

This region forms a transitional zone between the central uplands and western slopes of the Great Dividing Range on the east and the riverine plains to the west [Map 2]. The climate is similarly diverse, ranging from extreme cold and wet conditions in the high eastern parts to warmer temperatures and unreliable rainfall on the western plains [Learmouth 1971:86ff, 125ff]. The distribution of recorded Aboriginal sites reflects the environmental diversity, being greater in density in the eastern portion (Gilgandra, Dubbo and Bathurst maps) where 638 sites representing 74% of all sites in the region, are reported. While this distribution is explainable in part by the concentration of archaeological field survey in the Dubbo-Bathurst areas [Pearson 1981], the eastern areas also contain the most desirable locations for human settlement [Pearson 1981:20].

There is a wider variety of Aboriginal sites in CNSW than in WNSW. They include carved and scarred trees, especially in the western parts, burials, quarries, rock art shelters and shelter deposits, bora or ceremonial grounds, as well as open campsites in great number. Rock engravings, however, are rare which possibly reflects a lack of suitable surfaces. Earth monuments also feature in the form of sculptures at Triamble and Oberon and at the Wellington bora grounds, reported in 1830, and as mounds over burials [Pearson 1981:103-4, 558].

Although there is evidence for Pleistocene human occupation in the Blue Mountains [summary in Pearson 1981:56-8], that in CNSW proper is
principally Holocene in date.

Stone arrangements comprise only 5% of the total sites (860 sites) in CNSW, slightly less proportionately than in WNSW [Table K, Map2]. Their distribution largely reflects the general pattern of Aboriginal sites in being more concentrated in the east, although the arrangement classes are dispersed throughout the region on a variety of landforms. While 70% of the arrangements, representing most classes, are in elevated positions, it does not necessarily follow that all such sites are to be found on the extensive slopes of the Great Dividing Range. Indeed, there is evidence to suggest that arrangements were often located on hills and slopes irrespective of surrounding topography and of access to water and food resources, which has implications for determining their purpose in their environmental and cultural context.

The distribution of arrangement site-types indicates an east-west dichotomy, especially in relation to sites with more than one alignment. This dichotomy may be environmentally based, due to the availability of space, stone and sustenance for large gatherings. It may also reflect different systems of beliefs across the region, or the performance of different activities. Most of the single sites (77%) are situated in the east, on or at the edge of plains or plateaux, as at Bathurst and Oberon. Elsewhere, they are more widely dispersed at sites in the plains to the west near Mount Foster [66-7,76] and to the east in the Talbragar river valley [83]. Single clusters are all located on a river bank or terrace, while heaps are invariably in focal positions above the plains [67,107] or near the upper reaches of a creek [93-4,96,102]. The existence of single alignments is in direct contrast to their absence in WNSW. However, they are concentrated at Oberon in the east [86,91] with only one located on the western plains [66], which suggests that single alignments are a rare feature in the western parts of CNSW.

One-class sites comprising heaps follow a similar pattern in location to single heaps, and are prominent on hill summits in the eastern districts of
CNSW. In contrast, alignment sites are invariably located in the west. They are widely dispersed and apart from site 79 at Wellington, are elevated on flat-topped ridges and hills. The two radiating lines sites [75, 85] occur in this area. It may be no coincidence that the radiating lines of heaps at Condobolin [84] are also located on the western plains. The pattern of these alignments would appear to have been a characteristic of the plains and, as will be discussed in due course, may be ceremonial sites.

Composite sites, which consist principally of groups of heaps together with alignments, are found on the plains west and north of the ranges, except for one site at Coonabarabran, and are thus to be distinguished from sites consisting of groups of heaps found only around Bathurst. It may be significant that the only arrangement [74] containing an upright stone lies on a hill summit in the north-eastern part of CNSW and is consequently closer to the New England tablelands where upright stones feature at a number of sites. A further connection with the latter region is suggested by the incorporation of trees in the arrangements at Heyfield [68], a custom noted by McBryde [1974:40–2] at Black Mountain [30]. It is noteworthy in this context that in CNSW there are few extensive arrangements of alignments of the kind reported in WNSW. At only one site [82] near Dubbo, are there enclosures and passageways marked out by stone.

A survey of the locations of the arrangements in CNSW in relation to water suggests that for only a few sites was close proximity to water important. Only a small number are situated within 100m of water. They are invariably single clusters some of which, on the basis of signs of use as hearths, have been interpreted as campsites, and all but one are in the well-watered Bathurst region. Most of the other sites are over 500m and some more than 1km from water in the eastern as well as in the drier western parts. While European agricultural practices must have altered the water regimes in some areas, elevated sites are nevertheless unlikely to have ever been close to water. There appears to be a correspondence between degree of elevation and distance.
from water. Apart from the single clusters noted above and a small number of other sites possibly associated with large gatherings of people, it seems that the location of those arrangements on hills was not determined by accessibility to water.

Almost one third of the arrangements in CNSW lie over 5km from a campsite, suggesting that the activities at the two kinds of site were kept separate. This statement agrees with Pearson's [1981:106] observation that stone arrangements in his survey region (Bathurst and Dubbo 1:250,000 maps) appeared to be deliberately located away from likely campsite locations. However, his study also noted that even campsites were not always close to water (within 100m) and that other factors must have influenced their location [Pearson 1981:107]. Indeed, of the 12 arrangements reported to lie at the same grid reference as a campsite, some are up to 1km from water [65-6].

In contrast to WNSW, few alignments are located near a campsite (two out of 16 sites with alignments) which may be significant. Alignments of heaps, although infrequent, also follow this pattern (two out of three sites). It may be conjectured that such sites were ceremonial and consequently that seclusion from domestic sites was important.

Paradoxically, certain arrangements with alignments are located within 250m of water but still do not lie near a campsite [76,79,88,94]. It is significant that one such site [83] belongs within a ceremonial precinct at Wellington. It may be hypothesized that the activities at these sites required water either in the ritual or to sustain a large number of participants. Alternatively, the availability of level open space incidentally adjacent to water may have been a deciding factor in site location.

No positive correlations can be made between a particular site-type or class of arrangement and any other Aboriginal site, be it domestic, industrial, ceremonial or art. This may in fact signify the multi-purpose nature of some arrangements such as heaps, the possibility of various local cultural traditions having existed concurrently in CNSW, which determined the functional
relationships between arrangements and other kinds of sites, or of changes in
the conventions in constructing arrangements which resulted in new classes or
combinations. Some sites apparently functioned in an
industrial-cum-ceremonial context. The Mt.Foster group of sites in the
north-western plains belong with a series of axe quarries. Indeed, Towle
[1939a:202] considered the arrangements to have functioned in the context of
ceremonies and trading in an otherwise desolate region [cf. Oxley's comment in
1818, in Towle 1939a:202]. Ironically, none of the sites are the same, although
the hill-top arrangements are predominantly heaps [64,67] fitting the pattern
of heap sites elsewhere in CNSW. Mt.Harris, adjacent to Mt.Foster, is both a
quarry and mythological place and belongs to the complex although no
arrangements have been found there. Other arrangements associated with
quarries are all multiple heap sites [80,81,95]. In at least one case [80], there
is some doubt as to whether the heaps represent byproducts of quarrying.

An association between arrangements and carved trees at some sites
[78,81,102] suggests that they both belonged in a ceremonial context. All of
these are heap sites, single and multiple examples, at least one of which marks
a burial site according to a local tradition. Although one scarred tree and some
arrangements enclosing trees are reported at Heyfield [68], none apparently had
been carved. Marked trees are said to have once existed beside an elaborate
series of alignments [82] lending support to their having had a ceremonial
function.

A small number of heap and cluster sites have been interpreted as burials
without any corroborating evidence [71-2,89]. It would appear from the
ethnohistory, however, that burial mounds in the Bathurst-Dubbo region were
constructed of earth [Pearson 1981:103]. As the first two sites lie outside this
region and contain oval or oblong heaps of about the same large size, it is not
inconceivable that they attest to a regional burial practice akin to that
remarked upon in WNSW, and was probably determined by a lack of easily
worked soil.
No arrangements in CNSW are recorded within 5km of an art site which contrasts with that association between some sites in WNSW. Apart from the Mt. Foster sites there is little evidence for connections between arrangements and the few mythological sites on the NPWS register of sites.

A small number of arrangements are reported to be bora or ceremonial grounds, although ethnohistorical validation is not forthcoming in many cases. They indicate considerable variety in construction and design with only two of them similar in plan. Although the latter consist of radiating lines, they differ in mode of construction [84-5]. Significantly, the only other site with that plan also lies in the western plains and is known locally as the 'old bora ground of the local tribe'. Their plan may reflect a local bora ground design which did not include the usual enclosures. The other 'bora grounds' contain a single enclosure [76, 79]. As is the case with the small single ovals at Oberon, these enclosures fall outside the known dimensional range of bora rings, although the dimensions of the rings at Wellington are unrecorded. The remaining bora sites consist of a group of heaps [95] and a composite site [88] containing one heap and possibly a large and a small circle. The latter, if confirmed, would fit the design of two-ring bora grounds. The bora sites with enclosures are all located close to water [76, 79, 88], while the heap and line sites are distant from water [84] and are invariably elevated [85, 95] on exposed flat rock surfaces.

Local tradition has rendered a few other sites ceremonial grounds, although they are not registered as such. Again, their plan does not necessarily include enclosures [66]. The location of the elaborate site near Dubbo [82] is known to have been the scene of corroborees as late as 1881. However the site's plan, with enclosures and passageways, contrasts with the single rings considered to be corroboree rings on the northern coast of New South Wales. Perhaps ceremonies of a more sacred nature were held in the arrangements, while the corroborees were conducted some little distance away. Alternatively, the corroboree reported might have postdated the use of the arrangements. Only one [66] of the reported or suspected bora sites is associated with a campsite,
supporting their separation from more profane activity areas.

Stone arrangements are rarely found within 1 km of another arrangement. Furthermore, a number of arrangements are relatively isolated from other Aboriginal sites. Some of these are suspected to be bora grounds as discussed above [69, 75, 85]. The others, however, are a morphological mixture and include oval alignments [86, 91] which might be ceremonial, and groups of heaps in elevated situations [74, 105] which might have had a religious significance.

In summary, the stone arrangements in CNSW are invariably elevated not only in the hilly districts but also in the plains, suggesting that some degree of altitude was important to their function. The surviving remnants of Aboriginal mythology in eastern Australia, highlight the religious significance of elevated sites. According to Creamer [1984: 8.8], high ground brought the initiates closer to the spirits and the sky god or supreme deity, known in this particular region as Baiame. Another source relates a myth told by local Aborigines and connected with one arrangement [78], wherein the spirits of the dead jumped from one heap to the other and finally up to the home of Baiame [Gresser 1963a: 1].

Furthermore, the siting of arrangements away from campsites and more secular activity areas, appears to have been deliberate, especially when the distance from water and their elevation are taken into account. That this building practice is definitely Aboriginal and not due to early European surveyors, is confirmed by an 1815 report by Governor Macquarie concerning the Mt. Pleasant heaps [95; Pearson 1981: 105].

The further westwards in the region, the more extensive and more numerous in their components the sites become. Moreover, few sites appear to have features reminiscent of earth bora grounds with passageways and rings or just large single rings. The evidence from local traditions indicates that stone bora grounds, if confirmed as such, might take on a variety of plans, including single or radiating lines. In addition, an account dated to about 1850 provides evidence for the ceremonial function of rings as small as 2 m in diameter in the
Warrnambool ranges [Creamer 1984:8.8]. In this context, site 69 and possibly some of the other smaller enclosures in CNSW could be interpreted as ceremonial but not necessarily as bora grounds. As Creamer [1984:2.19-20] has observed, regional differences in religious beliefs gave rise to variations in distribution and types of Aboriginal sites including initiation and burial grounds.

Finally, it seems that some of the arrangements in the western and northern peripheries of CNSW share certain affinities with sites to the west of the state, and to the New England Tablelands respectively, in the elaborate nature of some sites, and the inclusion of elements such as upright stones.

**New England (NE)**

This region is also one of geographical diversity, characterised by a narrow, fertile coastal strip and the abruptly rising and precipitous eastern border of the north-eastern tablelands [Learmouth 1971:8.80; Map 3]. The large number of registered archaeological sites on the coastal plain testifies to more favourable conditions there for human occupation, in contrast to the high, exposed upland region.

The wide range of Aboriginal sites reported in NE reflects the variety of resources in the region, especially on the coast. They include many middens and some fish traps. Earth bora or ceremonial grounds are a characteristic of the alluvial valleys. Their co-occurrence with stone arrangements in the NE region suggests they might have functioned in a similar context. Art sites, both paintings and engravings, display a variety of regional styles, as well as some affinities with art in adjoining regions, such as the Hunter River and Sydney districts to the south, and far western New South Wales [McBryde 1974:67, 84]. Quarries and stone arrangements tend to be located inland from the coast. Furthermore, unusual rock formations in the mountainous regions could be
incorporated into Aboriginal mythology, as is evidenced by Two Sister Rocks and Bald Mountain [NPWS 21-3-4 and 21-6-39] which are recorded as natural mythological sites. Sites such as carved trees, earth rings, and the rock art, together with ethnohistorical accounts, testify to a rich ceremonial life in former times, which has implications for the discussion on the purpose of the stone arrangements in NE.

Stone arrangements comprise only three per cent of registered Aboriginal sites, which totalled 891, in the region. They are absent from the coastal margins south of Byron Bay, and uncommon along the northern fringe of the region to Tweed Heads [Map 3]. However, the ethnohistory of the Tweed River valley contains accounts of stone 'boorl' rings, which appear to have been stone counterparts of earth bora rings, and they suggest that there once was a more localized tradition of constructing stone arrangements, the physical evidence for which does not survive [Sullivan 1964:137]. Such rings may never have been common however, because of the effort involved in transporting heavy stones over some considerable distance to the chosen site [Buckland quoted in Sullivan 1964:138].

The stone arrangement site-types in NE are shown in Table L and Figure 9. Sites consisting predominantly of heaps are a characteristic of the region. There are a number of relatively elaborate heaps sites, where heaps are arranged in large groups, or in a configuration such as a line or semi-circle. Alignments are less common and their arrangement is less elaborate than those remarked upon in WNSW. Furthermore, there is no close equivalent of the enclosure and passageway plans observed in WNSW. The explanation cannot rest entirely on a lack of suitable open spaces, since many such locations have been utilised in NE, especially those on top of mountains or ridges. Upright and placed stones [Plate 11] are also a feature of NE sites, and are particularly numerous at the two Ebor sites on the tablelands [32,33]. However, they are not confined to the uplands region as attested by a site near Byron Bay [5]. Stone clusters, unlike those noted in other regions, are recorded in direct
association with a ceremonial site at Ruby Creek [2]. Their position within the smaller earth ring suggests that they were stone versions of ring furnishings reported elsewhere to be upturned saplings or tree stumps, and which were of sacred significance in the initiation rites [Sullivan 1964: 32,38]. At some other sites, clusters, or low heaps [Plate 12B] reported to be only one stone high, are more numerous [11,12,13], and what they lack in conspicuous height seemingly is matched by their large number. This tendency is also apparent at Narrengullen in SNSW [114]. The possibility that some clusters and low heaps are natural stone accumulations cannot be dismissed where they are located on stony terrain.

While it is difficult to compare arrangement sites by their plans [Plate 13], circular enclosures, semi-circles and lines appear to have been popular shapes whatever the construction mode. These formations are attested at nearly half of the NE sites. Furthermore, it has been suggested that at some sites, heaps were placed some little distance from the main body of arrangements as if to act as sentry posts [11,15].

As far as location is concerned, all but three sites in the sample are elevated, and some are isolated at very high altitudes. The paucity of sites at lower elevations, on the coastal plain, probably reflects the non-survival of sites, and a preference for construction materials other than stone. The physical relationship between arrangements in NE to water sources and suitable campsite locations follows a similar pattern to that observed in WNSW and CNSW. There is a correspondence between site elevation and distance from water and campsites. Indeed, most sites are elevated and therefore distant from water, and many (21 in number) are over 5 km from an occupation site. The few sites in lower terrain include the Ruby Creek bora ground [2], a line of upright stones [1], and a site known to have been significant to Aborigines in initiation ceremonies [39]. None of them lies near a campsite, indicating that their situation may have involved the choice of a well-watered but secluded location. There is ethnohistorical evidence
attached to the Petroi site [39] in support of this, whereby the major camp is reported to have lain some 16km to the south on the Macleay River. Only the initiates and elders traversed the rugged route to hold ceremonies near the arrangement, which they did for the last time in 1924 [McBryde 1974: 45].

Only three sites are recorded as bora or ceremonial sites. Two of these comprise arranged stones in conjunction with earth enclosures, Ruby Creek [2] and Black Mountain [30]. Carved trees were originally also present at the latter [McBryde 1974:40-1; Plate 12A]. The co-association of earth and stone structures has parallels in the Tweed valley 'boori' rings [Sullivan 1964: 137] and to the south in the Hunter River district, where stone heaps were set about the perimeters of two earth rings [Needham 1981: 35ff.]. The third bora ground lies at Petroi [39]. An additional three sites are traditionally regarded to be initiation grounds, either by European settlers or by the local Aboriginal community. Bull Paddock [11] consisting of heaps set along a ridge, is remembered as the scene of closing ceremonies held in the early 1900's. Although there is no ethnohistorical record of the use of the two complex sites at Ebor on the Serpentine River [32,33], the late Victor Shepherd, who was initiated at Bellbrook in the 1920's, confirmed their sacred significance to Aborigines. Their open and elevated position was considered important for communication with the supreme being. The stones were instrumental to the instruction of the initiate in his spiritual and cultural responsibilities, which were ultimately derived from the sky. Shepherd estimated that the last ceremony held there was in the 1860's [NPWS file]. Neither of these sites are reminiscent of other bora grounds in their plan, and their copious use of standing stones and placed stones is unique in the sample. As might be expected, none of these ceremonial sites is located within 5 km of a campsite and are at varying distances from water. At least three of them [31-33] are located with extensive views of the surrounding tablelands.

It is evident then, that not only seclusion was important to the carrying out of sacred rites, but that open spaces and aspect were also meaningful to the
course of ceremonies concerned with the transmission of knowledge which was seen to have originated in the sky. It is also clear that more than one site might have been involved in the process of the initiation, each with its own physical characteristics and environmental setting, and all isolated from the more public areas of daily activity. Not all such sites had to be man-made. Creamer [n.d: 8] has reported that in the last documented Keparra (or bora) ceremonies in the Macleay Valley, the initiation route encompassed two bora grounds, a natural mythological site and an ochre quarry, all within an area of about 25 sq. km. It is relevant to note that the Ebor sites lie within 5km of an earth bora ground, at Yooroonah on nearby Bullock Creek, that the Bull Paddock site is similarly situated, while the Petroi site [39] is 800m from an earth ring. Furthermore, a single stone circle [34] lies within 5 km of the Black Mountain arrangements [30]. Its dimensions place it within the range of small bora rings, as defined by Steele [1983: 28], which suggests that the two sites functioned in the same or similar ceremonies, and that the neighbourhood has traditionally been a focus for sacred activities and gatherings. By contrast, the other single stone circle in NE [10] at Coaldale, is not within a 20 km radius of any recorded archaeological site.

A number of other arrangements are located within 5 km of an earth bora ground, suggesting that they might have been ceremonially linked at some stage even if not built contemporaneously. The notion that the semi-circular row of heaps at Ward's Mistake are the remains of a ceremonial ground is supported by their proximity (about 800m) to two earth rings [McBryde 1974: 43]. A single heap [31] on a slope below the summit of Mount Anderson may have been connected with the mythological significance of the mountain. This mountain marked one of the stages on the initiation route followed by the Macleay River valley Aborigines, noted previously. However, there is some doubt over the origin of the heap. One further arrangement may have had a mythological significance unconnected with bora ceremonies. Site 40 is said to lie near a clay mound within an area restricted to Aborigines, referred to as the Clever
Man mythological site.

As is the case in CNSW, the presence of carved trees in the neighbourhood of an arrangement may indicate that the latter functioned in a ceremonial context. However, Black Mountain [30] is the only recorded site to have been directly associated with carved trees. In a few other instances, carved trees are over 1 km away, rendering it difficult to prove a meaningful relationship. McBryde [1974:127] has remarked upon the relative infrequency of carved trees in New England, which may indicate, survival problems notwithstanding, that this type of art or monument was not an important aspect of the regional culture. In any case, their rarity at stone arrangement sites, may be evidence that the practice of carving nearby trees either was not associated with the latter, or that the often high locations of many arrangements meant that suitable trees were unavailable. It is interesting to note that none of the arrangements have been designated burials, despite illicit probes at some sites and reports from the Copmanhurst district about oblong heaps, referred to locally as Aboriginal graves [McBryde 1974:36]. The shape of the latter distinguishes them from the Copmanhurst 1 and 2 arrangements (which incidentally belong in the same context as rock art). McBryde suggests that the morphological distinction may have been functionally based.

The relationship between ceremonial sites and rock art in New England has been a matter of some discussion. As McBryde [1974:55] has observed, the strength of an association between earth bora grounds and nearby art sites has relied upon the accuracy of information W.J.Enright gained about sites near Moore Creek on the tablelands, from an Aborigine of another area. Few stone arrangements in NE are found in the vicinity of rock art. Such sites are clustered around Copmanhurst [12,13], Blaxland's Flat [14] and Bull Paddock [11], all near Grafton, and are predominantly heap sites. This is also the area in which, McBryde [1974:69] noted, the two types of rock art in the region, paintings and engravings, overlap. With regard to the cluster of art sites at Blaxland's Flat, a corresponding dearth of occupation sites, raises the
possibility that the area was traditionally sacred and ritually significant [McBryde 1974:32]. The extensive heap site [14] on a ridge crest may therefore be considered to belong in this sacred context, even though it may not be contemporaneous with the surrounding sites.

Physical proximity to a natural mythological site may not have been as important as being within sight of one, especially when it was a prominent geological or topographical feature. Consequently, it is difficult to confirm an association with stone arrangements. Five diverse arrangements are recorded as being located at a mythological site, which could also have had totemic significance. They are a line of upright stones [3] on Mount Lindesay in the Richmond River Valley, which are held to represent mythological beings such as balugan (hero) [Steele 1983:39]. The location of another site [9] on Mt. Pleasant is also associated with a myth about balugan. The other sites are an undescribed heap [8] on the summit of Mount Sugarloaf, the heap on Mount Anderson and the Clever Man site, both previously remarked upon. There is too little evidence to suggest a correlation between single heaps on mountain summits and a mythological function, particularly as Europeans are known to have built summit cairns. Nevertheless, in the absence of any ethnohistorical information, it could be hypothesized that two further arrangements [29 and 38] laid out at a very high altitude and surrounded by rugged country, had mythological significance, perhaps in conjunction with bora instruction rituals. The incorporation of unusual natural rock features at one of them [38] may be parallel to the use of curiously shaped rocks or rock depressions at some increase sites, similar to that attested at the paddymelon site at Nymboida in the Clarence Valley [Sabine 1978].

As already noted, quarries may be incorporated in the initiation route, and hence proximity of an arrangement to one might be culturally significant. However, only three sites [11-13] on the Orara and Clarence rivers, lie within 5 km of an ochre or stone quarry, the rest being at some distance from one.

An examination of the distances between stone arrangements reveals a
clustering of sites at Copmanhurst, Black Mountain and Coombadja Creek. McBryde (1974: 36) has suggested that the two Copmanhurst sites probably formed one complex. The possibility of a ceremonial relationship between the two sites at the second location, discussed earlier, suggest that they too belonged together. At the third location, the two single heaps may have functioned in a mythological context associated with high places, and may also have been related in some way to the alignment [9] on Mt. Pleasant some 16 km south-west as the crow flies. Otherwise, the arrangements in NE are over 5 km from another arrangement and some are very isolated. Not unexpectedly, the latter include known or probable, bora or ritual grounds [2,3,10,39] and sites on mountain tops, which may have had mythological significance [9,38]. The other sites are either located in rugged terrain [1,36], on the coastal plain where fewer Aboriginal sites are likely to have survived [4,5], or are of uncertain origin [37].

It is difficult to draw a distinction between stone arrangements within the respective provinces of the upland and river valley-coastal tribes. Too little evidence survives from the coastal margin and plains to make comparisons on technological or morphological grounds. The preference in site-location for secluded open-spaces is not exclusive to the upland sites, the main difference being in altitude and a correspondingly increased isolation. Apart from the placed stones and clusters, which occur in small numbers anyway, the arrangement classes are attested in both geographical zones. The use of upright stones, for instance, has been attested on the coast at Terragon [5] in the Tweed River valley [Rankin 1901; Plate 10] and on the tablelands [32,33]. The stone arrangements of the tablelands in the Clarence River district, at Blaxland’s Flat [14], Copmanhurst [12,13] and Bull Paddock [11,15] are distinctive in being comprised principally of heaps and in belonging to the same context as numerous art sites. However, heaps are also plentiful at tableland sites such as Black Mountain [30] and Ward’s Mistake [35]. Certainly, the copious use of upright stones and placed stones, together with alignments not
commonly found in NE, at Ebor [32,33] are a characteristic of the tablelands. Parallels for the various component classes have been sought for in far western New South Wales, north-western Australia and Cape York [McBryde 1974:50-1]. It is relevant to note that aspects of the rock art on the tablelands, such as red ochre paintings and certain engraving motifs have parallels further west [McBryde 1974:29; Sullivan 1980:47].

Alternatively, counterparts for stone rings and earth bora rings on the tablelands are to be found in the east, suggesting that the eastern escarpment was not an impenetrable barrier to communication and, on evidence for ceremonial movements between the Macleay River and the tableland site of Petroi, that the river valleys were utilised for that purpose. The variety of stone arrangements on the tablelands and in the eastern river valleys may therefore indicate a confluence of traditions over many generations which were partly influenced by the environmental diversity of the region and partly by cultural influences from the west and east.

South-Eastern New South Wales (SNSW)

The topography of this region is similar to that of NE and has had similar implications for human occupation [Map 4]. Some 1680 or 70% of all Aboriginal sites registered in SNSW have been reported from the coastal strip and immediate hinterland. They are evidence for a wide variety of activities, reflecting an abundance of food resources and raw materials. They range from middens, grinding grooves and quarries to rock art, shelters deposits, and open campsites. Burials, a few carved trees, bora grounds and mythological sites are testimonies to the ceremonial life of the coastal Aborigines.

A surprisingly high number (20%) of sites are reported from around Canberra, which reflects in part the intensity of archaeological field survey there in the last two decades. In contrast, few sites are reported on the treeless plains to the north and west of the capital. Sites in the alpine
districts have been found principally along the narrow river valleys, especially the Lower Snowy River valley, suggesting they must have been favoured places for occupation. It has been observed, however, that no systematic survey has yet been undertaken of the surrounding hills [Geering 1981:28]. The range of Aboriginal sites in these areas is more restricted than on the coast. Rock art and quarries are reported only from the Canberra district, while little besides campsites and the occasional carved tree or burial is recorded in the Goulburn and Cootamundra areas.

The extent of Aboriginal land-use on the tablelands and uplands has been a matter of some debate, with some scholars preferring the notion of a sparse but all-year round occupation [summarised in Winston-Gregson 1978:19-30] and others maintaining that seasonal visitation was the norm, principally to exploit the spring-summer migration of the bogong moth (Agrotis infusa) to the alpine peaks [Flood 1983:202-6].

There are also conflicting views as to whether the upland Aboriginal tribes had cultural links to the east or west. Their language was evidently akin to that of the coastal tribes [Sullivan 1980:45], although the art suggests communication with the west. On the other hand, according to Flood [1980:117], the burial customs show eastern affinities. In any case, there is at least some ethnohistorical evidence of meetings in the northern part of SNSW between tribes from the tablelands and the coast, connected with the exploitation of the abundant resources at Lake Illawarra [Sefton 1981:13], and in reverse, for visits of south coast tribes to the Tumut locality in the Bogong Mountains [Winston-Gregson 1978:22].

Aboriginal occupation on the south coast dates to the Pleistocene (at Burrill Lake) and similar dates are beginning to emerge for the uplands, at Birrigai near Canberra [Flood 1986: public lecture]. However, the majority of archaeological sites in SNSW would appear to date to the Holocene period.

Stone arrangements comprise only 1.5% of sites recorded in SNSW,
representing the smallest proportion of arrangements to all archaeological sites in any of the four regions examined here. While, their distribution and density follow the general pattern of sites in SNSW [Map 4] they are totally absent from the tablelands and plains around Cootamundra and Goulburn. Extensive land clearance for pasturage may be partly responsible for this, although arrangements may never have occurred there in great number, if the small number of other sites is any guide to the intensity of Aboriginal occupation there. Most of the arrangements are recorded from the Canberra and Bega districts which encompass coastal and most of the upland areas. Consequently, it is not surprising that most arrangements are in elevated situations with only a minority (8 out of 36) at creek flat or riverside locations. In some cases, they occur above the snow line, suggesting that they were either visited on a seasonal basis or were constructed at a time of warmer climatic conditions. This choice of location fits the site-location pattern previously observed in CNSW and NE, and may reflect similar religious beliefs connected with the sky.

The range of site-types in SNSW is shown in Table M and Fig 9. They exhibit a number of characteristics not found in NE, despite the topographical similarities. The morphological variety shown by the alignments provides one contrast. Although none is attested in the WNSW sample, joined ovals and circles are known to be a characteristic of sites in the far west of the state [McCarthy 1970:19] and are paralleled at sites in the Budawang ranges inland from Ulladulla [124,125; Plate 14]. It is relevant to note that the Namadgi alignments [120; Plates 16,17] have been compared with those at Pindera Downs in western New South Wales [Flood 1980:152]. Alternatively, sites featuring groups and lines of heaps show greater similarity with arrangements in the hilly districts of CNSW, especially around Bathurst, and in the upper Clarence River Valley in NE.

Similarly, upright and placed stones are rare although the Mumbulla Mt. arrangement [138] is known to be of sacred significance to Aborigines. It is
possible that such arrangements were originally more abundant or remain unidentified. Thus, the SNSW arrangements in their morphological diversity and location share some affinities with sites to the north and west of the state, but their combination is regionally based and has no exact parallels. This is undoubtedly due to the topography of the region which features flat mountain summits suitable for laying out stones. However, the choice of alignments over heaps to form patterns at a high altitude, would seem to be culturally determined.

It is difficult to assess the location of arrangements in terms of their proximity to potential campsite locations, given the incompleteness of many site records and the ruggedness of the terrain. Level ground beside rivers not always being available, it is not surprising that arrangements were often constructed on sloping ground and on ridges above watercourses. Sites perched on summits may not have been readily accessible from the valleys below, although the distance involved may not have exceeded 1km. Hence, distance from water as the crow flies may not indicate how secluded or inaccessible some of the sites were. Namadgi [120] provides one example of a remote site on account of its altitude, while the Narrengullen heaps [114] are out of sight of, but only about 250m from, plentiful water. Of the few sites recorded relatively close to water (up to 250m distant) some are associated with artefacts or are less than 100m from an open campsite. They include heaped arrangements and a cluster. The presence of the former sites raises the possibility that they performed an economic or domestic role as hides or shelters.

Arrangements situated at a low altitude near water and with no apparent connection with a campsite, are rare and significantly, consist of single enclosures [110,111]. Little can be deduced from the record of the latter site. However, the former site, at Mundamia Creek, is found in the same context as two art sites and is considered to be a bora ground despite the absence of ethnohistorical data. Towle [1942b:174] considered it be analogous to
enclosures used in initiation ceremonies in south-east Australia. Its distance from a campsite (over 1km) in a fertile river delta links it with those sites noted in the other regions, which suggests a preference both for seclusion and for abundant food resources. At Narrengullen [114], artefacts such as backed blades have been reported near and beside the heaps and water lay closeby down the slope. It might be conjectured that the artefacts were associated with a ceremonial use of the site. Artefacts have also been collected from near circles at Avonlea [129], although their exact relationship to the latter is unclear. Overall, the majority of arrangements are not located within approximately 500m of water or a campsite, and given the elevation of some, the distance is likely to be greater.

No direct associations can be proved between stone arrangements and industrial sites such as grinding grooves or quarries. There is no suggestion that any of them is the result of quarrying, although the exceptionally large heap site [108] may be the result of land clearance. Apart from a scarred tree in the vicinity of the Mundamia Creek site [110], which might have been made during ceremonies [Towle 1942b: 173 drawing on A.W. Howitts’ observations] there are no obvious connections with marked trees, nor are any trees incorporated in arrangements as observed in CNSW and NE.

Few arrangements in SNSW are located near an art site. The Mundamia Creek site is unique in being within 250m of a small art shelter and 500m from a larger one, named the Devil’s Hands on account of its numerous hand stencils [Bindon 1976:32-3]. It is impossible to draw conclusions about the relevance of the hands to the stone enclosure. It may be hypothesized that they served as some sort of signal, in which case the contemporaneity of the two sites would have to be assumed. However, an Aboriginal story noted by Bindon about the origin of the stencils included no reference to the stones, and local Aborigines interviewed by him in the 1970’s did not know of the small art site or the arrangement [Bindon 1976:61,66]. Of the few sites within 5km of an art site, three comprise enclosures [111,125-6], which may be significant. The others
contain heaps [108-9]. A study of the topography of an area might suggest possible art associations despite a greater intervening distance. For instance, the Namadgi arrangements [120] and the Yankee Hat painted rockshelter lie at the opposite ends of the same valley but are separated by 8-9km of increasingly rugged boulder country [Plate 18B].

None of the arrangements are reported to be located near a mythological site, although the view from some of the higher ones may have encompassed mythologically significant landforms. For instance, Pidgeon House mountain is visible from sites on Mt.Endrick [126] and Mt.Sturgiss [125], and is traditionally regarded to be important as a bora and mythological site. In this context, it is notable that the Mundamia Creek enclosure apparently points north to the highest point in the Cambewarra Range [Towle 1942b:173].

A small number of arrangements is reported to be burial sites, all of which consist of heaps or heaped arrangements. Unfortunately, incomplete records do not permit morphological comparisons with other heaps in the sample considered to have the same function.

With the exception of the sacred arrangement on Mumbulla Mountain [138], the arrangements examined in SNSW are not recorded as bora or ceremonial grounds. Morphologically, none fit the standard pattern of earth ring bora grounds, which are reported in the region, and whose use is attested ethnohistorically [Bindon 1976:65-6]. A few sites lie within 5km of a recorded bora ground, but they all differ in morphology [124,128,139]. However, the presence of large enclosures and corridors at some sites leads to speculation that they were ceremonial grounds. They include Mundamia Creek [110], and the Namadgi, Endrick and Sturgiss arrangements [120,125-6]. The divided oval on Endrick and the joined ovals on Sturgiss have been compared with earth ceremonial grounds featuring anthropomorphic figures, where the middle lines of stones are deemed to represent such figures [Flood 1980:145]. However, one of the sites is too severely disturbed and the other is so carefully curated, to be sure of such identifications. Both alignments are orientated east-west,
which may have had a religious importance. It is noteworthy that the two earth rings reported at Rings Creek, in the Bogong mountains to the west, are similarly aligned [Flood 1980: 146].

The Namadgi site contains no obviously large enclosures although the parallel line alignments which appear to have become sealed off at the ends, may have been sufficient to contain people. Their northerly orientation follows the natural slope, yet the choice of this location may reflect a preference for, rather than the dictation of, this aspect. The secluded location of these mountain sites supports a ceremonial function. The origin and function of alignments reported on other peaks near the Namadgi site are less certain due to European visitation, and merit detailed recording. One of them [142] once coincided with the state border. Neither this site nor that on Coronet Peak [115] contain enclosures, although one has parallel lines similar to those at the Namadgi site.

In NE, it has been observed that earth bora grounds and stone arrangements had a similar distribution, especially in the river valleys and on the tablelands [McBryde 1974: Fig.2]. Judging from a number of unconfirmed reports [Flood 1980: 146], it is likely that the distribution of the two kinds of sites in SNSW follow a similar pattern. For the uplands region, there is some suggestion that earth bora sites are located at lower elevations on valley floors or flats such as Rings Creek, while stone arrangements with alignments, groups of heaps or placed stones are elevated. While the availability of stone in the higher, more rocky locations may have been a determining factor in the construction of the latter sites, their plan and the orientation of some, suggests more than mere opportunism. Rather, it would seem that there was a well established tradition of constructing sites in stone different in design to earth sites. Furthermore, there is some evidence that ceremonial grounds at high elevations did not necessarily even have to be constructed of stone. According to a local tradition, there was an initiation ground on the peak of Tidbinbilla near Canberra [Flood 1980: 146] for which there was no physical evidence. Similarly, there are a
number of unmarked sites sacred to initiations recorded on Mumbulla Mountain [Egloff 1979].

As is the case in the other regions, very few arrangements in SNSW lie within 5km of another. The proximity of the Endrick and Sturgiss sites on the one hand, and the two arrangements on Mumbulla Mountain on the other, are the most notable combinations. The latter sites are related in their significance to the Yuin Aboriginal community on the south coast, while the former pair share sufficient locational and morphological characteristics to suggest that they belong to the same ceremonial context.

In this chapter, the classification earlier outlined has been applied as a means of analysing and interpreting a diverse body of data. Comparisons could thus be made between sites in specific locations or terrain within the same region and across regions. Rare and common forms could be identified and their significance investigated. Arrangements typical of certain locations and regions could be distinguished. However, the arrangements in those locations are not necessarily the same in each region, indicating that determinants of stone arrangement construction and morphology should not only be sought in the topography and physical environment. Thus in SNSW, comparatively elaborate sites with alignments are often located at high altitudes, as on Mts. Namadgi, Endrick and Sturgiss, while in CNSW and WNSW elevated sites typically included heaps. Similarly, variations were noted in the morphology, construction and location of sites considered to be ceremonial grounds, suggesting that there may have been a range of traditions governing them, either concurrently or progressively by the same or new groups of people.

The analyses also imply that generalised statements about the distribution of 'simple' and 'complex' types in New South Wales are likely to obscure such contrasts within each region. For instance, one third of sites in WNSW are single arrangements, predominantly heaps, which are characteristic of the low ranges in the western parts of the region. They contrast with the
morphologically and numerically more elaborate sites containing alignments on the flat claypans near the Darling River. Similarly, in the more eastern regions, NE and SNSW, there are sites comprising large numbers of heaps or combinations or arrangements whose configuration is not as clear as those formed by alignments, but which nevertheless are more complex in plan than the single types located there.

The analyses also indicate how observations about stone arrangements in relation to their physical environment and to other archaeological sites might form the basis of hypotheses about their origin and function.

Finally, the previous discussion shows how a detailed and methodical approach to stone arrangements might contribute information about past Aboriginal activities and culture, particularly those in environments less conducive to human occupation. The number and variety of arrangements in the uplands and tablelands of SNSW and NE, for instance, testify to the existence of well-established traditions surrounding their construction and use. The implications of this statement for the continuing discussions about Holocene developments in Aboriginal society will be addressed in the next and concluding chapter.
CHAPTER 6: CONCLUDING DISCUSSION

Various issues arise from any classification of artefacts. These include its usefulness for solving problems of origin, function and chronology, and the nature of its contribution to our knowledge of past societies. Thus, a classification of Australian stone arrangements has relevance not only to discussions about Aboriginal society before the arrival of the Europeans, but also to those concerned with the phenomenon of monument-building amongst pre-literate societies in general.

The present classification of arrangements into techno-morphological categories and into three site-types was undertaken irrespective of the problems outlined in Chapter One. The question thus arises as to how the classification might provide information leading to their solution. As far as the authentication of sites is concerned, the present classification alone cannot prove or disprove the Aboriginal origin of the stone arrangements studied. However, the presentation of the range of variation in their construction and form within a classificatory framework, permits the identification of rare and common characteristics. The latter, in turn, may, in conjunction with other evidence from other sources such as artefacts, location and ethnohistory, suggest a particular origin.

In the sample, there were a number of sites with unusual or less commonly found physical features, which corroborated an Aboriginal or European origin. For instance, sites containing upright and placed stones, such as those at Ebor in NE [32,33], have been assigned an Aboriginal origin, and there are ethnohistorical and ethnographic examples in the region and in northern Australia respectively, to support this interpretation [McBryde 1974:51]. On the other hand, there are some sites which researchers suspect are European made. Some of these sites contain European artefacts [31,70]. Others consist of comparatively high numbers of a common class, such as heaps [108] or of a rarer class, such as heaped arrangements [116]. In the case of the latter site,
the number and compact wall-like character of the heaped arrangements were unique in the sample, and they suggested an European origin. The heap site, however, is not as straightforward, as there are similar multiple heap sites in the sample which the ethnohistory suggests are Aboriginal. Nevertheless, none match this particular site in number and area, and the reservations of the recorder can therefore not be discounted. In the present classification, it was considered impracticable to differentiate between carefully constructed and jumbled heaps because of the problems of inadequate site records and the poor state of preservation of many sites, making it impossible to confirm their initial form. Obviously, the problem of authenticating sites remains a complex one, and a methodological framework within which to draw comparisons between arrangement sites is one useful avenue of investigation.

The ethnohistory of the four regions is relevant for a few sites only and this should be taken into account when drawing analogies about origin and function from them. The designation of some sites as burial or ceremonial grounds depends largely upon the accuracy of information collected from local residents, and only rarely from Aborigines. A tendency for some sites, especially burial sites, to be interpreted according to Euro-centric ideas about shape and function should not be overlooked. As noted elsewhere, human remains were not reported in conjunction with any of the so-called graves, whilst a correspondence between heaps and carved trees in a funereal context was demonstrable in only one case [102].

However sites with alignments, particularly those forming patterns or enclosures and pathways, are generally regarded to be Aboriginal ceremonial grounds. Analogies have been drawn, for instance, with boorl rings once extant in the Tweed River district [Sullivan 1964:137ff.], with large ceremonial rings constructed by the Ucumble tribe in the western parts of the New England tablelands [Wyndam 1889-90:37-8], as well as with earth bora grounds. Some exceptions are the Nandi Creek site [70], showing European interference, and some alignments on mountain peaks conspicuously close to the ACT-NSW border
[115,142]. No sites with alignments were reminiscent of European house or garden plans.

Further studies are required to determine if certain classes or combinations of them have chronological significance. The Bay of Fires' excavation suggests that single alignments, at least, have some antiquity [Cane 1980:16]. However, it is impossible to conclude from the evidence of only one site that single lines or even single arrangements might precede combinations of the same in a chronological sequence. As will be discussed below, further research on the variations between sites in the same district may identify sequences of arrangements which could have chronological significance.

In Chapter Two, the issue of principles governing the construction, morphology, location and archaeological associations of stone arrangements was raised. The classification and regional surveys provide some relevant information in this respect, although further study is required to confirm the nature of some associations. Taking the four regions together, it is clear that the most popular method of constructing arrangements was by heaping or by aligning single stones. Such arrangements were common, irrespective of the topography. Indeed, it is likely that a major criterion for the location of alignments, for instance, was cleared open spaces which might be available at any elevation.

Furthermore, the principal method of forming stone lines and enclosures was by alignments. Similar formations made by heaps and upright stones were rare and were never found at the same site as an alignment, although they might co-occur in the same region. The significance of this distribution warrants further investigation. An explanation may lie in temporal, functional, and geological differences. For instance, the two modes of construction may testify to a sequence of practices and beliefs which may have chronological implications for the study of similar arrangements in other regions, such as in NE where upright stones are characteristic. Alternatively, the two types of site may reflect contemporaneous practices relating to varying functions within
one region, or to different groups of people with their own cultural traditions. It may also be possible to trace the introduction of new ideas or ritual practices into a region which became manifest in new forms of arrangements.

Greater effort was undoubtedly involved in the construction of lines of heaps (which is well illustrated by the Condobolin complex [84]), than by aligning single unsupported stones. A preference for low energy modes of construction may also explain the rarity of heaped arrangements or wall-like structures. However, alternative raw materials may have been used in preference to stone for the more substantial constructions, such as hunting hides. This is not to say that there was no systematic planning and investment of labour in the layout of many sites, particularly those with elaborate patterns or with composite arrangements.

The most common shape of discrete arrangements was circular followed by oval. The occurrence of angular-shaped heaps might be explained in terms of subsidence or disturbance, but the instances of square and oblong enclosures in CNSW and WNSW can only be described as local variants of the more usual circular types. Differences in the dimensions of enclosures may reflect the number of participants, which might be expected to vary from one event, or from one clan or tribe, to another. Earth bora rings in the Moreton Bay region, for example, exhibited a greater similarity in size and plan, compared to stone enclosures, which may indicate a higher degree of cultural homogeneity. It might be conjectured that such comparative uniformity reflects increased opportunities for social interaction on the east coast, afforded by a higher population in a more confined geographical area, than is the case in some of the regions sampled. Alternatively, the more standardized morphology and size of earth rings may indicate that they were constructed within a shorter time span than stone arrangements. The variations amongst stone arrangements may in part represent the ideas and practices of numerous generations.

Most arrangements were elevated, which invariably meant that they were somewhat removed from water and potential campsite locations. Close
proximity (less than 100m) to water does not appear to have been a determinant of arrangement location in many cases. This was particularly so in regions containing mountainous terrain. In the more arid WNSW, human activities were more circumscribed, and both heap sites in the ranges and large sites with alignments on the plains, were found near water. Except for certain large sites in WNSW, a few clusters and some miscellaneous sites elsewhere, arrangements were not located near campsites. This separation of activity zones is emphasized by the fact that a small number of sites lay in well resourced but otherwise uninhabited areas. Consequently, such sites may have had a ceremonial function with restricted access and may have been associated with a seasonal exploitation of the area. Many of these sites contained enclosures although not to the exclusion of other sites. Rather, there is sufficient evidence to suggest that many arrangements with or without enclosures were deliberately located in relatively remote locations. Although a similar phenomenon observed for stone circles in Great Britain [Burl 1976:10], is suspected to be a function of differential survival on account of their situation outside the most favoured population areas, the Australian ethnohistorical evidence supports the notion that the seclusion or remoteness of certain sites was important for certain ceremonies such as initiations.

The associations identified between stone arrangements and other sites were not consistent within one region or across regions. Stone arrangements closely overlapped with rock art in a few instances only, indicating that there were no universal associations between the two site types. The exceptions were in the Budawang Range and on the Shoalhaven River in SNSW, in the ranges of WNSW, and in the Clarence valley in NE. Although most of these arrangements were heaps, there were many more heap sites without any association with art, suggesting that they carried an independent function or had multiple uses. Similarly, the few occurrences of arrangements near quarries, carved trees and burials, suggests that any associations were probably only relevant at a regional level rather than having had universal applicability. It is relevant to
note here that the general lack of associations between stone arrangements and other Aboriginal sites in the sample is not unusual:

Attempts to correlate various cultural features, such as languages, art styles, artefact forms, legends, or social and ritual practices have not led to any coherent, recognizable clusters. This situation is true in other parts of the world [White and O'Connell 1982:100].

Environmental reasons for the lack of some associations cannot be discounted. For instance, trees suitable for carving may not have grown at some of the elevations chosen for arrangements. Moreover, in many regions few carved trees appear to have survived the two hundred years of European expansion.

Stone arrangements were rarely found within 5km of one another. It is conjectured that those clustered about Mootwingee, Black Mountain, the Serpentine River and Copmanhurst, and in the Budawang Range and on Mumbulla Mountain, belonged in the same cultural context, either connected with art or ceremony. It seems unlikely that 'simple' types such as single heaps signalled the proximity of a more 'complex' site unless associations can be proved for distances greater than 5km. The only exception might be the heap on the slopes of Mumbulla Mountain, although its exact significance to contemporary Aborigines is unclear.

With reference to Radcliffe-Brown's [1926:205] comment about principles governing ceremonial grounds, it is apparent that the sampled sites display considerable variety in their construction, morphology of components and overall site-plan. While the existence of shapes or designs reminiscent of enclosures and pathways at earth bora grounds supports a ceremonial function, it should be stated that there was apparently no standard design within the same locality or from one region to another. Similarly, there are many so-called ceremonial grounds containing no enclosures or pathways, but featuring groups of heaps, and radiating lines formed by heaps or aligned
stones. The diversity of ceremonial sites suggests that some were specifically designed to accommodate people, while the design of others may have had a symbolic purpose or have been the focus of special rites.

The tendency for enclosures to be constructed of stone west of the Great Dividing Range has a geological basis, which may also explain the higher percentage of stone arrangements in the west, relative to other sites, than on the eastern seaboard (7.2% of total sites in WNSW as against 1.5% and 3% of sites in SNSW and NE respectively). This is paralleled by a similar dichotomy between stone and earth monuments in Great Britain [Burl 1976:26-8], although a case for the relative antiquity of one over the other has not been demonstrated in Australia. Both earth and stone ceremonial sites are known to have been used in the recent past [McBryde 1974:33,54-5]. However, a geological explanation does not hold in those areas of overlap noted in NE and SNSW. Their co-occurrence lends support to the idea that stones may have had a special relevance beside being ready construction material. Stones belonging to some circles in northern NSW were said to represent each tribe at the gathering [Sullivan 1964:137-8] or each newborn child [Gresty 1946-7:67]. In this context, prominent stones and heaps set at the ends of some enclosures in CNSW and SNSW may have had special importance.

In short, there is evidence for some general principles governing the sampled arrangements, in their construction, morphology, location and proximity to other sites. However, the number of variations amongst the intrinsic and extrinsic attributes of the arrangements suggests that there were also principles operating at a local level which might signify different religious beliefs and customs and possibly periods of time. A localisation of arrangement traditions was also noted amongst British stone circles [Burl 1976:38]. In that case, architectural variations were considered to be evidence for the local development of rings and attempts to draw taxonomic relationships were therefore thought to be misleading.

In Chapter 3 the rationale for classifying artefacts was discussed. In
particular, the conflict between formal and functional classifications in
Australian prehistoric research was noted. The present classification does not
conform with either approach. In response to McCarthy's [1940:188] dismissal
of a descriptive typology, the underlying premise of this classification is that
the mode of construction and the morphology of discrete arrangements and of
sites as a whole are tangible evidence of past human choices, which were
influenced by environmental and geological conditions on the one hand, and
functional and traditional requirements on the other. While it may not always
be easy to discern the shape intended by the builder, the choice of construction
mode alone is potentially informative. Consequently, hypotheses might be
proposed concerning the relative frequencies of certain constructions or
shapes, which may throw light on traditional Aboriginal practices in a
particular region, and on the problems of their origin and function.

By comparison with classifications of stone tools and rock art, involving
detailed trait-analyses, the present scheme is generalized. Indeed, the poor
standard of recording stone arrangements (with some exceptions) makes it
difficult to be sure of the exact nature and number of their components.
Inevitably, this state of affairs, together with this writer's lack of access to
certain more complete site descriptions, has limited the scope of the
classification. Many sites, particularly composite sites, were not categorised
in detail. Consequently, the writer deemed it premature to label or number
classes or site types precisely, as is common practice with portable artefacts.
Nevertheless, the classification's hierarchical structure satisfies Maynard's
[1974:389-90] condition that existing categories should be able to incorporate
any new discoveries according to a stated set of principles. Indeed, the number
of possible construction modes is unlikely to exceed eight, while morphologies
are easily divided into two principal categories of open and closed shapes. The
three site types are further divisible, although more survey work is required in
the case of one-class and composite class sites. A distinction between sites
with and without enclosures, for instance, is likely to be functionally relevant.
Looking beyond classification, there are at least two discussions in Australian prehistoric studies, to which an examination of stone arrangements might contribute. They are the definition of culture areas, and the increasing complexity of Aboriginal hunter-gatherer society in the late Holocene. With regard to the first subject, there is a basic problem to be addressed in that scholars have found it difficult to identify cultural boundaries or clusters based upon variations in the material remains. As White and O'Connell (1982:100) have observed:

One of the more notable features of Australian life, even in the areas of semi-sedentism, was the lack of material things and the enormous elaboration of social and spiritual life. We suggest that among Aboriginal groups these intellectual structures, along with language variations ... replaced the stylistic variability in material goods which was developed in other contexts such as the European Upper Paleolithic or the North American Archaic ...

Nevertheless, there is a possibility that some elements in the archaeological record might be identifiable as cultural traits of particular tribes or language groups. For instance, carved trees are considered to be characteristic of the Kamilaroi and Wiradjuri peoples, whose respective territories covered the region east of the Darling River to the Great Dividing Range (Morwood and Fillery 1976: 97). The likelihood of there being stone arrangement traits characteristic of particular Aboriginal groups is therefore also worthy of investigation. Two examples will suffice.

Pearson (1981:81) has proposed three clan areas, centred on Bathurst, Wellington and Mudgee in the upper Macquarie River district, on the basis of ethnohistorical sources. He believed that this tripartite division would explain many of the unanswered questions regarding ethnographic observations of differing customs. However, his study did not seek any correlations between elements in the archaeological record and these clan areas. The present study shows that certain variations in the density and types of arrangements in the district would not contradict such a division, although as will be shown, a
number of reasons could be proposed besides that of different customs. Topographical considerations aside, the present survey indicates that by far the greatest use of arrangements was made in the Bathurst area, which contained 22 sites. Over half of these were single sites, the rest being groups or lines of heaps, and clusters. A notable characteristic was the dearth of large enclosures (over 3m in diameter) and of sites comprising a pattern of alignments and other arrangements. By contrast, the sites in the Wellington district, though less frequent, included a number with more elaborate plans. Indeed, only one single site was reported. Furthermore, the only angular-shaped enclosures in CNSW were located there. The Mudgee area, on the other hand, contained only two arrangements of heaps. Possible explanations for these local differences include varying population density, the availability of alternative construction material, or localised cultural traditions which did not require stone construction to the same extent as in other localities. The distinctive character of the Wellington district arrangements supports ethnohistorical accounts of ceremonies there. It might be conjectured that the absence of similar sites in the Bathurst and Mudgee districts was due to the fact that the clans congregated at Wellington for ceremonial and other purposes. There, the greater availability of resources meant that large groups could be supported. Although, it is difficult to identify the participants in the ceremonies from Pearson's [1981:65-86] examination of the ethnohistory, it is worth noting that the Wellington and Mudgee clans are reported to have been allies and so probably congregated for ceremonial events. There is nothing distinctive in the construction, location or morphology of the arrangements in the Upper Macquarie to suggest that any marked clan boundaries. As suggested by Pearson [1981:82], such boundaries may have been delineated by drainage catchments. Since the three clans belonged within the same large linguistic grouping, the Wiradjuri, the use of stone to define clan territories may not have been relevant.

The second example is concerned with arrangements in WNSW, which, it was
tentatively proposed in Chapter Five, show an east-west dichotomy in site-type and class. The tribal distribution map of the same region shows no such division [Allen 1980:34; Map 1]. The Bandjigali territory extended from the plains west of the Bynguano Range (and including Mootwingee) as far east as the Paroo River, and thus encompassed most of the sites sampled which display the east-west variation. Sites with heaps, it was noted, were characteristic of the ranges, especially in the context of rock art, while sites with extensive alignments were more likely to be found on the plains near the main water sources. In contrast, the territories further west, including that of the Danggali, contained relatively few arrangements, and apart from those clustered near Broken Hill, were widely distributed. Certain characteristics in this region betrayed more western cultural influences, such as supported standing stones.

The incomplete nature of many site records renders it impossible to distinguish any traits specific to one tribe. On the other hand, it may be no coincidence that most of the sites with alignments in WNSW were located where the territories of a number of tribes converge on the Paroo River. Hence, the possibility that ceremonial gatherings were located close to band or tribal boundaries [Williams 1985:13] cannot be discounted.

The above two examples illustrate how difficult it is to correlate any variations in the stone arrangements with tribal or clan divisions in order to establish the latter as distinct cultural entities. This is not to say that it may not be possible to identify stone arrangement traits particular to larger linguistic groupings. These groupings are to be distinguished from the smaller and more local groupings often referred to as tribes in the ethnohistory, after Pearson [1981:77].

On the supposition that there may be a link between the transmission of ideas and practices, or 'culture', by means of related languages, and their manifestation into, say, stone ceremonial sites, it might be more useful to investigate the degree of variation in arrangements belonging to adjoining
linguistic groupings. As shown, for instance, in Chapter Five, arrangements in CNSW and WNSW exhibit some contrasting features which may be related to their location within the areas of the Wiradjuri and Bagundgi, respectively. Further research is required to identify which traits exclusively found in either area are culturally determined or are due to other factors, such as the local topography or the availability of stone. Needless to say, the practice of constructing stone arrangements for ceremonial purposes is one trait common to both areas.

The second issue is concerned with complex Aboriginal hunter-gatherers. Although the antiquity of stone arrangements cannot be fixed, the investment of time and energy, not only in the construction of the large sites, but also in the situation of many in remote or inaccessible places, or in so-called marginal resource zones, suggests that they might be associated with certain developments identified in the archaeological record dated to the last five thousand years [White and O'Connell 1982: Chapter 5]. These include mound-building in western Victoria, which suggests a shift to semi-sedentism, harnessing of resources by the use of fish-traps, the introduction of the Small Tool Tradition and the implementation of more elaborate extractive techniques such as cycad processing. Some of these developments have been connected with the requirements of large social or ceremonial gatherings, although scholars disagree as to whether the latter were the consequence of or the catalyst for such developments.

The location of many stone arrangements both in the highland and more arid areas of New South Wales suggests that these sites may be linked with a spread of occupation in the Late Holocene, into what have been referred to as harsh environments [Bowdler 1981:109] or marginal resource zones [Lourandos 1983:91]. Both Bowdler [1981:109] and Lourandos [1983:89] have discussed the evidence for a link between harsh environments and important ritual
gatherings, at which items were traded, information exchanged, marriages arranged and alliances forged. Consequently, the stone arrangements are likely to have belonged to the same cultural context. Hence, stone arrangements can be considered, on the one hand, as evidence for human adaptation to hitherto unfavourable occupation areas, following Bowdler [1981:105-7]. Alternatively, stone arrangements may testify to increased demands on social relations which resulted in a) more intensive ceremonial activities and b) increased usage of marginal environments [Lourandos 1983:82].

There are a number of problems with the above two interpretations. In the first place, they are based on the assumption that Aboriginal occupation in the environments described was lacking or minimal prior to the mid-Holocene. The archaeological evidence from western New South Wales and highland areas shows the contrary to have been the case. Allen [1980:42] describes occupation in the Darling River region as continuous over the last 15,000 years marked by little economic change. Hence, it is difficult to interpret the stone arrangements there in terms of a late adaptation to new environmental conditions or an expansion into a new ecological niche. Bowdler [1981:105-7] has specifically discussed stone arrangements on the New England tablelands in the context of human adaptation. However, there is accumulating evidence from excavations in highland areas, such as in Tasmania [Flood 1983: Chapter 9] and the ACT [Flood 1986: public lecture] for occupation of these areas dating to the Pleistocene. Thus, the presence of stone arrangements in the highlands and more arid regions per se does not mean that they date to the latter half of the Holocene period.

The question arises as to whether stone arrangements might provide evidence for increased usage of a particular environment in the Holocene period which was not economically based. Bowdler [1981:107] suggests that the principal motive for Aboriginal use of the higher parts of the New England tablelands may have been ceremonial. Her evidence includes the comparatively high number of bora grounds and stone arrangements there, the art sites and the
dearth of occupation sites. This picture is confirmed by the general lack of association observed in the present study between stone arrangements and other sites, especially campsites. The co-occurrence of stone arrangements and a few art sites in the southern uplands further supports the notion that the high altitudes held special religious significance to Aborigines and that visitation was primarily for ceremonial purposes, incorporating the exploitation of the bogong moth and the opportunity for social intercourse. In WNSW, most arrangements would appear to lie firmly within the contexts of art with its attendant rituals and symbolism, and of social interaction and ceremonies effected by the proximity of the river communication networks.

Two further traits of intensification, as identified by Lourandos [1983:82], may also be relevant to stone arrangements. They are more intensive usage of individual sites and increased establishment of new sites. Unfortunately, the nature of the stone arrangement evidence renders it difficult to distinguish construction phases at one site or amongst sites. One could, for instance, speculate that the more elaborate sites, being those with numerous, or large and various components, are the result of additions. The latter might in turn, signify increased usage of the sites than previously. However, such 'elaboration' cannot be demonstrated for many sites, and other reasons for the variations can be sought, such as differing function.

However, the investment of time and energy in the construction and location of an artefact not immediately necessary for survival, suggests that many stone arrangements belong to a later and more developed stage in Aboriginal hunter-gathering. This contention is supported by evidence from outside Australia which also allows the present examination of Aboriginal stone arrangements to be placed in a wider context.

The suggestion that monument-building is related to a more complex stage in the evolution of hunter-gatherers has been raised in a number of overseas studies. Although certain emphasis in the overseas studies has been placed upon the considerably greater investment of labour required to build megalithic
structures, there are other aspects of this building phenomenon which have parallels in Australia. The earliest British monuments, for instance, are considered to belong to a period of significant changes, in the second millennium BC, from which emerged a more sedentary way of life [Bradley 1984:76]. In Australia, it is noteworthy that in the Darling River region, which contained both numerous and elaborate arrangements, there were, at European contact at least, larger and less nomadic groups of people than in the more eastern regions [Allen 1980:33]. The Australian and British monuments also share a predominantly non-economic function. This fact serves to heighten the contrast between elaborate, durable monuments and transient occupation, and suggests that ritual and funereal activities were all important. According to one scholar [Cherry 1978 in Bradley 1984:73]:

Monument building is both a celebration of existing complexity and a way of uniting the different forces in one society by providing a common focus for their activities and aspirations.

However, as shown by the Australian evidence, monuments did not necessarily have to be of megalithic proportions for social interaction and cohesion to take place, although compared with other Aboriginal artefacts, many would have appeared impressive in their number, size and area. Furthermore, the construction of massive structures overseas has been considered to have political significance in terms of justifying and displaying the role of a powerful minority [Cherry 1978 in Bradley 1984:74]. In Britain, and possibly elsewhere therefore, the construction of large monuments may be associated with the rise of elites, which are thereby identifiable in the archaeological record [Bradley 1984:74]. Even if Lourandos' [1983:90] hypothesis is accepted, that in the Late Holocene the equalitarian life-style of Aborigines gave way to an increasingly powerful gerontocracy, the evidence of the stone arrangements is ambivalent about the rise of such elite groups.

By this discussion of Aboriginal stone arrangements in the context of
complex hunter-gatherer societies in Australia and overseas, it is hoped that
the paradoxical scholarly neglect of this class of artefact will be redressed. A
classification of arrangements as a means of organizing the numerous and
various sites, is seen as fundamental to the inclusion of this evidence in
scholarly discussion. Further investigations at the most basic level of site
recording, remain to be undertaken. Their results promise to add significantly
to our understanding of developments in Aboriginal society before European
contact.
APPENDIX A: GAZETTEER OF SITES

The following abbreviations refer to the relevant 1:250,000 maps mentioned in the gazetteer:

B  Bathurst
Bg  Bega
BH  Broken Hill
C  Canberra
CL  Cobham Lake
D  Dorrigo
Du  Dubbo
F  Forbes
G  Gilgandra
Gr  Grafton
M  Mallacoota
N  Nyngan
Nr  Narromine
T  Tallangatta
TH  Tweed Heads
U  Ulladulla
W  Wilcannia
Wa  Wagga Wagga
WC  White Cliffs
Wg  Wollongong
Wk  Warwick
APPENDIX A

1. Bookookoorara Creek  3-5-10  Wk 4095 8137  [NPWS]
   Location: 50m from creek
   Description: A line of irregular-shaped stones placed upright. Slides show about six stones, some of which appear slender in profile, and which may be no more than 30cms high. The line points to a saddle to the west and the cross-axis directly to the summit of Bald Rock.
   Associated finds: nil
   Archaeological context: no details
   Remarks: The recorder noted a depression ringed by stones on a nearby ridge as worthy of investigation.

2. Ruby Creek  3-5-6  Wk 4050 8325  [Towle 1942a: 80-83; Steele 1983:44-45]
   Location: On a ridge near Ruby Creek
   Description: Two small clusters of stones within the smaller of two circular mounds of earth. Each cluster consisted of about 1/2 dozen stones lying close together.
   Associated finds: nil
   Archaeological context: The two earth circles were connected by a pathway and were referred to as a bora ground. A tree with bark removed from it lay near the small circle while a similar tree lay in the vicinity. Many ground-edge axes were found in the neighbourhood.
   Remarks: According to G. Bamberry who saw the site in 1874 at the age of 14, ceremonies were held at the site in the previous year. Stones were removed during probes for skeletons (not found).

3. Mount Lindesay  3-3-13  Wk c.4730 8640  [Steele 1983:39]
   Location: Near Mt Lindesay
   Description: At the site were stones representing the balugan (hero) and the grubs in a myth, and five other stones standing upright in a row.
   Associated finds: nil
   Archaeological context: nil
   Remarks: The site has mythological significance involving sorcery.

4. Bangalow or Possum Creek  4-4-32  TH 6694 4430  [NPWS]
   Location: On a hillside sloping eastwards, in a small stand of
rainforest.
Description: A horseshoe-shaped mound of rocks, 11 m wide at the two ends. Each of the two arms was about 2 m wide with the thickest part, 5 m wide, where the arms meet. The rocks probably originally reached higher than the present 1 m. The mound was built around a tree with a girth of 3.7 m.
Associated finds: nil
Archaeological context: no details
Remarks: There were some axe marks on the tree but it is uncertain if they are related to the mound.

5. Tyagarah 4-5-32 TH 6752 4491 [NPWS; Steele 1983:48]
Location: On sandy ground in rainforest, north of Norries Head
Description: Two alignments of stones in each in a spiral formation with standing stones. They were approx 3.9 m apart and each was about 1 m across, the northern one being slightly larger. "In the middle of the spirals were placed the smallest stones, with the larger stones on the outer side on towards the end of the spiral. The flat stones were laid edgewise and the long stones standing upright— the largest stone marked the end of the spiral."
Associated finds: nil
Archaeological context: There was a midden at Norries Head.
Remarks: The stones were collected before sand-mining operations.

Location: On the steep slope of a ridge
Description: A pathway cut into the slope so that it was terraced to form a horizontal surface. A retaining wall of rhyolite boulders lined the down-hill side of the path. The path ran for approx. 50 m in an east-west direction. The highest part of the built-up area of the walkway was about 66 cm high and 1 m wide. The lowest section was about 25 cm high.
Associated finds: nil
Archaeological context: no details
Remarks: Buchan report suggests that the site is non-Aboriginal and is likely to be the remains of a road constructed in the 1870’s but not completed.

7. Coombadjha Creek 12-2-9 Gr 4420 7450 [NPWS]
Location: On a hill summit, 2.4 km n/e of Gwydir trig.station
Description: A mound of stones. No other details.
Associated finds: nil
Archaeological context: 2.4 km from site no.8
8. Gwydir 12-2-7 Gr 4397 7437 [NPWS]
Location: On the summit of a narrow ridge, nearly 1,000m high
Description: A stone mound was reported
Associated finds: nil
Archaeological context: 2.4km s/w of site no.7
Remarks: Gwydir is known as a natural mythological site. The surrounding area is rugged and drops away to the north into the gorge of Coombadjha Ck. The site commands extensive views.

Location: On granite outcrop on mountain top, 140m from trig.stat.
Description: A semi-circle of stones set around a rock depression. The depression was elongated and measured approx.1.6m wide, 2m long and 60cm deep. There were 16 pieces of rock of various sizes with dimensions in the range of 10cm-35cm. Several had fallen into the depression.
Associated finds: nil
Archaeological context: no details
Remarks: There is a myth associated with the summit, featuring the warrior hero, Balugan and his bride, Guangan.

10. Coaldale 12-3-9 Gr 4899 7484 [NPWS]
Location: On a flat sandstone rock
Description: Ring of stones, approx. 27m in diameter
Associated finds: nil
Archaeological context: No details

Location: Approx.1/4 mile(0.3km) along a sandstone ridge
Description: Two groups of low, oval-shaped cairns, and several outlying cairns below the crest, made of grey sandstone from the ridge. The 17 cairns at the north end were the best preserved and included several large heaps as well as one pointed stone standing to a height of about 1ft.6ins.(45cm) supported by other stones. 39 cairns were recorded but 10 were considered to be dubious. The cairns ranged in height from 3ins.-30ins.(7cm-76cm). 10 cairns were 9-12 ins.(23cm-30.5cm)in height, and 8 cairns were 18-30ins. (46cm - 76cm) high. Only 2 cairns were more that 6ft. (1.8m) in diameter. Refer to McBryde for measurements of each cairn. According to the 1978 report, 14 mounds formed an elongated circle of about 15m in
110

diameter, while another set appeared to be sentry posts.
Associated finds: no details
Archaeological context: There was an art site featuring charcoal
drawings within 5km on the other side of the Orara River.
Remarks: An initiation ceremony is known to have been held there in
which the stones had significance.

12. Copmanhurst 1 12-6-23 Gr 4792 7269 [McBryde 1974:36-40;
NPWS]
Location: On the slopes of Mount King William
Description: Two groups of cairns made of local sandstone. The north
group consisted of 8 low oval heaps fairly regular in size:
6-9ft.(1.8m-2.7m) long by 3-6ft.(0.9m-1.8m) wide and
9ins-2ft.(23-60cm) high. The southern group were 6 irregular and
smaller heaps: from 11ins-1ft.9ins (28-53cm) to 2-7ft.(0.6-2.1m)
wide. They were grouped in a semi-circle around a larger heap and
included several large natural sandstone blocks. Refer to McBryde for
details of measurements.
Associated finds: no details
Archaeological context: Within sight of a rock engraving site (Nobby's
Creek). Between this site and site no.13 was a large rockshelter with
charcoal drawings.
Remarks: Sites 12 and 13 probably formed one complex.

NPWS]
Location: On a rocky knoll on the slopes of Mount King William
Description: 41 cairns and an alignment of single sandstone blocks
extending for 13ft.(4m) on a n/s line. The cairns were in two groups,
one on the slopes and one centred around the knoll, and included 2
wall-like structures. Difficult to measure (refer to McBryde for
details) the cairns were elongated, circular, oval, and irregular in
shape, and some were low in height (less than 1ft. or 30.5cm high).
Associated finds: no details
Archaeological context: As for site 12
Remarks: as for site 12

14. Blaxlands Flat 12-6-72 & 12-6-78 Gr 4792 6974 & 4824
6946 [McBryde 1974:31-33; NPWS]
Location: On three knolls on a ridge running n/w-s/e
Description: 18 stone cairns in 4 groups with one outlying cairn to
the n/w. There was remarkable uniformity in the size and height of
cairns in groups A,B,C, while those in D were less regular and
consisted of only a few stones. There were 2 heaps in A, 7 in B,
arranged in an irregular circle, 5 in C and 3 in D. Refer to McBryde for measurements.

Associated finds: no details

Archaeological context: A few miles away were rockshelters with stencils and drawings.

Remarks: No ceremonial use was mentioned by an elderly member of the family who owned the nearby property, though he knew of other Aboriginal activities in the area. It was difficult to see the cairns for the thick scrub and trees, suggesting that the site might have been cleared by fire for ceremonies or that it was used at a time of less vegetation.

15. Mount Kremnos 12-6-106 Gr 4990 6920 [NPWS]

Location: On a small ridge

Description: Four groups of rocks which may have originally formed mounds. They were scattered and had no definite height. Three measured 2m x 1m and one was approx.1m in diam. 3 groups had the appearance of having been placed over a burial whilst the fourth was built-up to 0.4m high.

Associated finds: nil

Archaeological context: 4 km west near the Orara R. were a number of Aboriginal sites ranging from shelters, rock art, a mythological site and site no.11.


Location: On a creek flat

Description: Several designs were laid out with gibbers. The stones were all of a small size picked up locally, the largest being 4-5 ins (10-12cm) long. The designs covered a total area of about 25m x 10m.

Associated finds: nil

Archaeological context: On the other side of the creek were hundreds of cooking fires with artefacts, scattered over a few acres.


Location: On the crest and slopes of a low ridge

Description: A row of 6 mounds running e/w from a cave. The largest, on the crest, was prism-shaped, 22ft.x15ft.x3ft.6in. (6.7x 4.6x1.1m). The other 4 decreased in size down the slope. The first 2 had a triangular section and were oblong in plan, while the others were circular in plan. These latter two were also out of line with the rest and Dow suggested that the last and smallest one was a spoil heap. He also perceived a path or line of clearing along the line of mounds.
mounds ranged from 22ft.(6.7m) to 2ft.(61cm) long, 15ft.(4.6m) to 2ft.(61cm) wide and 42ins.(1.1m) to 6ins.(15cm) high [after Dow]. The stones were up to 15ins.(38cm) in diam.
Associated finds: There were many chippings and flakes on the supposed path from the large mound to the creek, and near the spoil heap.
Archaeological context: In the cave 300yds.(274m) from the first heap were engravings incl. cartwheel and cross-bar designs. Weathered paintings were also noted. Grinding stones were also find in the area.
Sites 16 and 17 were in the district.
Remarks: Dow wondered if the waste flakes belonged to a knife factory.

18. Nuntherungie Stn. 14-6-13 CL 556 183 [NPWS]
Location: In the lee of a sand dune on an ironstone flat, 200yds(182m) from a seasonal creek.
Description: Stone arrangement consisting of a pathway, pens etc. covering an area of 150ft.(45m) x 80ft.(24m) and ranges from 4-12ins (10-30.5cm) high. Stones ranged in size from 1ft.(30.5cm) to 4ins. (10cm) long, and were the only large stones on the flat. Slides show a rough line of stones and a small heap, possibly less than 1m diam. and one stone high.
Associated finds: nil
Archaeological context: Campsites existed in adjacent creekbeds.
Site 17 was in the district.

19. Gum Creek 1 15-2-20 WC 6550 2220 [Black 1950:12,17-20; NPWS]
Location: On a slight rise 1.2km from Yantabunnia Ck.
Description: A number of yards marked by stones and heaps. One heap was 15ft.(4.6m) long. Stones used were up to 18ins.(45cm) in diam.
Plan shows 3 circles, one 7ft.(2.1m) diam, another 3ft.(0.9m) diam, lines open or enclosing roughly rectangular areas, and 6 heaps.
Associated finds: nil
Archaeological context: Between the creek and the site was an old campsite with many fireplaces, Pirri points and other flaked implements. Site was about 1.6km west of site no.20

20. Gum Creek 2 15-2-21 WC 6550 2220 [Black 1950:12,17-20; NPWS]
Location: On a slight rise 1.2km from Yantabunnia Creek
Description: Plan shows 3 heaps, 2 circles 10ft. and 8ft.(3m,2.4m) in diam. with connecting straight and curving lines, and one irregular and one square enclosure.
Associated finds: nil
Archaeological context: Site no.19 lay 1.6km east where a campsite and artefacts were also found.

21. Box Vale Stn. 15-5-5 WC 6210 2180 [Black 1950:12,22; NPWS]
Location: On a hill
Description: Patterns of stones not described in detail. Photos show circles, a curved line and clusters of stones one stone high. Photos on NPWS file by J. Gerritsen show extensive arrangements including parallel lines, a circle bisected by lines, lines in an L-shape or with a circle at one end, and one large bird-like design.
Associated finds: nil
Archaeological context: no details

22. Tarella 15-5-4 WC 6180 1620 [NPWS]
Location: On a small hill in a cleared area, 300m from a creek
Description: 3 circles made of silcrete rocks placed one after another. The largest was 8m in diam. The others joined it on the n/w and were respectively 1.5m and 3.5m in diam.
Associated finds: nil
Archaeological context: Less than 5km from sites 23 and 63
Remarks: Aboriginal significance unknown. An elderly Bagundji woman from Wilcannia did not deny that it may have been an initiation ground.

23. Tarella Stn. 15-5-1 WC 6170 1640 [NPWS]
Location: On a low ridge, covered with gibbers, 548m from a creek
Description: Pattern of stones. Slides show rough linear arrangements including one straight line. Stones ranged from 3ins.(7.6cm) to 1ft.(30.5cm) long. Many had been cracked and knapped. Outcropping rock included chert, jasper and quartzite.
Associated finds: nil
Archaeological context: Was an open campsite at same location. Less than 5km from site no.22

24. Nuntherungie Stn. 15-4-15 WC 5740 1720 [NPWS]
Location: On a rocky hill-slope
Description: Heaped up lines of stones and mounds, zigzagging up a cliff face, made of local, irregularly-shaped stones. It is difficult to distinguish between mounds and lines from the slides. One tapered stone, about 1m high, was placed upright.
Associated finds: nil
Archaeological context: nil
Remarks: Considered by local settlers to be Aboriginal in origin.

25. Wertago 15-4-29 WC 5760 1630 [NPWS]
Location: In a low saddle 100yds.(91m) from a waterhole
Description: Stone mound which, from the slides, seems to have an oblong plan, with a triangular section. It measured 18ft.(5.5m)x 11ft. (3.3m) x 3ft.(0.9m) high. Stones ranged from 2ins.(5cm) waterworn pebbles to 2ft.(61cm) sandstone slabs.
Associated finds: Artefacts adjacent to mound
Archaeological context: nil

26. Wertago 15-4-31 WC 5760 1630 [NPWS]
Location: On the west side of a waterhole
Description: Low, small and roughly circular mound consisting of large waterworn stones. It measured 8ft.(2.4m) across x 1ft.9ins (53cm) high and had spread at the base. Stones, mostly local sandstone, were fairly uniform in size, 8ins. and 6ins.(20cm,15cm) across.
Associated finds: nil
Archaeological context: nil

27. Tarella Stn. 15-4-34 WC 6080 1630 [NPWS]
Location: 200yds.(182m) from Bunker Ck.
Description: Earth mound covered with stones of various sizes and measuring 20ft.(7m) in diam and 4ft.(1.2m) high. Stones included waterworn rough quartzite, sandstone, ironstone and gibbers, 3ft.(0.9m) x 2ft.(61cm) x 1ft.(30.5cm).
Associated finds: nil
Archaeological context: Numerous large nardoo stones found 800yds.(731m) away. Same distance away was site no.28
Remarks: Site considered by some researchers to be the remains of a European dam.

28. Tarella Stn. 15-4-33 WC 6080 1630 [NPWS]
Location: On a gibber flat adjacent to Gap Creek.
Description: Earth mound covered with stones and boulders. It measured 21ft.(6.4m) x 13ft.(4m) x 2ft.6ins.(76cm). Stones were all sizes and comprised waterworn, rough, sandstone, quartzite and ironstone.
Associated finds: nil
Archaeological context: 800yds.(731m) from site no.27
Remarks: Site considered by some researchers to be the remains of a
29. Chaelundi Mountain 21-2-16 D 4384 6748 [NPWS]
Location: On an open granite outcrop, at an altitude of over 1100m, overlooking the valley of Chandlers Ck., in the heavily forested 'Gorge Country' of the eastern escarpment.
Description: An arrangement in two sections, one in the open and one covered by bushes. Numerous stones were placed in half circles and small mounds giving the impression of a deliberate pattern. Moss and lichen cover on the stones showed that they had not been moved for some time. The photos show irregular shaped rocks. A wall-like structure seems to contain stones too large for one man to lift.
Associated finds: nil
Archaeological context: no details
Remarks: Does not appear to be of direct significance to living Aboriginal people. The high location and openness of the site were important factors supporting an Aboriginal origin.

30. Reba, also referred to as Black Mountain 21-1-2 D 3685 6447 (McBryde 1974: 40-2; NPWS)
Location: On a flat 'table' between two of the highest peaks in the area
Description: 17 large heaps, many overgrown by bracken, some surrounding stumps of once large trees. There was one large central mound, which was once apparently surrounded by an earth circle known locally as a bora ring. Irregular shaped blocks of stones were used. The mounds ranged in size from 6ft.x 8ft. (1.8m x 2.4m) to 25ft.x 6ft. (7.6m x 1.8m).
Associated finds: no details
Archaeological context: There are accounts of carved trees having been at the site. A burial was reported on a nearby property.
Remarks: It was a traditional Aboriginal meeting place in the early period of settlement. Last ceremonies took place there in the 1880's.

31. Mount Anderson 21-6-101 D 4586 5942 [NPWS]
Location: On s/e summit of mountain in temperate rainforest
Description: A small elongated cairn 2m x 1m.
Associated finds: Old beer bottles found amongst the stones
Archaeological context: Other arrangements may exist in the vicinity. Mt. Anderson is a natural mythological site for Aboriginals of the Macleay Valley.

Location: Most features on an open rocky expanse on a spur facing s/e

Description: Two standing stones (A1, A4), about 3 ft (0.9 m) high, supported by smaller stones at the base, which seemed to form a kind of entrance-way to the site. Between them were 3 upright stones (A2a, 2b) joined by a line of small rounded stones to another upright (A3) 6 ft (1.8 m) away. Surrounding blocks (A3) suggested that this may also once have been a pair. To the south was a low circular wall (B1) about 1 ft (0.305 m) high and 4 ft (1.4 m) diam. From this circle, 2 irregular lines of small stones, which in the s/e make one line, led off down the slope in the direction of a stone erection resembling a seat. This was approached by 2 parallel lines of evenly matched stones, 12 on each side (C). East of B1 and C were 3 large rectangular blocks with smaller stones resting on top as if on a table (B9a-c). Beside these was a possible fallen standing stone, and east of the star-like formation (B3) of large blocks holding in position a small upright stone 18 ins (46 cm) high. North of the circle was an oval 6 ft (1.8 m) long marked out with small stones, enclosing a larger stone (B2). In the centre of the site and 145 ft (44 m) east of B3 was an arrangement about 4 ft (1.4 m) high of a number of long slabs balanced together (no longer extant).

Other arrangements: Mostly small upright stones in groups or single, 1 ft-2 ft (0.305 - 0.61 m) high. Several were wedged into fracture lines in the rock surface (e.g. B4, L1) but more usually they were held in position by 2-3 smaller blocks. There were also fallen blocks which may originally have been arrs. There were other groups of stones which may have been arranged but were now indistinguishable from naturally occurring rocks. Semi-circular arrangements included C2, B2. J1 was an oval, 6 ft x 9 ft (1.8 m x 2.7 m) while J4 was a large semi-circular heap and may reflect quarrying.

Associated finds: No details

Archaeological context: Separated from site no. 33 by a heavily timbered valley.

Remarks: Known as an Aboriginal bora ground by local residents. Problems were encountered in distinguishing artificial from natural features because of heavy weathering on exposed hill-tops. Aboriginal ceremonial significance was confirmed by V. Shepherd of Armidale.

33. Serpentine R. 2 21-2-10 D 5365 2241 [McBryde 1974: 48-9; NPWS]

Location: On an open area of rock outcrop on the summit of a spur

Description: Several large standing stones (H, K, L) and smaller upright stones (C1 & P) about 18 ins (46 cm) high were erected as at site no. 32. A, D, F were groups of stones which appeared to be significant and not natural. F2 & O may be disturbed eg's of arrs. C2, G, & N1 appeared to be fallen standing stones which when upright would have
been similar to H and the large standing stones of site no.32. Q was a smaller upright stone now fallen. F,F2,M,N,R may be the results of natural agencies or have once formed arrs. B,C,G1 & H2 were large rectangular stone blocks resembling tables, with curiously shaped stones set on top. J had 2 circles carved in rock- which was unlikely to be natural. E consisted of a flat slab in profile resembling a human face, set up against another stone to display this similarity. It may represent recent interference.
Associated finds: no details
Archaeological context: As for site no.32
Remarks: As for site no.32. This site was smaller and more disturbed than the latter.

34. Black Mountain 21-1-19 D 3679 6473 [NPWS]
Location: On top of a gentle slope on a hill-top, 200m from a spring
Description: A stone ring, 10m in diam., surrounded by long grass with a few small trees around the boundary. There seemed to be a track leading off in a n/e direction.
Associated finds: nil
Archaeological context: Site no.30 and a burial are in the same area.
Remarks: In 1982 the site was unknown to local Aborigines.

Location: On a flat open space of elevated ground
Description: A few low heaps of stones, each of only 3 or 4 large stones, arranged in an irregular semi-circle.
Associated finds: no details
Archaeological context: The site is near to two earth bora rings.
Remarks: The heaps may be the remains of a ceremonial ground.

Location: On an open granite surface sloping west on an impressive place on the edge of the escarpment
Description: A small group of stone arrs. including standing stones reminiscent of site nos.32 & 33. The main feature was a standing stone (3ft.10ins or 1.2m high) supported by several blocks, on the highest point of the slope. Two other standing stones were aligned down the slope on an e/w line. Several large granite blocks to the east and the slab set on its side held by smaller blocks to the s/w, may be associated with the main feature.
Features 2 & 3 consisted of a standing stone (3ft.or 0.9m high), and a thin slab (1ft.or 30.5cm high) set on edge, supported by a group of
smaller slabs. To the south was an arr. comprising a circular feature which may once have supported another standing stone, and nearby, one large slab (3ft.6ins. x 1ft. or 1.2m x 30.5cm) and 4 smaller ones were arranged to form what appeared to be a human figure with arms upraised. Near the edge of the escarpment were 2 small stones.

Associated finds: no details
Archaeological context: The site's features suggested an affinity with site nos.32 & 33 to the west. "It is tempting to consider them related, perhaps forming a complex with the Petroi site. However, in the absence of definite ethnographic data this can only remain a speculation"[McBryde 1974:50].

37. Kunderang Station 21-5-11 D 4198 5897 [NPWS]
Location: No details
Description: Suspected stone arrangement. Photo shows angular blocks in a heap about 20cms high and about 1m in diam.
Associated finds: nil
Archaeological context: nil
Remarks: According to an Aboriginal consultant, the site had no significance to local Aborigines, "however the property owner says it's about 100 years old according to the previous owner."

38. Housewater Creek 21-2-15 D 4350 6700 [NPWS incl.report of 1979 survey]
Location: On top of a spectacular promontory which falls away precipitously on all sides to river valleys below.
Description: 4 stone arrs. which have been arranged in such way as to merge with the natural rock. Site 1 consisted of about 50 stones in a semi-circle around a dip in the rock giving the impression of a shelter or hunting hide. Site 2 was 60m distant and had about 30 stones forming a broad crescent. Site 3 was smaller and appeared to be built within the natural shape of the rock, about 20 stones in a line. Site 4 consists of a circle of stones near the tip of the promontory.
Associated finds: nil
Archaeological context: Small depressions coloured red below the water-line were considered possible ochre-mixing pools. Site nos.29, 32, 33, 36 and 39 were in the area.
Remarks: Site was not of direct significance to living Aborigines in the region. The blending of the arrangements with the natural rock was considered to be significant.

Location: In a remote place in rugged terrain
Description: Granite cairn with a stone circle around it.
Associated finds: no details
Archaeological context: Was 0.8km n/w of an earth bora ring.
Remarks: The stone arr. was apparently last used for initiation ceremonies in 1924 and is still considered to be sacred ground. According to V. Shepherd, the Petrol sites were abandoned because of their isolation.

40. Eastview/ Clever Man Site 21-1-15 D 3840 6320 [NPWS]
Location: On a rocky hill surrounded by open woodlands
Description: A small ring made of irregular-shaped pieces of stone. The perimeter was a few stones thick with some overlapping. From the photo it seems to be less than 1m in diam with a perimeter of about 30-50cm thick. Stones could have been lifted by one person.
Associated finds: nil
Archaeological context: 13yds. (12m) east was a clay mound, 15ft. (4.5m) in diam. An Aboriginal campsite within sight of the mound was reported.
Remarks: According to a local Aborigine, the Clever Man guarded the site and tribal members were forbidden to go there. In 1980, the site held no importance for local Aborigines. There had also been a European gold-mine at the site.

41. Boorungee Station 23-3-227 BH 5540 1150 [NPWS]
Location: No details
Description: Stone arrangement. No other details.

42. Mootwingee/ Mailbox Paddock 23-3-235 BH 5330 1384 [NPWS]
Location: No details
Description: Stone arrangement. No other details.
Associated finds: nil
Archaeological context: Site belongs within a complex of weathered paintings and engravings.

43. Mootwingee/New Tank 23-3-265 BH 5310 1373 [NPWS]
Location: On a claypan at the end of a small rise, 120m nth. of Gum Ck.
Description: Large arrangement. Although much displacement had occurred, small sections showed definite unnatural arr. Most of the arr. was visible. The basic pattern appeared to be two U-shaped paths, each terminating in a low stone cairn. The stone was readily available from the creek bed.
Associated finds: no details
Archaeological context: Site lay in the midst of a very extensive campsite, and work areas, the latter being lithic concentrations. Artefacts showed use of backed blade technology. Stone mounds were reported within 2km of the sites 49 and 50.
Remarks: No permanent or temporary waterholes were reported in the vicinity, and Gum Ck, was known only to be an infrequent waterway.

44. Nine Mile Creek 23-4-1 BH 4430 0580 [NPWS]
Location: On a flat area below a large boulder outcrop 400m from ck.
Description: Stone arrangement comprising one upright stone 1m high supported by four slabs radiating out; a similar arr. except that the upright stone had fallen down; and 3 boulders (each approx. 30cm x 35cm) placed so as to be slightly overlapping.
Associated finds: nil
Archaeological context: The site lay between a campsite consisting of fireplaces and artefacts, and rock engravings on the boulder outcrop. The artefacts included a horse-hoof core, blades, a tula adze(?) and flakes, and were made of quartz and chert.
Remarks: The site stood out on the low bushy landscape.

45. Mount Gipps Station 23-5-1 BH c.4580 0870 [NPWS]
Location: no details
Description: Large stone heap, 20ft.(6.1m) in diam. No other details.

46. Mulga Springs 23-5-2 BH c.4659 0579 [Dow 1938a:131-3; NPWS]
Location: On flat ground beside Ironstone Ck. In rugged hills.
Description: Ceremonial design according to Dow, built of stones of all shapes and sizes. It was 176ft.(54m) long. Plan shows long parallel lines, two sets of which lead into a large circular enclosure.
Associated finds: nil
Archaeological context: nil

47. K Tank 23-5-3 & 23-5-5 BH 4660 0580 & 4690 0630 [Black 1950: 28-9, 31,37; Dow 1938b:31-3; NPWS]
Location: On a ridge in the bend of Mulga Springs Ck.
Description: One heap 43ft.x15ft.x 4ft.high (13m x 4.6m x1.2m). May have had a semi-circular or triangular section before disturbance. A cleared pad extended west from it. At the creek was a smaller, circular, possible spoil heap [after Dow]. Black also noted two sets of parallel lines.
Associated finds: Numerous flakes were found near the mounds.
48. Mootwingee Stn. 23-3-29 BH 5330 1400 [NPWS]
Location: On top of a ridge in a scrubby area, 500yds.(450m) to ck.
Description: Two stone mounds made of flagstones up to 10ins(25cm) in size. The mounds measured 13ft x 8ft.6ins x 3ft. high (4m x 2.6m x 0.9m) and 8ft.x 6ft x 1ft.6ins. high (2.4m x 1.8m x 45cm). There were some scattered stones about the mounds but most of the ground in a radius of 20ft.(6.1m) was denuded of stones.
Associated finds: nil
Archaeological context: Less than 1km from a complex of art sites.

49. Mootwingee Stn. 23-3-52 BH 5330 1370 [NPWS]
Location: no details
Description: Two circular stone mounds, 14ft.(4.3m) in diam.x 2ft. (61cm) and 10ft.(3m) in diam.x 21ins.(53cm). Stones were all sizes and were a tessellated pavement/remnant type. Slides show that the stones had spread at the base.
Associated finds: nil
Archaeological context: There was an open campsite near the site.

50. Mootwingee 23-3-68 BH 5330 1370 [NPWS]
Location: Adjacent to a service track on top of a spur, 800yds (720m) to nearest water
Description: Slides show a circular 'heap', 9ft.x 9ft.(2.7m x 2.7m), 2ft.3ins.(68cm) high and spread at the base. Stones were flagstones and pebbles.
Associated finds: nil
Archaeological context: Several campsites lay 30ft.(9m) west.

51. Mootwingee 23-3-71 BH 5340 1360 [NPWS]
Location: On top of a ridge
Description: 4 mounds, the first of which was on a clear saddle and was easily visible from the north. 2 large mounds, 15ft.(4.6m) diam.x 4ft.(1.2m) high and 8ft.(2.4m) diam. x 2ft.(0.6m) high were in line with rockholes. The smaller mounds, 4ft.(1.2m) diam. x 9ins.(23cm) high and 3ft.(0.9m) diam.x 6ins.(15cm) high, were between the large ones. The stones varied from 2ins.to 12ins.(5cm-30.5cm) in length.
Associated finds: nil
Archaeological context: A rock engraving site lay in the vicinity.
52. Poolamacca 23-4-3 BH c.4495 1023 [Black 1950:32,35-6; NPWS]

Location: On flat ground, no other details

Description: 8 rectangular mounds in parallel formation ranging from 6ft.x 2ft.(1.8m x 0.6m) to 7ft.x3ft.(2.1m x 0.9m) in size, and one larger rectangular mound, 9ft.x5ft.(2.7m x 1.5m) beside 2 oval mounds, 6ft.x 3ft.(1.8m x 0.9m) and 8ft.x 3ft.(2.4m x 0.9m). In 1908, the mounds were about 20ins.(50cm) high and built up neatly. By 1945 they had deteriorated.

Associated finds: nil

Archaeological context: 2 other groups of graves were reported on the property, one about 2 miles (3.2km) away, which appeared to be much older, and the other further up the creek past the homestead.

Remarks: The owner remembered a burial taking place in the area and a stone mound being built over it. This site has been registered by NPWS as burial site-type.


Location: On a plain, 4 miles (3.3km) north of Broken Hill

Description: 129 'hearths' arranged in 4 or more irregular groups, and spread over an area of about 60yds.(55m) e-w and 450yds.(411m) n-s. The best preserved and most impressive consisted of 40-50 stones (mostly flat schistose material), purposefully placed to make a flat mosaic surface. Some with more irregular and smaller stones were not so closely packed and some were scattered.

They ranged from 1ft.-4 1/2ft.(30.5cm-1.4m) in diam. and most were raised a little above the soil probably due to erosion. Few stones were longer than 4ins.(10cm).

Associated finds: Some of the stones had charcoal underneath.

Artefacts included a large horsehoof type, 4 micro-tula types, 2 quartzite implements- scraper type, 10 irregularly flaked fragments made of quartz, quartzite or chert, and one broken grinding stone.

Archaeological context: There were several small groups of similar 'hearths', no more than 3 or 4 together, in the area.

Remarks: The authors did not dismiss the possibility of the site having had a ceremonial function. It is registered as an open site and possible stone arrangement by the NPWS.

54. Mootwingee Stn. 23-3-143 BH 5380 1290 [NPWS]

Location: On a rock surface, on a 'bench' 400yds.(36m) up from a dam wall across a creek.

Description: Slides show 2 rough heaps with large stones in the middle. They measured 3 1/2ft.x3ft.x1ft.high (1m x 0.9m x 30.5cm) and 4 1/2ft.x 6ft.x 1ft.high (1.4m x 1.8m x 30.5cm). The stones were
up to 8ins.(20cm) in diam.
Associated finds: nil
Archaeological context: Scarred tree and 20 art sites recorded at same grid ref.
Remarks: The recorder presumed some antiquity on account of there being a lot of sand between the stones.

55. Waterbag 23-3-196 BH 5410 1210 [NPWS]
Location: 50yds.(46m) sth. of a low rise saddle and adjacent to the end of a remnant ridge. 400yds.(366m) from a creek.
Description: Mound, 10ft.(3.5m) in diam.x 3 1/2ft.(1m) high. Slides show a roughly circular shape with one prominent cobble.
Stone was sandstone- pebble to flag block 12ins.sq.(30.5cm) x 6ins.(15cm)
Associated finds: nil
Archaeological context: Sites 56-9 and 23 art sites were reported at same grid ref.

56. Waterbag 23-3-198 BH 5410 1210 [NPWS]
Location: In a cleared area on a stony flat, 50yds.(45m) from creek
Description: Roughly circular mound 3 1/2ft.(1m) in diam. x 1ft.(30.5cm) high. There was much sand and soil in the mound. Stones were sandstone pebble to flagstones.
Associated finds: nil
Archaeological context: 700yds.(640m) from site no.57. At same grid ref. as sites 55,57,58,59 and 23 art sites.

57. Waterbag 23-3-199 BH 5410 1210 [NPWS]
Location: In a cleared area on a stony flat. 100yds.(91m) from creek
Description: Roughly circular mound, 4 1/2ft.x 4ft.x10ins.high (1.4m x1.2m x 25cm). Appears from slides to be only one stone high.
Stones are sandstone pebble to flagstones.
Associated finds: nil
Archaeological context: 700yds.(640m) from site no.56. At same grid ref. as sites 55,56,58,59 and 23 art sites.

58. Waterbag Station 23-3-205 BH 54101210 [NPWS]
Location: At edge of a slope on a distinct corner of a creek.
Description: Irregular or amorphous heap, 8 1/2ft.x 8ft.x2 1/2ft.high (2.6m x 2.4m x 0.7m). Stones were a mixture of large and small sandstone flag blocks. There was some vegetation amongst the stones.
Associated finds: nil
Archaeological context: 40yds.(36m) from pecked rocks.
200yds. (183m) upstream from site no. 59. At same grid ref. as sites 55, 56, 57, 59 and 23 art sites.

59. Waterbag Station 23-3-206 BH 5410 1210 [NPWS]
Location: On east side of a crest and 30 ft. (9 m) from creek
Description: Mound, 8 ft. (2.4 m) in diam. x 2 ft. 9 ins. (0.8 m) high. Stones were sandstone pebbles to flag blocks. Slides show site was overgrown with the large blocks prominent.
Associated finds: nil
Archaeological context: 200yds. (183 m) downstream from site no. 58. At same grid ref. as sites 55-8 and 23 art sites.

60. The Ramparts, Waterbag 23-3-207 BH 5410 1160 [Black 1943: 16; Black 1950: 37; Dow 1938b: 30-6; NPWS]
Location: Across a crest of a high ridge.
Description: 2 large oval cairns, 25 ft. x 10 ft. x 3 ft. high (7.6 m x 3 m x 0.9 m) and 28 ft. x 10 ft. x 3 ft. high (8.5 m x 3 m x 0.9 m), and a very small one, all in the same line [after Dow]. Made of local stones up to slabs 18 ins. (45 cm) across. They had been surrounded by a ring of upright stones, only a few of which were standing when reported by Dow.
Associated finds: nil
Archaeological context: There were art shelters and caves with stencilled hands, and engravings in the vicinity.

61. The Gorge 23-5-6 BH c.4695 0530 [NPWS]
Location: On a claypan with eroding sand patches
Description: 2 stone arrangements, one of which (A) was of questionable origin. (A) consisted of a line of stones about 5 m long, and an irregular square outline of stones about 4 m across. (B) was a pattern of stones consisting of two sets of parallel lines, each about 3 m wide, converging. About 10 m east, there was a U-shaped enclosure, 9 m x 11 m approx. with the open end facing east. The southern arm of this consisted of a set of parallel lines running e/w while the rest of the shape was formed by a single line of stones.
Associated finds: nil
Archaeological context: Fireplaces, implements and flakes were liberally scattered over the surrounding area. Finds included 2 broken grindstones.
Remarks: The area had been used as a campsite by the Army, Telecom.

62. Tarella Stn./Kurnow Paddock 24-1-76 W 6050 1530 [NPWS]
Location: On either side of a creek, on a floodable plain
Description: 2 earth mounds covered with stones set on edge,
11ft x 10ft x 2 1/2ft. high (33.5m x 30.5m x 0.7m) and 21ft x 10ft x 3ins. high (64m x 30.5m x 7.6cm). They were separated by 100yds. (91m) and a creek. Stones included water-washed boulders mostly off the adjacent ridges 1/2mile (0.8km) away, and some quartzite, ironstone, brechia and sandstone not waterworn. The mounds were not completely circular in plan.

Associated finds: nil
Archaeological context: A scarred tree reported at same grid ref.

63. Glengowrie Stn. 24-2-1 W 6180 1580 [NPWS]
Location: On a low ridge with outcropping stone, 100yds (91m) from water.
Description: 27 mounds possibly not more than 2m in diam. and 2-3 stones high. Sides show them scattered at the base. The stones were all sizes, mostly boulders about 1ft. (30.5cm) across. The mounds seemed to form a pattern of two short lines offset slightly, which ran perpendicular to a curved line of heaps. There were a few other mounds scattered about the lines.
Associated finds: nil
Archaeological context: nil

64. Mount Foster 27-2-2 N 5700 1340 [Towle 1939a:200; NPWS]
Location: On the mountain summit
Description: There was a pile 9ft. (2.7m) and 4 1/2ft. (1.4m) high on the apex, built up by slabs of rock laid down horizontally. It was probably higher originally. Adjacent to this in the direction of Mt. Harris was a heap 6ft. (1.8m) in diam. and 1ft. (30.5cm) high. Further east was another heap, 8ft. (2.4m) in diam. and 2ft. (0.6m) high. West of the apex pile was probably a small oval of stones some 11ft x 9ft. (3.3m x 2.7m). In the middle, a few stones had been heaped, and towards the higher end a circle of stones 2ft. (0.6m) in diam. was still well outlined. There were two more heaps on the summit as well as some accumulations of large stones covering part of the rock surface.
Associated finds: Several implements were found on the summit.
Archaeological context: Site 65 lay about 1 mile (0.8km) away while sites 66 and 67 were in the area. Ground edge axes had been collected in the vicinity.
Remarks: The apex pile and oval seemed to have been constructed with care while the others were jumbled heaps. The site is also registered as a quarry for quartz, felspar and porphyry.

65. Mount Foster 27-2-3 N 5705 1335 [Towle 1939a:200; NPWS]
Location: At the foot the mountain
Description: A pile 10ft. (3m) in diam. and 2ft. (0.6m) high, and
towards the river were badly disturbed heaps and clusters of stones. 
Associated finds: nil
Archaeological context: Aboriginal camp-fire remains and implements 
were found nearby. Site 64 lay about 1 mile (0.8km) away and sites 66 
and 67 were in the area.

66. Twenty Stone Paddock  27-2-4  N 5705 1299 [Towle 
1939a:205-6, NPWS]
Location: On a claypan
Description: A irregular line of 21 stones (originally 20) running e/w 
for about 40ft. (12m). Some of the stones were more than 1ft. (30.5cm) 
In diam, and innumerable flakes had been removed from their 
surfaces.
Associated finds: Some of the flakes lying about the stones showed 
signs of use.
Archaeological context: There was evidence for the use of the 
claypan as a camping place; heaps of burnt clay and seed grinding 
stones were found. Ground-edge axes were collected in the vicinity of 
Mts. Harris and Foster.
Remarks: The stones had undoubtedly been carried to the claypan. If 
the present alignment was original, then the stones would not only 
have been parallel to Mt. Foster, but also to the arrs. on its summit. 
There is a reference to the site being of mythological significance on 
the NPWS file.

67. Little Mount  27-2-5  N 5715 1255 [Towle 1939a:206; NPWS]
Location: On a hill summit
Description: Heap of stones similar to those at site 64. It was 
probably 8ft. (2.4m) in diam. and 2ft. (0.6m) high before it was 
demolished.
Associated finds: nil
Archaeological context: The hill was quarried for axes.
Remarks: It is also registered by NPWS as a quarry for quartz, felspar 
and porphyry.

68. Heyfield  28-3-3  G 7509 5619 [Amey 1962:494-6; NPWS]
Location: On the n/w face of a basalt rise
Description: 3 circles (one about 5m in diam.), 3 semi-circles 
(1mx2m) and 3 heaps, situated in an oval series about 130m x 30m.
Most of the arrs. were built around, or incorporated, a tree. The stones 
were unshaped basalt lumps.
Associated finds: nil
Archaeological context: Surface scatters, one 80m from arrs., in a 
nearby paddock. Grinding stones and fragments of edge-ground axes
were found near a creek in the vicinity. Scarred trees were also present although their origin was unclear.

69. Coonabarabran 28-2-2 G 7053 5363 [NPWS]
Location: Near the edge of a plateau with views to the north
Description: 2 rings (3m in diam. and 6m x 5m) 88m apart on an e/w axis, and made of oval-round and regular in size stones distinct from those surrounding. The smaller, western circle had been partly obliterated. If a path between the two ever existed it had become indiscernable.
Associated finds: nil
Archaeological context: Artefact scatters 3km east and a occupation shelter 2km distant.
Remarks: Significance to Aborigines unknown. The site was of difficult access.

70. Nandi Creek 28-2-5 G 7150 5380 [NPWS]
Location: On a river flat below the steeply rising Mt. Nandi
Description: Rocks arranged in patterns, the most common of which was parallel lines with ring-barked trees at each corner. Others on the plan included broken straight lines, clusters, semi-circles, an oval, an s-shape and a scatter. One stone bore an engraved fleur de lis and a bird.
Associated finds: nil
Archaeological context: The initial settlement of Coonabarabran lay 500m east.

71. Mullally Mt. 28-3-1 G 2853 1463 [NPWS]
Location: On lower mt.slopes in open bushland, next to a dry creek
Description: Mound of loose small chunks of granite, 5m x 3m.
Associated finds: nil
Archaeological context: A no. of disturbed mounds lay 8m higher. It was suggested that they were burials. Site 74 lay on the summit.

72. Argyle 28-3-30 G 2868 1260 [NPWS]
Location: On a hill-slope, overlooking Liverpool Plains
Description: Two basalt piles, 5.8m x 2.3m, and 2.5m in diam, suspected to be artificial. Not considered to contain a deposit.
Associated finds: nil
Archaeological context: Site 73 lay less than 1km s/e.
Remarks: Their significance to Aborigines was unknown.
73. Plain Camp 28-3-23 G 2858 1267 [NPWS]
Location: On a grassy hill-side, 1–2 miles (1.6–3.2km) to perm.water
Description: 7–9 mounds possibly forming one set of parallel lines.
Average 2.5m long and 2.7m wide and circular-oblong in plan.
Associated finds: Numerous flakes and worked cores made of chert,
and one ground-edge axe.
Archaeological context: Site 72 lay less than 1km n/w
Remarks: Recorder wondered if it was a burial site.

74. Mullally Mt. 28-3-38 G 7765 5526 [NPWS]
Location: On a mountain summit
Description: Three piles, less than 50cm high, and one stone stood on
its edge. One further pile may have lain on the precise site of the
Geodetic Stn.
Associated finds: nil
Archaeological context: Site 71 lay at the foot of the mt.

75. Alectown 35-6-8 Nr 6273 9246 [NPWS]
Location: On a huge flat rock (12.5m at widest pt.) on rocky hill top
Description: Row of stones (up to 20cm in diam.) radiating out from
the flat rock, extending 17–28m. Some of the lines were curved,
some hooked at right angles. Some gaps in the lines may be original or
due to disturbance. In the centre of the rock was a 1m in diam. section
which made a hollow sound when tapped. ‘This unusual natural feature
could explain why the local tribe selected this site for their
ceremonies.’
Associated finds: nil
Archaeological context: nil
Remarks: Site was known as the old bora ground of the local tribe.

76. Talbragar 36-1-46 Du 1578 0169 [NPWS]
Location: No details; photos show level ground
Description: Circular formation, about 9ft.(2.7m) wide from the
outside, with dirt collected in the middle. The rocks visible within
the circle formed a cross, 4ft.x 3ft.(1.2m x 0.9m). There were no
rocks of similar size in the area.
Associated finds: Small stone chips and flakes, perhaps indicating a
quarry nearby.
Archaeological context: nil
Remarks: Photos show overgrown site. Above description is difficult
to confirm [R.S]
77. Puggoon 36-3-32 Du 2460 0190 [NPWS]
Location: On a cleared area in a gully
Description: Photos show an accumulation of stone in two possible heaps. They were very scattered and consisted of irregular shaped blocks.
Associated finds: nil
Archaeological context: Grinding stones, graves, shelters, and a waterhole were in the area. Aboriginal significance was unknown.

78. Triamble 36-5-13/36-5-3 Du 2240 9330 [Gresser 1963a:1; Pearson 1981:556; NPWS]
Location: On a flat sheet of basalt a few hundred yds. from a creek
Description: One large cairn, c.15ft.x 5ft.high (4.6m x 1.5m), surrounded by 4 cairns about half the size and 6ft.(1.8m) away. There was also a line of 3 heaps about 4yds.(3.6m) apart. They were all built of local basalt.
Associated finds: nil
Archaeological context: Pearson noted the remains of another large cairn on a nearby ridge high above the river. There was once an earth effigy of a man 20ft.(6m) long at the head of Triamble Ck.
Remarks: There is ethnohistorical evidence for Aboriginal activities in the valley. An Aboriginal myth is associated with the site in which the spirits of the dead jumped from the heaps into the sky, the home of Baimai.

79. Baalveck 36-4-21 Du 185 976 [Pearson 1981:556; NPWS]
Location: 500m from permanent water, no other details
Description: Reported to be a circle or square in river stones and to be one of the Wellington bora grounds.
Associated finds: nil
Archaeological context: There was an open campsite on the property with artefacts and hearths.
Remarks: Not located by Pearson.

80. Maryvale Ck. 36-4-20 Du 184 980 [Pearson 1981:556; NPWS]
Location: West of the creek, no other details
Description: 11 cairns, at least 4 of which seemed to be the result of quarrying. It is unclear whether they were by-products, or the quarrying was the result of cairn construction.
Associated finds: nil
Archaeological context: It lay opposite a campsite.

81. Gentle Rise/Mogrigy 36-1-37 Du 157 031 [Pearson
1981:556; NPWS]
Location: Near a soak, no other details
Description: 7 cairns, up to 3m in diam. and 50cm high, spread over 200m.
Associated finds: nil
Archaeological context: Nearby sites included axe-grinding grooves, a surface campsite and a pecked rock.
Remarks: Registered by NPWS as a quartzite quarry.

82. Marrington 36-1-1 Du 157 018 [Gresser 1963b:2; Pearson 1981:557; NPWS]
Location: On a stony ridge on a hill top
Description: 2 lines of stones 7ft. apart (2.1m) and 130ft. (39m) long forming a half-circle and designed as a pathway. On the top left hand side was a narrow opening from which lead a short pathway into an almost 21ft. (6.4m) square enclosure. On the right hand side of the half circle was an opening leading directly into another larger enclosure about 23ft.x 20ft. (7m x 6m).
Associated finds: nil
Archaeological context: There was a report of marked trees originally around the arrangement. Axe-grinding grooves and a bora ground have been reported in the district.
Remarks: A corroboree was reported to have been held on the hill in 1881. The measurements above are from Gresser.

83. Cainbill Ck. 36-3-73 Du 265 037 [NPWS]
Location: 100yds.(91m) from a creek, no other details
Description: Oblong mound, 20ft.x 8ft. (6m x 2.8m) and about 2-3 stones high. Photo shows large irregular-shaped blocks.
Associated finds: nil
Archaeological context: On a sandstone outcrop near the creek were axe-grinding grooves and a rockhole.
Remarks: The recorder thought it was a campsite.

84. Condobolin 43-1-4 F 5160 9105 [McCarthy 1970:19; NPWS]
Location: On a hill slope
Description: 124 low heaps up to 8ft. (2.4m) in diam. and 1 1/2ft. (45cm) high arranged in rows 1/4 mile (0.4km) long, from a terminal line of the same length at one end. Many of the heaps were arranged around trees. There were also a number of basins up to 30ft. (9m) long dug out of the ground, and some of the heaps were in them and on heaps of spoil.
Associated finds: nil
Archaeological context: Open campsites along riverbanks within 1km.
Remarks: According to F.D.McCarthy [interview Sept.1986], the site was sacred to the local Aborigines. Registered by NPWS as a ceremonial ground.

85. Driftway 43-6-7 F 6150 8200 [NPWS]
Location: On a large flat rock on a hill-side
Description: Stones arranged in 3 lines 7ft.(2.1m) apart and up to 50yds.(46m) long. Photos show slightly curved lines radiating out from a large rock. The rocks were small and irregular in shape.
Associated finds: Some artefacts had been collected in the past and were now lost.
Archaeological context: nil
Remarks: The site is registered by NPWS as a bora or ceremonial site.

Location: On a low ridge above a small hollow on undulating land
Description: A small oval, 6ft.-7ft.(1.8m-2.1m) x 3ft.(0.9m). The stones were rounded, flat and waterworn. A rounded smooth boulder 1ft.(30.5cm) in diam. was set at the eastern end. The stones were placed up to 10ins.(25cm) apart, flat upon, and partially embedded in the ground.
Associated finds: nil
Archaeological context: There was a report of another arrangement at the same grid ref.consisting of 10 small circles, but now destroyed.
Remarks: Gresser’s informants differed over the exact dimensions of the oval. They had bull-dozed a hole in the site to see if there was a burial underneath ( there wasn’t).

87. Mt.Oberon 44-6-16 B 280 844 [Pearson 1981:556; NPWS]
Location: no details
Description: 6 river stones in a Y-shaped arrangement
Associated finds: nil
Archaeological context: 2km s/e from a quarry site.
Remarks: Said to have been 4 arrs.originally but 3 were bull-dozed.

88. Evans Crown 44-6-19 B 292 855 [NPWS]
Location: In a paddock, originally adjacent to a river
Description: Two rings, 21m and 4m in diam., and a mound 7m long. Sketch suggests that the larger ring was oval in shape. Photo shows a section of a curved line of even-sized stones.
Associated finds: One certain artefact found.
Archaeological context: nil
89. Hodges Gully 44-6-20 B 284 833 [NPWS]
Location: On a slight slope, 100m from water
Description: Mound made of irregular volcanic stones. Photo shows a low heap or compact cluster (one stone high). No other details.
Associated finds: nil
Archaeological context: Hearths were exposed at the low water level of the nearby river.

90. Lime Kilns 44-3-25 B 278 886 or 2781 8871 [Gresser 1961:5-7; Pearson 1981:555; NPWS]
Location: On a narrow, bare ridge top
Description: 14 or 17 circular cairns extending over 500yds.(460m) in a rough line built of smooth rounded boulders. The largest was 10ft.(3m) in diam. and the smallest about 3ft.(0.9m) in diam. The highest was 3-4ft.(0.9-1.2m). Each one had a hollow depression in the top up to 2 1/2 ft.(76cm) in diam. and 15ins.(38cm) deep.
Associated finds: nil
Archaeological context: More cairns were reported on a nearby ridge.
Remarks: Pearson found no evidence of a hitherto reported ochre quarry at the site. He also had the site extending over 300m.

91. Oberon 44-6-18 B 2780 8399 [NPWS]
Location: no details
Description: Oval arrangement, 2.5m x 1m.
Associated finds: nil
Archaeological context: nil

92. Manildra 44-1-4 B 1655 8940 [NPWS]
Location: On the eastern side of a slight hill
Description: A pile purported to be an old Aboriginal grave.
Associated finds: nil
Archaeological context: There is a confusing reference to another arrangement on the NPWS site card. According to local settlers, the area was once an Aboriginal camp-site. Axes and a nardoo stone have been collected in the area.

Location: Set on soil in an irregular-shaped depression in a flat sheet of granite, 70-80yds.(64-73m) from a ck.
Description: Small cairn about 2 1/2ft.(76cm) in diam. and 1ft.
(30.5cm) high. Built of small flat granite stones.
Associated finds: nil
Archaeological context: A cairn, an eroded campsite and a rockhole lay about 200yds. (183m) upstream. Artefacts have been collected in the area.

94. Swallow Creek 44-2-9 B 2385 8780 [NPWS]
Location: On a sloping sheet of granite, 80yds. (73m) from a creek
Description: Small cairn, 2-3ft. (0.6-0.9m) in diam. and 1ft. (30.5cm) high. Stone must have been brought to the site as there were no loose fragments on the granite surface.
Associated finds: nil
Archaeological context: nil

Location: On flat mountain top
Description: 4 definite and 7 probable but disturbed cairns. The largest was 2m x 1.7m x 0.2m high [after Pearson]. Gresser noted 13 cairns, and 123 large boulders which had been brought up to the clearing. The latter were doubted by Pearson.
Associated finds: Large cores and numerous fragments of basalt were found (as well as at campsites in the area), and a hammer/anvil made from a pebble.
Archaeological context: Campsites in the region
Remarks: First reported by Governor Macquarie in 1815.

96. Oaky Ck. 44-2-29 B c.237 873 [Pearson 1981: 619; NPWS]
Location: On the upper reaches of a creek
Description: Cairn made of small granite slabs, 1m x 30cm high.
Associated finds: nil
Archaeological context: nil

97. Winburndale Rivulet 44-3-2 B 2478 8973 [NPWS]
Location: On top of a sloping clay bank of a small watercourse
Description: Small pavement-like cluster of stones, consisting of coarse sedimentary rocks and thick flattish stones. Fire action on the stones was apparent. It measured 3ft. (0.9m) x 2 1/2ft. (76cm).
Associated finds: nil
Archaeological context: An open site at the same location.
Remarks: Possibly an oven, according to the recorder.
98. Winburndale Rivulet 44-3-9 B 2482 8963 [Gresser 1963d:1; NPWS]
Location: On two ridges below Black Mt.
Description: 2 arrangements. One consisted of 2 roughly circular arrs. some 5yds.(4.6m) apart and both flattened on top. They were about 1 1/2ft.(45cm) in diam. They were made of coarse sedimentary rocks some showing evidence of fire. The second was a cluster of stones. Scattered pieces of burnt stone were on the eroded margins of the ridge.
Associated finds: nil
Archaeological context: Site no.101 was similar in form and setting.

99. Bald Hills 44-3-12 B c.251 863 [Gresser 1961:4; NPWS]
Location: On summit of a steep hill with no water in the vicinity.
Description: 3 groups of cairns, consisting of 6, 5, and 5-6 cairns respectively. They were all roughly uniform in size, 4ft.(1.2m) in diam. and c.2ft.(0.6m) high.
Associated finds: nil
Archaeological context: nil

100. Panorama Hills 44-3-13 B c.2515 8645 [NPWS]
Location: In a small natural amphitheatre, at the head of a gully
Description: Small circular arr. 3ft.7ins.x 3ft.x 1ft.2ins.high (1m x 0.9m x 35cm), made of basalt. The latter rested on the other, 3-4 in places forming a low wall.
Associated finds: nil
Archaeological context: nil
Remarks: Site was not visible at a distance from any direction. The nearest water was 1 mile (1.6km) away.

101. Duramana Ck. 44-3-16 B c.254 885 [NPWS]
Location: Near the edge of a sloping bank not far from a rockhole
Description: Small arrangement consisting of 10-12 flat stones placed closely together.
Associated finds: nil
Archaeological context: A scatter of flakes and chips made from quartzite, quartz and basalt lay on a nearby ridge.

102. Wiagdon Ck./Millah Murrah 44-3-20/44-3-49 B 259 894 or 258 8935 [Gresser 1961:6-7; Pearson 1981:557; NPWS]
Location: In a saddle between two valleys
Description: A circular and flat-topped cairn, 8yds.(7.3m) in diam.and 3-4ft.(0.9-1.2m) high. It had a well-defined basin 4ft.(1.2m) in diam.
and c.1 ft. (30.5 cm) deep in the centre on the top. There was a 2 ft. (0.6 m) and 1 ft. (30.5 cm) trench leading from the basin to the outer edge of the cairn. It was made of irregular sedimentary stones with a few small white quartz stones, which were not found in the site's vicinity. There was also one waterworn boulder not natural to the site.

Associated finds: nil
Archaeological context: Older residents reported scarred and carved trees originally near the site. An axe was found on a nearby property. Remarks: There was a local legend about a battle between the Aborigines from the two valleys after which the slain were buried under the cairn. However, Gresser believed the ground was too stony for a burial.

Location: On the summit of a ridge, with water in nearby Gulf Ck.
Description: Parallel lines of stones 25 m wide and 150 m long connecting natural outcrops [after Pearson]. Gresser described a far more elaborate series of lines commencing at the level of a creek and terminating near the top of cliffs.
Associated finds: nil
Archaeological context: nil

104. Stoney Ck.  44-3-38  B 248 883 [Gresser 1961; Pearson 1981:540; NPWS]
Location: At the head of the creek
Description: 2 cairns
Associated finds: nil
Archaeological context: Associated with campsites and artefacts: flaked pieces, cores, scrapers, backed blades, elouera etc.

Location: On a steep hill with two bare knolls, with extensive views
Description: 2 small disturbed cairns, no more than 2 ft. (0.6 m) in diam. and c.1 1/2 ft. (45 cm) high on one knoll. 3 disturbed cairns on the other knoll and one large cairn, in a saddle between. The stones were irregular-shaped basalt from the hill.
Associated finds: nil
Archaeological context: nil

106. Mt.Apsley  44-3-43/44-3-11  B 251 868 [Gresser 1961:4-5;
Location: On a bare hill summit
Description: 2 piles, 6yds.(5.5m) apart, c.5ft.(1.5m) in diam. and 2-3ft.(0.6-0.9m) high.
Associated finds: nil
Archaeological context: nil

107. Panorama Hills 44-3-65 B 251 865 [NPWS]
Location: On a hill-top, approx. 500m s/e of a ford
Description: A cairn. No other details.

108. Hoddles Hill 52-5-40 Wg 3632 7288 [NPWS]
Location: On a hillslope and on a spur within rainforest
Description: About 100-120 mounds in 3 groups. They probably once formed one continuous line but the mid-section had been bull-dozed. They varied in size and shape. Groups A and B tended to be rounded in profile while C mounds were pyramidal, but this may have been due to the availability of more angular-shaped rocks near the latter. A mounds averaged 2.5m x 2.2m x 1.2m high. Mounds were constructed by placing rocks evenly around the perimeter and then tossing rocks into the centre.
Associated finds: nil
Archaeological context: nil
Remarks: Recorder doubted if the site was Aboriginal. It could be due to army training exercises or land clearance. It was considered to be larger than any authentic Aboriginal arrangements on the south coast.

109. Minnamurra 1 52-5-136 Wg 3735 7237 [NPWS]
Location: On a ridge slope leading to the base of an escarpment
Description: 5 groups of mounds. The main group of 18 mounds at the base of the ridge, was scattered about in no discernable pattern. Other groups existed to the east, one of 3 mounds at 50m, one of 2 at 70m, and one of 2 at 300m. The remaining group of 2 mounds was on a flat area beside the creek. Some mounds were piled up with care being boxed in shape with similar sized stones. Others appeared to be loose piles of different sized rocks.
Associated finds: nil
Archaeological context: A European post and nail fence had been erected near the main group and a low long mound built beneath it.
Remarks: An European origin was discounted because of the scattered nature of the mounds. J.Campbell of the Shoalhaven Aboriginal Community considered the site to be highly significant: that it marked a boundary between the Wadi Wadi to the east and the Burrara people to the west.
110. Wogamia 52-5-19 Wg 3551 6936 [Bindon 1976:13-16; Towle 1942b:172-4; NPWS]
Location: On a gentle slope 200yds.(183m) from Mundamia Ck.
Description: 85 stones forming an enclosure. The shape was that of two parallel lines 72ft.(22m) long, one straight and one slightly curved, and one shorter slightly curved line at each end closing off the space. It was 10ft.(3m) wide, except at the ends which widened to12ft.(3.6m) in the south and 18ft.(5.5m) in the north. The long axis lay almost due north-south. Some stones had become embedded and some had been displaced at the ends. The stones were on average 2ft.(0.6m) apart. There were no stones within the enclosure.
 Associated finds: nil
Archaeological context: 250yds.(228.5m) n/w. on the opposite side of the creek was a rockshelter with drawings, and the same distance to the nth. was a scarred tree. 700yds.(640m) nth. near the junction of Mundamia Ck. and Shoalhaven R. was a painted rockshelter.
Remarks: The highest point of the Cambewarra Range (several km away) lay almost due north. An initiation ceremony is known to have been held within 20km of the site, on the north side of the Shoalhaven R, which involved a 2-circle plus pathway bora ground.

111. Jamberoo 52-5-59 Wg 3761 7218 [NPWS]
Location: On fairly level ground, 100yds.(91m) from Minnamurra R.
Description: Stones laid out in a circular pattern about 20ft.(6m) and 6ins.-2ft.(15-61 cm) high. The stones at the northern end were larger.
Associated finds: nil
Archaeological context: nil

112. Tolwong 52-4-4 Wg 3137 6967(?) [NPWS]
Location: Probably elevated above the Shoalhaven R.
Description: No details
Archaeological context: A number of sites have been reported along the river.
Remarks: The grid reference is suspect.

113. Herlihy Property 56-3-4 Wa 6380 6400 [ Sams 1982:37; NPWS]
Location: On a ridge top in eucalypt forest, 1/2 km from perm. water
Description: A circle of stones, perhaps a cairn, and a line of stones running parallel to the ridge in the direction of Shaking Bog n/e.
Associated finds: nil
Archaeological context: There was an open campsite on the property.
Owners have collected riverstones used as anvils, grinders, an edge-ground axe and numerous possible manuports. Dark flints collected in the early days along the river were said to resemble knives. The area is a natural route for people coming into the Tumut valley from the North East, Wee Jaspar and Brindabella areas. The arrangement may have acted as a pointer for the seasonal migrations into and out of the Tumut Valley from the North East[Sams].

114. Narrengullen 57-1-22 C 1752 6695 [NPWS]
Location: On a rock platform on the summit of a spur
Description: 67 heaped mounds built of unsorted local cobbles and covering the rock platform without any clear pattern (except perhaps for one large cairn surrounded by 5 smaller ones). They averaged 1.2m in diam. and 0.5m high.
Associated finds: Some ochre found on the rock surface. Abundant flakes and backed blades also found there and in a scatter behind low scrub near the site.
Archaeological context: A cairn on a lower slope was reported (site no.117) 400m south.
Remarks: Considered to be significant evidence for Aboriginal occupation in the area. Known to local Aborigines although its function is not clear. The lack of any definite pattern was considered to be typical of a tradition that extends down to the South Coast.

115. Coronet Peak - C c.1870 5970 [AHC]
Location: On top of mountain c.1500m a.s.l.
Description: A cairn, and 10m distant a set of parallel lines, about 7m long and 1.6m wide, have been reported. The latter pointed to the cairn. The stones were flat and geometric in shape. Some of the stones showed signs of snow disturbance.
Associated finds: nil
Archaeological context: nil
Remarks: There is doubt over the origin of the site. The recorder wondered if the stones had been transported to the site.

116. Parker's Gap 57-6-15 C 2523 5982 [NPWS]
Location: On a high ridge top in schlerophyll forest, facing north
Description: About 10 horseshoe-shaped and straight stone walls, up to 5m in diam. and 50cm high. They were on a stony and open surface and were made of local cobbles up to 70cm in diam.
Associated finds: nil
Archaeological context: nil
Remarks: According to the recorder, the site lay on a Tindale tribal boundary. However, a military origin has been proposed.
117. Narrengullen 57-1-23 C 1752 6695 [NPWS]
Location: On a slope of a spur
Description: A small cairn of 6 local cobbles, 0.5m x 0.4m x 0.3m high. The top stone was described as wobbly.
Associated finds: nil
Archaeological context: 400m nth. and downslope from site no.114
Remarks: Considered to be similar to a 'curse stone' arrangement at the Biarranga Aboriginal Place. The cairn was not located by the present writer in Sept.1986.

118. Googong Dam 9 57-2-19 C 2279 6214 [Smith 1975:3-4,7; NPWS]
Location: On the slope of a spur, above the Queanbeyan R.
Description: 2 cairns 60cm apart, measuring 1.4m x1.2m x 30-40cms high and 1.1m x1.1m x 30cms high. The stones were old and lichen covered.
Associated finds: nil
Archaeological context: There were European ruins in the vicinity and an Aboriginal campsite nearby.
Remarks: Recorder considered site to be probably Aboriginal. He discounted it being the result of paddock clearing or the cairns being trig.markers. However, he did not dismiss the possibility of their being due to tree root upheaval.

Location: Series of 15 cairns in a slightly curved row. A further 11 rocks or groups of rocks lay in or on the ground along the same alignment. The cairns ranged in height from approx.20-60cm.
Associated finds: nil
Archaeological context: nil

120. Namadgi 57-4-37 C c.1914 5925 [Flood 1980:149ff; NPWS]
Location: On a mountain top at 1700m a.s.l
Description: A series of arrangements on exposed rock surfaces sloping n/w to nth. They included: a set of parallel lines about 1m apart to form a 'corridor' about 20m long; a single line 40m long, orientated n/s, running up 2 huge rock slabs in 2 sections separated by some broken slabs and boulders; a 'corridor' 19m long broadening from 1m wide at the bottom of the slab out into a curved end 4m wide at the top; a further single line about 19m long orientated n/w-s/e, closer to the summit; several ovals and cairns which may be of Aboriginal origin but have suffered from displacement. In Feb.1986 a
circle 2m in diam. consisting of about 7 stones was recorded. In addition, downslope from the main arrs., was another 'corridor' 2-3m wide at the top, associated with a stone cluster 0.75-1m in diam.

Associated finds: nil

Archaeological context: The site was some 8-9 km up Middle Creek valley which runs n/w from the Yankee Hat painted rockshelter. A ceremonial ground has been reported on the creek flats below the mountain.

121. Koombahlah 57-5-9 C 2460 6130 [NPWS]
Location: On the crest of a low spur, 250m west and 30m above the Molonglo R.
Description: An almost circular pile of rocks, 11m in diam. and 25cm max. height. Gaps in the rocks had become filled with soil; half of the rocks were lichen covered. The rocks were sub-angular blocks of quartz, quartzite and some dactite.
Associated finds: nil

Archaeological context: Site was 50m from an artefact scatter including 2 definite flakes of exotic stone. There were also ruins of an European homestead and a scarred tree in the vicinity.

122. Glenferrie 57-5-6 C 2097 5969 [Winston-Gregson 1978:33,38; NPWS]
Location: On a clear grassy s/e face of a rocky hillock
Description: A spiral of small river cobbles covering an area of about 2 sq.m.
Associated finds: nil

Archaeological context: nil

Remarks: The site is not close to water. Winston-Gregson considered it to be the first site Aborigines would have come to on entering the region from the north, as a tribe based in the Canberra/Queanbeyan region would have done.

123. Fishlock Yards 57-4-19 C 1966 6036 [Winston-Gregson 1978:37; NPWS]
Location: On a large rockshelf on a ridge top
Description: Waterworn quartzite(?) cobbles arranged in a half-circle (since pillaged).
Associated finds: nil

Archaeological context: nil

Remarks: 2 boulders formed a shelter at the edge of the rockshelf. There was no water in the vicinity. The recorder considered the site to have been visited en route to or from the Orroral Valley.

Tidbinbilla is known to have been the scene of annual initiation ceremonies.
124. Coolumburra 58-1-75 U 3215 6779 [NPWS]
Location: On a sandstone plateau above a creek
Description: A series of large boulders forming 3 or 4 interlocking
circles; about half the stones were missing leaving marks 2-3ft.
(0.6-0.9m) in diam. behind. Some of the stones had been chocked into
place with smaller ones. The area had been cleared of small stones
and piled to one side to make a heap perhaps 20ft sq.(6m) and
2ft.(0.6m) deep.
Associated finds: nil
Archaeological context: Other sites in the Sassafras locality were
axe-grinding grooves and archaeological deposits.
Remarks: There was a deep rock pool 100m from site.

125 Mt.Sturgiss 58-1-12 U 3205 6500 [Flood 1980:145-6;
NPWS]
Location: On a flat rock slab near the summit of a mt. 793m a.s.1.
Description: Originally two joined ovals outlined in stones, covering
an area of 200m sq.
Associated finds: nil
Archaeological context: no details
Remarks: Outline recognised by J.Sturgiss early in 20th cent. The
site commands extensive views.

126. Mt.Endrick 58-1-11 U 3208 6537 [Towle 1932-33:40f;
NPWS]
Location: On a flat rock surface on a mountain summit
Description: An oval enclosure 55ft.(17m) long and 19ft.(5.8m) wide
with a longitudinal median line of stones. At each end was a low pile
about 1ft.(30.5cm) high capped by a larger stone. The position of the
eastern pile suggested that there was a space left on each side of it
to form entrances to the oval. The space within and around the oval
was cleared of all loose stones. The oval was orientated e/w.
A smaller oval arr. lay 12yds.(11m) up the slope. It had a cluster of
stones at the west.end and a very large stone at the opp.end. It was
not quite symmetrical, 17ft.(5.2m) long and consisted of 60 various
sized stones. A 3rd. arr., hidden by scrub, consisted of several piles
and clusters apparently forming a square with a pile or cluster at
each corner and a 5th pile about 15ft.(4.6m) to the west. The clusters
would have appeared natural if found in isolation. The piles were
5ft.(1.5m) in diam. and 1ft.(30.5cm) high.
Associated finds: nil
Archaeological context: 1/4 mile (0.4km) west were hundreds of
loose stones possibly once arranged in order. Ground axes had been
found at no great distance from the mt. and axe-grinding grooves had
been located in the neighbourhood.
Remarks: Aborigines are known to have once frequented the Endrick
Valley in large numbers. There is some dispute about the origin of a
kangaroo and an emu shaped arrangement not referred to by Towle but
present at the site.

127. Sassafras 58-1-112 U 3270 6662 [NPWS]
Location: On a ridge overlooking a steep gully on the east
Description: 10 cairns in a rough line along the ridge. 4 of the cairns
had collapsed. They measured 0.6m in diam. and 0.8m high.
Associated finds: nil
Archaeological context: An excavated rockshelter existed in the same
locality.

128. Mumbulla Mt. 62-6-10 Bg 7586 9506 [Egloff 1979:29;
NPWS]
Location: On a ridge above Mumbulla Ck.
Description: A small cairn. No other details.
Associated finds: nil
Archaeological context: On top of the mt. was site no.138
Remarks: Site was loosely referred to as a 'marker stone' said to
restrain individuals from proceeding further along the ridge. It is
significant to the elders of the Yuin tribe. However, according to
Egloff, it is difficult to tell if the site is of recent origin, a mining
claim or a boundary marker.

129. Avonlea 62-1-50 Bg 6558 0133 [NPWS incl.file F116 Pt.1]
Location: On a small knoll overlooking a tributary of Goorudee R.
Description: 3 rings made of granite blocks (each 30cm sq), each
consisting of about 7 stones and with one stone in the centre of each
ring. The largest ring was approx.30ft.(9m) in diam. The other rings
were about 15ft.(4.5m) in diam.
Associated finds: Stone artefacts were found including grinding
stones, silcrete flakes and pebble implements.
Archaeological context: Other sites 1) On a watercourse approx
1/2km upstream was an artefact scatter with an edge-ground axe;
and 2) approx. 1km west grinding stones were found in what had been
a natural clearing.
Remarks: Site was found and destroyed during clearing of a heavily
timbered area. Artefacts were collected at that time and the
description is that given by the property owner. According to a
previous owner there were possum trees and a possible scarred tree
there.

130. Black Flat Ck. 62-4-73 Bg 6660 9225 [Lewis 1974:2,
31-32a; NPWS]
Location: About 400m uphill from the Snowy R., on the sth.bank
Description: 5 mounds. Two of them were 30cm high. One was circular in plan (1m in diam), the rest were oblong (0.8m-2.2m long and 0.4m-1.3m wide). In the top of one of the latter was a slight hollow. According to the plan, they were arranged in a rough crescent.
Associated finds: nil
Archaeological context: There were scarred trees, a campsite and European ruins in the vicinity.

131. Cathcart 62-5-5 Bg 7150 9220 [NPWS]
Location: On a hill
Description: Stone arrangement. No other details.

132. Lower Snowy R.67 62-4-127 Bg 6367 9319 [NPWS]
Location: On a hill-slope above a creek, near a granite outcrop
Description: Mound which had partly collapsed. Basal diam. was 1.29m, at the top 30cm and height was 50cm.
Associated finds: Unifacial pebble chopper found behind a granite outcrop
Archaeological context: There was a high density of campsites along the L.Snowy R. in the vicinity of the site. A scarred tree and the ruins of an old stockyard were also mentioned.
Remarks: Recorder was unsure about an Aboriginal origin of the site.

133. Rodney 62-4-52 Bg 6748 9187 [Lewis 1976:4-5; NPWS]
Location: On a large cleared area on sth.bank of Delegate R.
Description: One of two arrangements (the other was considered to be European). It was made of heavy rocks placed on top of and beside natural outcropping boulders.
Associated finds: Artefacts found included a core, 1 blade flake, 1 pebble chopper fragment, 75 waste flakes, 2 broken anvils and 6 river pebble fragments.
Archaeological context: The other arrangement was L-shaped.
Remarks: Recorder wondered about the origin of the site and considered the possibility of it being a survey marker. It is classed by NPWS as an open campsite.

134. Lower Snowy R.54 62-4-114 [NPWS]
Location: On the side of a rocky ridge about 2/3 down the slope
Description: A cairn of small granite rocks. Diam. at base was 1m, at top was 0.7m and the height was 0.7m-0.9m. Despite the abundance of rocks on the hill-side, the site was definitely not natural. Rocks at the base had lichen cover.
Associated finds: nil
Archaeological context: There were surface campsites and another stone arrangement about 3km upstream.
Remarks: Recorder admitted that the origin of the site was problematic.

135. Dalgety 62-4-34 Bg 6665 9564 [Lewis 1976:5,116-7; NPWS]
Location: On the nth. bank of the Snowy R. alongside a creek
Description: A 'man-made' wall on top of and between large natural boulders forming a bar or reef running almost e/w. At the western end, nearest the creek, was a natural hole or cave formed by large rocks leaning together. This was large enough for a man to climb into. The man-made section covered a distance of about 50m.
Associated finds: A small number of artefacts near the arrangement.
Archaeological context: There was a campsite about 100m upstream, and a very large campsite lay in the vicinity.
Remarks: The recorder thought that the site was probably Aboriginal. There was no obvious evidence for European origin and local people did not know of its use or origin.

136. Sawpit Creek 62-1-15 Bg 6395 9759 [NPWS]
Location: Presumably near the creek
Description: Mound with a circle of stones. No other details.
Associated finds: nil
Archaeological context: no details
Remarks: Site was initially thought to mark a grave, but it is now considered to be a totemic site.

137. Sawpit Creek 62-1-1 Bg 6411 9759 [NPWS]
Location: Presumably near the creek
Description: Stone arrangement. No other details.
Associated finds: nil
Archaeological context: no details
Remarks: It is recorded as a burial site.

138. Mumbulla Mt. 62-6-7 Bg 7562 9510 [NPWS]
Location: On a spur approx.1.2km from the TV relay stn.on mt.top
Description: 4 rock boulders where two of the smaller rocks were placed on top of the other ones.
Associated finds: nil
Archaeological context: Site 128 lay on the lower reaches of the mt.
Remarks: The site was important in the initiation ceremonies of the
Yuin people and is still considered to be sacred.

139. Wallaga Lake 62-7-32 Bg 2362 9729 or 2360 9725 [NPWS]
Location: No details
Description: Small stone arrangement made up of only 5 stones to resemble a cross.
Associated finds: nil
Archaeological context: There were a number of sites in the Wallaga Lakes area: 2 sacred trees, the Mission Cemetery, Mt. Dromedary and Little Dromedary.
Remarks: Apart from a suggestion that the site was a land marker its purpose was unknown to local Aborigines. It lay 100m east of a house.

140. Watergums Ck. 63-3-26 M 2877 3936 [NPWS]
Location: On a large open granite rockshelf on a narrow ridge top
Description: 33 rocks were arranged in a circle with 4 radiating arms which were within 1 deg. of being at right angles to each other. The arms were not aligned with cardinal points. In the centre was an upright stone 48cm high. This stone was roughly cylindrical. Beside it was a broad flat stone about 30cm x 20cm lying flat. Another small stone was also in the centre. The whole arr. covered an area 2.9m x 2.35m.
Associated finds: nil
Archaeological context: nil
Remarks: There is some doubt about the origin of the site. The recorder now considers it to be a possible ground control point for aerial photography. However, this has not been confirmed.

141. Mowarry Pt. 63-3-1 M 3008 4193 [NPWS]
Location: On a hill-slope 200yds.(183m) from a ck. leading into a cove
Description: A line of waterworn pebbles about 50m long, bearing approx. N125 deg. The pebbles were of medium size, about 1ft.(30.5cm) across. They were placed about 1ft.6ins.(45cm) apart.
Associated finds: nil
Archaeological context: nil

142. Sentry Box - C 6712 0350 [NPWS file F/716 part 1]
Location: On a large open flat granite shelf on a mountain summit about 1600m a.s.l.
Description: An erratic wavy line of stones around part of the shelf, delineating an irregular area that was largely free of stones. Differential weathering of the rock surface and the area beneath the stones suggested that the stones had been there for some time. About
20m from the arr. was a pair of short (1m long) walls that formed a corner and made of larger stones than the other. These were found to be surveyors markers of the ACT/NSW boundary.

An alternative report by a bushwalker described a large v-shaped arr. formation; one arm was 60m long, the other about 30m long.

Associated finds: nil
Archaeological context: nil
Remarks: Aboriginal origin of some of the arrangements is still to be confirmed.

143. Drift Hill 61-6-10 T 6320 4925 [NPWS]
Location: 30 chains (603m) from Thredbo R.
Description: Mounds made of boulders, the interstices of which were neatly filled with quartz and other small stones.
Associated finds: nil
Archaeological context: 40 chains (804m) from another [unspecified] site.
Remarks: Recorded as graves

144. Alpineway 61-3-13 T 6350 4980 [NPWS]
Location: Behind a high boulder on a fairly steep slope
Description: 2 arrangements of stone in a 'V' formation, the apex of which faced south. Each leg of the 'V' was about 7ft.(2.1m) long, and each [arm or arrangement?] was 6ft.(1.8m) wide.
Associated finds: nil
Archaeological context: nil
Remarks: According to local tradition this is a burial site marking the result of a fight between the Ngarigo and Wolgal tribes.
APPENDIX B : TABLES
### TABLE A

#### 1. NUMBER OF SITES ACCORDING TO REGION

<table>
<thead>
<tr>
<th>Region</th>
<th>Sites</th>
<th>% of sample</th>
<th>Approx. area sampled</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE</td>
<td>27</td>
<td>18.7</td>
<td>5,500 sqkm</td>
</tr>
<tr>
<td>WNSW</td>
<td>36</td>
<td>25.0</td>
<td>6,500 sqkm</td>
</tr>
<tr>
<td>CNSW</td>
<td>44</td>
<td>30.6</td>
<td>9,600 sqkm</td>
</tr>
<tr>
<td>SNSW</td>
<td>37</td>
<td>25.7</td>
<td>7,200 sqkm</td>
</tr>
</tbody>
</table>

n= 144 100.0 28,500 sqkm

#### 2. NUMBER OF SITES ACCORDING TO TOPOGRAPHICAL LOCATION

<table>
<thead>
<tr>
<th>Region</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE</td>
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<td>6</td>
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<td>2</td>
<td>5</td>
<td>2</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>WNSW</td>
<td>13</td>
<td>10</td>
<td>2</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>36</td>
</tr>
<tr>
<td>CNSW</td>
<td>11</td>
<td>2</td>
<td>12</td>
<td>3</td>
<td>3</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td>SNSW</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>-</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>37</td>
</tr>
</tbody>
</table>

n= 33 15 25 25 3 19 3 12 9 144

**KEY**

1. flat (creek flat, claypan)
2. slight rise, knoll
3. hillslope
4. ridge crest
5. saddle
6. hill summit
7. plateau
8. mountain summit
9. undescribed
# TABLE 8

## SITES WITH HEAPS ACCORDING TO TOPOGRAPHICAL LOCATION

<table>
<thead>
<tr>
<th>Region</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>n=</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2</td>
<td>4</td>
<td>-</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>WNSW</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>CNSW</td>
<td>7</td>
<td>-</td>
<td>9</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>27</td>
</tr>
<tr>
<td>SNSW</td>
<td>-</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>16</td>
</tr>
</tbody>
</table>

n= 18  7  14  16  2  11  2  7  3  80

## KEY

1. flat (creek flat, claypan)
2. slight rise, knoll
3. hillslope
4. ridge crest
5. saddle
6. hill summit
7. plateau
8. mountain summit
9. undescribed
### Table C

**MORPHOLOGY OF HEAPS ACCORDING TO REGION**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>NE (%)</th>
<th>WNSW (%)</th>
<th>CNSW (%)</th>
<th>SNSW (%)</th>
<th>n=</th>
</tr>
</thead>
<tbody>
<tr>
<td>circular</td>
<td>5 (14)</td>
<td>12 (33.3)</td>
<td>13 (36.1)</td>
<td>6 (16.6)</td>
<td>36</td>
</tr>
<tr>
<td>oval</td>
<td>7 (50)</td>
<td>4 (28.6)</td>
<td>3 (21.4)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>elong.oval</td>
<td>4 (80)</td>
<td>1 (20)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>oblong</td>
<td>1 (12.5)</td>
<td>2 (25)</td>
<td>2 (25)</td>
<td>3 (37.5)</td>
<td>8</td>
</tr>
<tr>
<td>triangular</td>
<td>1 (100)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>irregular</td>
<td>5 (23.8)</td>
<td>7 (33.3)</td>
<td>4 (19.1)</td>
<td>5 (23.8)</td>
<td>21</td>
</tr>
<tr>
<td>undescribed</td>
<td>5 (21.7)</td>
<td>1 (4.4)</td>
<td>12 (52.2)</td>
<td>5 (21.7)</td>
<td>23</td>
</tr>
</tbody>
</table>

**NOTE**

(%) percentage of the respective morphological type for all regions included in this survey.
### TABLE D

#### 1. SITES WITH CLOSED ALIGNMENTS ACCORDING TO REGION

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of sites</th>
<th>% of sites with open &amp; closed align. in region</th>
<th>% of total sites in region</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE</td>
<td>4</td>
<td>44.4</td>
<td>14.8</td>
</tr>
<tr>
<td>WNSW</td>
<td>8</td>
<td>72.7</td>
<td>22.2</td>
</tr>
<tr>
<td>CNSW</td>
<td>11</td>
<td>78.6</td>
<td>25.0</td>
</tr>
<tr>
<td>SNSW</td>
<td>8</td>
<td>53.3</td>
<td>21.6</td>
</tr>
</tbody>
</table>

#### 2. MORPHOLOGY OF CLOSED ALIGNMENTS ACCORDING TO REGION

<table>
<thead>
<tr>
<th>REGION</th>
<th>CIRCLE</th>
<th>OVAL</th>
<th>CRESCENT</th>
<th>IRREGULAR</th>
<th>JOINED OVAL/ OBLONG SQUARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WNSW</td>
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<td>2</td>
<td>2 1</td>
</tr>
<tr>
<td>CNSW</td>
<td>2</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SNSW</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

n= 13 13 2 3 2 2 1
### TABLE E

1. **ALL SITE TYPES ACCORDING TO REGION**

<table>
<thead>
<tr>
<th>SITE TYPE</th>
<th>NE n=27 (%)</th>
<th>WNSW n=35 (%)</th>
<th>CNSW n=44 (%)</th>
<th>SNSW n=37 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>single</td>
<td>10 (37)</td>
<td>11 (30.6)</td>
<td>18 (40.9)</td>
<td>13 (35.1)</td>
</tr>
<tr>
<td>one class</td>
<td>9 (33.3)</td>
<td>14 (38.9)</td>
<td>20 (45.5)</td>
<td>14 (37.8)</td>
</tr>
<tr>
<td>composite</td>
<td>8 (29.7)</td>
<td>8 (22.2)</td>
<td>6 (13.6)</td>
<td>7 (18.9)</td>
</tr>
<tr>
<td>undescribed</td>
<td>-</td>
<td>-</td>
<td>3 (8.3)</td>
<td>3 (8.2)</td>
</tr>
</tbody>
</table>

% denotes percentage of all sites in each respective region.

2. **PERCENTAGE OF SITE TYPES ACCORDING TO TOPOGRAPHICAL LOCATION**

<table>
<thead>
<tr>
<th>SITE TYPE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>single</td>
<td>33</td>
<td>4</td>
<td>21</td>
<td>11</td>
<td>4</td>
<td>15</td>
<td>-</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>one class</td>
<td>23</td>
<td>5</td>
<td>17</td>
<td>25</td>
<td>2</td>
<td>16</td>
<td>3</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>composite</td>
<td>17</td>
<td>14</td>
<td>10</td>
<td>24</td>
<td>-</td>
<td>4</td>
<td>3</td>
<td>21</td>
<td>7</td>
</tr>
</tbody>
</table>

**KEY**

1 flat (creek flat, claypan)  
2 slight rise, knoll  
3 hillslope  
4 ridge crest  
5 saddle  
6 hill summit  
7 plateau  
8 mountain summit  
9 undescribed

Note: These figures denote percentages of sites within each respective site type and are rounded to the nearest whole number.
**TABLE F**

1. SINGLE SITE TYPES ACCORDING TO CLASS OF ARRANGEMENT

<table>
<thead>
<tr>
<th>Class</th>
<th>No. of sites</th>
<th>% of sites with that class</th>
<th>% of all sites in sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heap</td>
<td>7</td>
<td>33.7</td>
<td>18.7</td>
</tr>
<tr>
<td>Heaped Arr.</td>
<td>5</td>
<td>38.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Upright St.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Placed St.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alignment</td>
<td>14</td>
<td>28</td>
<td>9.7</td>
</tr>
<tr>
<td>Cluster</td>
<td>6</td>
<td>37.5</td>
<td>4.2</td>
</tr>
</tbody>
</table>

2. SINGLE SITE TYPES ACCORDING TO CLASS AND REGION

<table>
<thead>
<tr>
<th>Class</th>
<th>NE (%)</th>
<th>WNSW (%)</th>
<th>CNSW (%)</th>
<th>SNSW (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heap n=27</td>
<td>4 (14.8)</td>
<td>10 (37)</td>
<td>8 (29.6)</td>
<td>5 (18.6)</td>
</tr>
<tr>
<td>Heaped Arr. n=5</td>
<td>3 (60)</td>
<td>-</td>
<td>1 (20)</td>
<td>1 (20)</td>
</tr>
<tr>
<td>Upright St. n=0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Placed St. n=0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alignment n=14</td>
<td>3 (21.4)</td>
<td>-</td>
<td>5 (35.7)</td>
<td>6 (42.9)</td>
</tr>
<tr>
<td>Cluster n=6</td>
<td>-</td>
<td>1 (16.7)</td>
<td>4 (66.6)</td>
<td>1 (16.7)</td>
</tr>
</tbody>
</table>

**NOTE**

Numbers in brackets denote percentages of site types within each class.
### TABLE G

**SINGLE SITE TYPES ACCORDING TO CLASS, MORPHOLOGY AND SITE**

<table>
<thead>
<tr>
<th>Class</th>
<th>Morphology</th>
<th>Site Number (see Appendix A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heap</td>
<td>circular</td>
<td>26, 27, 28, 45, 50, 58, 59, 67, 93, 102, 118</td>
</tr>
<tr>
<td>Heap</td>
<td>irregular</td>
<td>31, 55, 56, 94, 132, 134</td>
</tr>
<tr>
<td>Heap</td>
<td>oblong</td>
<td>25, 83</td>
</tr>
<tr>
<td>Heap</td>
<td>oval</td>
<td>37</td>
</tr>
<tr>
<td>Heap</td>
<td>undescribed</td>
<td>7, 8, 92, 96, 107, 117, 128</td>
</tr>
<tr>
<td>Heaped Arr.</td>
<td>U shape</td>
<td>4</td>
</tr>
<tr>
<td>Heaped Arr.</td>
<td>linear</td>
<td>6, 135</td>
</tr>
<tr>
<td>Heaped Arr.</td>
<td>circular</td>
<td>40, 100</td>
</tr>
<tr>
<td>Cluster</td>
<td>irregular</td>
<td>57, 121</td>
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<tr>
<td>Cluster</td>
<td>oval</td>
<td>89</td>
</tr>
<tr>
<td>Cluster</td>
<td>undescribed</td>
<td>97, 98, 101</td>
</tr>
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<td>Alignment</td>
<td>line</td>
<td>66, 141</td>
</tr>
<tr>
<td>Alignment</td>
<td>joined lines</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>(Y shape)</td>
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</tr>
<tr>
<td>Alignment</td>
<td>joined lines</td>
<td>139</td>
</tr>
<tr>
<td></td>
<td>(+ shape)</td>
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</tr>
<tr>
<td>Alignment</td>
<td>semicircle</td>
<td>9, 123</td>
</tr>
<tr>
<td>Alignment</td>
<td>spiral</td>
<td>122</td>
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<tr>
<td>Alignment</td>
<td>oval</td>
<td>76, 86, 91</td>
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<tr>
<td>Alignment</td>
<td>crescent</td>
<td>110</td>
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<tr>
<td>Alignment</td>
<td>circle</td>
<td>10, 34, 111</td>
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</tbody>
</table>
### TABLE H

1. **ONE CLASS SITE TYPES ACCORDING TO CLASS**

<table>
<thead>
<tr>
<th>Class</th>
<th>No. of sites</th>
<th>% of sites with that class</th>
<th>% of all sites in sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n= 57</td>
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<td></td>
</tr>
<tr>
<td>Heap</td>
<td>33</td>
<td>40.7</td>
<td>22.9</td>
</tr>
<tr>
<td>Heaped Arr.</td>
<td>3</td>
<td>25.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Upright St.</td>
<td>2</td>
<td>16.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Placed St.</td>
<td>1</td>
<td>25.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Alignment</td>
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<td>32.6</td>
<td>11.1</td>
</tr>
<tr>
<td>Cluster</td>
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<td>12.5</td>
<td>1.4</td>
</tr>
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</table>

2. **ONE CLASS SITE TYPES ACCORDING TO CLASS AND REGION**

<table>
<thead>
<tr>
<th>Class</th>
<th>NE (%)</th>
<th>WNSW (%)</th>
<th>CNSW (%)</th>
<th>SNSW (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heap n=33</td>
<td>5 (15.2)</td>
<td>7 (21.2)</td>
<td>14 (42.4)</td>
<td>7 (21.2)</td>
</tr>
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<td></td>
<td>pair</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>line</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>semi circle</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>group</td>
<td>3</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>combination of the above</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Heaped Arr. n=3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3 (100)</td>
</tr>
<tr>
<td></td>
<td>pair</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>group</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Upright St. n=2</td>
<td>2 (100)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>line</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Placed St. n=1</td>
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<td>-</td>
<td>-</td>
<td>1 (100)</td>
</tr>
<tr>
<td></td>
<td>group</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Alignment n=16</td>
<td>1 (6.3)</td>
<td>6 (37.5)</td>
<td>6 (37.5)</td>
<td>3 (18.7)</td>
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<td>closed alignment</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>combination</td>
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<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>undescribed</td>
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<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Class</td>
<td>NE (%)</td>
<td>WNSW (%)</td>
<td>CNSW (%)</td>
<td>SNSW (%)</td>
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<td>------------</td>
<td>--------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Cluster n=2</td>
<td>1 (50)</td>
<td>1 (50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>pair</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>group</td>
<td>-</td>
<td>1</td>
<td>-</td>
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</table>

**NOTE**

Figures in brackets denote percentage of that site type.
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<th>Classes</th>
<th>No. of sites and percentage of site type in each region</th>
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</thead>
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<td></td>
<td>NE</td>
</tr>
<tr>
<td>Heap &amp; upright st.</td>
<td>2</td>
</tr>
<tr>
<td>Heap &amp; alignment</td>
<td>1</td>
</tr>
<tr>
<td>Heap &amp; cluster</td>
<td>-</td>
</tr>
<tr>
<td>Heap arr.&amp; align.</td>
<td>-</td>
</tr>
<tr>
<td>Upright st.&amp; clust.</td>
<td>-</td>
</tr>
<tr>
<td>Upright st.&amp; pl.st. 1</td>
<td>-</td>
</tr>
<tr>
<td>Upright st.&amp; align. 1</td>
<td>-</td>
</tr>
<tr>
<td>Cluster &amp; align.</td>
<td>-</td>
</tr>
<tr>
<td>Heap &amp; heap arr.&amp; upright st.</td>
<td>-</td>
</tr>
<tr>
<td>Heap &amp; heap arr.&amp; alignment</td>
<td>2</td>
</tr>
<tr>
<td>Heap &amp; cluster &amp; alignment</td>
<td>-</td>
</tr>
<tr>
<td>Upright st.&amp; pl.st. &amp; alignment</td>
<td>-</td>
</tr>
<tr>
<td>Heap arr. &amp; upright st. &amp; pl.st.&amp; align. 1</td>
<td>-</td>
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**NOTE**

Figures in brackets denote percentages.
### TABLE J

**SITE TYPES ACCORDING TO REGION - WNSW**

**SINGLE SITE TYPES**

<table>
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<th>Class</th>
<th>Morphology</th>
<th>Site numbers (see Appendix A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heap</td>
<td>circular</td>
<td>26, 27, 28, 45, 50, 58, 59</td>
</tr>
<tr>
<td>Heap</td>
<td>irregular</td>
<td>55, 56</td>
</tr>
<tr>
<td>Heap</td>
<td>oblong</td>
<td>28</td>
</tr>
<tr>
<td>Cluster</td>
<td>irregular</td>
<td>57</td>
</tr>
<tr>
<td>Undescribed</td>
<td></td>
<td>41, 42, 54</td>
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**ONE CLASS SITE TYPES**

| Heap     | pair        | 48, 49, 62                     |
| Heap     | line        | 17                            |
| Heap     | group       | 51                            |
| Heap     | combination of groups | 52, 63 |
| Alignment | miscell.enclos. | 16                  |
|          | circles + lines | 21, 46, 61                   |
|          | circles      | 22                            |
|          | undescribed  | 23                            |
| Cluster  | group       | 53                            |

**COMPOSITE SITE TYPES**

| Group of heaps + open + closed alignments | 19, 20 |
| Pair of heaps + open aligns. | 43, 47 |
| Line of heaps + oval of upright st. | 60 |
| Pair of upright st. + single clust. | 44 |
| Single cluster + open + closed alignments. | 18 |
| Heaps + heaped arrs. + single upright st. | 24 |
### TABLE K

SITE TYPES ACCORDING TO REGION - CNSW

#### SINGLE SITE TYPES

<table>
<thead>
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<tr>
<td>Heap</td>
<td>circular</td>
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<td>Heap</td>
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<td>Heap</td>
<td>irregular</td>
<td>94</td>
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<td>Heap</td>
<td>undescribed</td>
<td>92, 96, 107</td>
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<td>Heaped arr.</td>
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<td>Cluster</td>
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<tr>
<td>Cluster</td>
<td>undescribed</td>
<td>97, 98, 101</td>
</tr>
<tr>
<td>Alignment</td>
<td>line</td>
<td>66</td>
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<td>Alignment</td>
<td>oval</td>
<td>76, 86, 91</td>
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<td>Alignment</td>
<td>Y shape</td>
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#### ONE CLASS SITE TYPES

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<td>group</td>
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<td>Heap</td>
<td>combination of the above</td>
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<tr>
<td>Alignment</td>
<td>oval + circle</td>
<td>69</td>
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<td>Alignment</td>
<td>radiating lines + enclosures + lines</td>
<td>75</td>
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<td>Alignment</td>
<td>radiating lines</td>
<td>85</td>
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<tr>
<td>Alignment</td>
<td>parallel lines</td>
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<tr>
<td>Alignment</td>
<td>circle + square</td>
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</tr>
<tr>
<td>Alignment</td>
<td>lines + square + oblong</td>
<td>82</td>
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### COMPOSITE SITE TYPES

<table>
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<th>Description</th>
<th>Count</th>
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<tr>
<td>Group of heaps + closed alignments</td>
<td>64</td>
</tr>
<tr>
<td>Group of heaps + open + closed alignments</td>
<td>68</td>
</tr>
<tr>
<td>Single heap + closed alignments</td>
<td>88</td>
</tr>
<tr>
<td>Group of heaps + single upright stone</td>
<td>74</td>
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<tr>
<td>Group of heaps + single heap + group of clusters</td>
<td>65</td>
</tr>
<tr>
<td>Group of clusters + single cluster + open + closed alignments</td>
<td>70</td>
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### TABLE 1

**SITE TYPES ACCORDING TO REGION - NE**

#### SINGLE SITE TYPES

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<th>Class</th>
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<tr>
<td>Heap oval</td>
<td>37</td>
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<tr>
<td>Heap irregular</td>
<td>31</td>
<td></td>
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<tr>
<td>Heap undescribed</td>
<td>7, 8</td>
<td></td>
</tr>
<tr>
<td>Heaped arr. U shape</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Heaped arr. linear</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Heaped arr. circular</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Alignment semicircle</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Alignment circle</td>
<td>10, 34</td>
<td></td>
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</tbody>
</table>

#### ONE CLASS SITE TYPES

| Heap semicircle | 35            |
| Heap group      | 12, 15, 30    |
| Heap combination| 14            |
| Upright stone line | 1, 3        |
| Alignment semicircle + lines | 38          |
| Cluster pair    | 2             |

#### COMPOSITE SITE TYPES

- Single heap + closed alignments 39
- Group of heaps + single upright st. 11
- Single heap + 3 upright stones 36
- Group of upright stones + placed stones 33
- Pair of upright stones + open align. 5
- Group of heaps + pair of heaped arr. + open alignment 13
TABLE L continued

Group of heaps + single heaped arr.  
+ open alignments 29
Upright stones + placed stones +
heaped arrs. + open + closed aligns.32
**TABLE M**

SITE TYPES ACCORDING TO REGION - SNSW

**SINGLE SITE TYPES**

<table>
<thead>
<tr>
<th>Class</th>
<th>Morphology</th>
<th>Site numbers (see Appendix A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heap</td>
<td>circular</td>
<td>118</td>
</tr>
<tr>
<td>Heap</td>
<td>irregular</td>
<td>132, 134</td>
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<tr>
<td>Heap</td>
<td>undescribed</td>
<td>117, 128</td>
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<tr>
<td>Heaped arr.</td>
<td>linear</td>
<td>135</td>
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<td>Cluster</td>
<td>irregular</td>
<td>121</td>
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<td>Alignment</td>
<td>line</td>
<td>141</td>
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<tr>
<td>Alignment</td>
<td>cross</td>
<td>139</td>
</tr>
<tr>
<td>Alignment</td>
<td>semicircle</td>
<td>123</td>
</tr>
<tr>
<td>Alignment</td>
<td>spiral</td>
<td>122</td>
</tr>
<tr>
<td>Alignment</td>
<td>circle</td>
<td>111</td>
</tr>
<tr>
<td>Alignment</td>
<td>crescent</td>
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**ONE CLASS SITE TYPES**

<table>
<thead>
<tr>
<th>Class</th>
<th>Morphology</th>
<th>Site numbers (see Appendix A)</th>
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</thead>
<tbody>
<tr>
<td>Heap</td>
<td>line</td>
<td>119, 127</td>
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<tr>
<td>Heap</td>
<td>group</td>
<td>108, 109, 114, 130, 143</td>
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<td>Heaped arr.</td>
<td>pair</td>
<td>133, 144,</td>
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<tr>
<td>Heaped arr.</td>
<td>group</td>
<td>116</td>
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<tr>
<td>Placed Stone</td>
<td>group</td>
<td>138</td>
</tr>
<tr>
<td>Alignment</td>
<td>joined circles</td>
<td>124</td>
</tr>
<tr>
<td>Alignment</td>
<td>joined ovals</td>
<td>125</td>
</tr>
<tr>
<td>Alignment</td>
<td>3 circles</td>
<td>129</td>
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</table>

**COMPOSITE SITE TYPES**

<table>
<thead>
<tr>
<th>Class</th>
<th>Site numbers (see Appendix A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single heap + open alignment</td>
<td>115</td>
</tr>
<tr>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Single heap + single cluster</td>
<td>136</td>
</tr>
<tr>
<td>Pair of heaped arrs.+ single open</td>
<td>142</td>
</tr>
<tr>
<td>Single cluster + single open align.</td>
<td>113</td>
</tr>
<tr>
<td>Upright stone + placed stones + open + closed alignments</td>
<td>140</td>
</tr>
<tr>
<td>Group of heaps + pair of clusters + open + closed alignments</td>
<td>120</td>
</tr>
<tr>
<td>Heaps + open + closed alignments</td>
<td>126</td>
</tr>
<tr>
<td>Undescribed</td>
<td>112, 131, 137</td>
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APPENDIX C: FIGURES
FIGURE 1  Map of New South Wales showing sampled regions according to map-sheet
Discrete Stone Arrangement

- Mode of construction
  - Site-type
  - Class

  **addition of stone**
  - heaped
    - heap heaped arrangement
  - placed upright
    - upright stone
  - placed horizontal
    - placed stone
    - alignment cluster

  **removal of stone**
  - cleared
  - dug out
    - heaped arrangement
    - pit channel

**Stone Arrangement Site**

- single
- one class
- composite
FIGURE 3  Relative frequencies of arrangement classes in total sample and in each region.
n=51 sites with heaps representing 64% of all sites with heaps

1. Size of heaps according to greatest horizontal measurement. Based on average size of heaps at 51 sites for which dimensions are given.

n=41 sites with heaps representing 51% of all sites with heaps

2. Size of heaps according to height. Based on average height at 41 sites for which dimensions are given.
1. Size of heaps according to region based on greatest horizontal measurement. The average size of heaps at each site was taken.

2. Height of heaps according to region based on average height of all heaps at each site. 

FIGURE 5
FIGURE 6  Size of most common enclosures according to morphology based on greatest diameter of each enclosure measured. It should be noted that since few enclosures in the sample are quantified or described, the above graphs are indicative of the broad range of sizes only.
Size of the most common enclosures (circle and oval) according to region based on greatest diameter of each enclosure measured. It should be noted that the numbers refer to actual enclosures and not sites, and the sizes are indicative of the broad range of possible sizes only.
FIGURE 8  Site types according to region
FIGURE 9 Site types according to region
APPENDIX D: PLATES
PLATE 1  Talu site for increase of a fruit, kundl, Forrest River District, north-western Australia (Elkin 1933:Pl.V)
PLATE 2  Totemic stones of the Kantyu Tribe - "Heart and liver" of kangaroo-totem centre of kangaroo sub-totem near Emily Creek, Cape York Peninsula (McConnel 1932:Pl.IA)
PLATE 3  A: Excavations across the centre of Ring G, Sunbury, Vic, showing central cairn
B: Ring G showing areas excavated, the stone cairn and the distribution of artefacts (Frankel 1982:94)
PLATE 4 Graves at Poolamacca, western New South Wales
A:Photo taken in 1945
B:Photo taken in 1908 (Black 1950:Pl.188)
PLATE 5  Pit located on a pebble beach, Bay of Fires, Tasmania (Cane 1980:Pl.2A)
PLATE 6  A: Arrangement of stones at a talu site - Ungarinyin tribe, north-western Australia (Elkin 1933: Pl.IVB)
B: Tree burial in the Ungarinyin tribe (Elkin 1933: Pl.IIB)
PLATE 7  Totemic stones of the Kantyu Tribe. Line of stones at kangaroo totem centre near Emily Creek, Cape York Peninsula (McConnel 1932:Pl.II)
PLATE 8  A: Pindera Downs Ceremonial Ground (Black 1950:Pl.181)
B: Pindera Downs. Oblong yard with small circle at right (Black 1950:Pl.181A)
PLATE 9  A: Oblong heap at Koonawarra, NSW (Black 1950:Pl.187)
B: Mt.Arrowsmith ceremonial ground (Black 1950:Pl.185)
PLATE 10 The Aboriginal giantess' grave, Terragon in 1885.
Sketch by K.W. Marks (Steele 1983: Fig 29)
PLATE 11 A: Barren Mountain stone arrangements dominated by the standing stone (no.1) on the highest part of the site
B: Serpentine stone arrangements. Site 1. General view of the north-western part of the site (McBryde 1974:Pls.13,12)
PLATE 12  A: The largest of the stone heaps at Black Mountain
B: Northern group of heaps, Copmanhurst Site 1
(McBryde 1974:Pls.11, 10)
PLATE 13 A: Plan of stone arrangements at Blaxland's Flat, Clarence Valley

B: Plan of stone arrangements at Black Mountain, near Guyra
(McBryde 1974: Figs. 3, 6)
PLATE 14 Stone arrangements on Mt.Endrick, NSW

A: View of Budawang Ranges from Mt.Endrick. Pidgeon House Mt. is prominent on the right of photograph
B: Bisected oval arrangement

Photographs courtesy of Warren Hudson, ANU
PLATE 15  Stone arrangements on Mount Namadgi, NSW
A: View of long alignment. "Corridor"-like alignments lie on separate rock slabs on either side of the main line
B: Close-up of upper portion of the long alignment
PLATE 16  A: Close-up of long line of stones showing relationship to one of the "corridor" alignments (in centre of photograph)

B: A third "corridor" alignment found in February 1986, downslope from the other arrangements. A cluster lies in right foreground
"Corridor" alignment on Mt. Namadgi, showing widening at the far end probably due to snow creep
PLATE 18  Stone arrangements on Mount Namadgi, NSW
A: Circular alignment showing disturbance
B: View to the south-west down Middle Creek Valley to the valley of the Gudgenby River in the distance (yellow patch). Triangular peak to the right is Yankee Hat, where an art shelter is located.
PLATE 19 Panoramic view of the Budawang Ranges, NSW. Photo taken from beside the stone arrangement on Mount Endrick.

Courtesy of Warren Hudson
APPENDIX E: MAPS
MAP 2  CNSW (Central New South Wales): Location and types of stone arrangement sites
MAP 2  CNSW (Central New South Wales): Location and types of stone arrangement sites
MAP 4

SNSW (South-eastern New South Wales): Location and types of stone arrangement sites

KEY:

- single alignment
- single cluster
- single heap
- single heaped art.
- heap site
- heaped art. site
- alignment site
- placed stone site
- composite site
- in determinate
- place name
- - - - - contour in metres

Source: Reader's Digest Atlas of Australia, 1977
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Creamer, H.
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<td>1933</td>
<td>'Totemism in North-Western Australia', <em>Oceania</em>, Vol.3, No.4: 435-481.</td>
<td>Ferguson, W.C.</td>
</tr>
<tr>
<td>1981</td>
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<td>Fleming, A.</td>
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<tr>
<td>1976</td>
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