

## Australian Archaeology



Archived at Flinders University: [dspace.flinders.edu.au](https://dspace.flinders.edu.au)

### Full Citation Details:

Vanderwal, R.L. 1978. Adaptive technology in Southwest Tasmania. 'Australian Archaeology', no.8, 107-127.

# ADAPTIVE TECHNOLOGY IN SOUTHWEST TASMANIA<sup>1</sup>

*R.L. Vanderwal*

## Introduction

Louisa Bay, in southwest Tasmania, was archaeologically investigated during two field seasons, eight weeks in 1975 and four weeks in 1976. A total of six sites were sampled. Sites on Maatsuyker Island, to the south, were investigated over two separate two week periods in 1974 and 1976. This article is intended as a preliminary statement on the Louisa Bay research. As such I include brief site descriptions accompanied by detailed drawings of stratigraphic sections, radiocarbon dates, and how these may be interpreted, both locally and in the wider Tasmanian context. I suggest that there was a late adaptation to the more than ordinarily harsh southwest Tasmanian environment. I offer a model which is not inconsistent with other data, but which challenges current interpretations.

## The physical setting

Tasmania's southwest coast is first to experience 'the roaring forties', winds whose origins are more often than not Antarctic. Hiatt's (1968:120) description of the southwest as '...cold, wet, sunless and generally climatically unpleasant' is apt. It has a wild and desolate landscape, and a rugged coastline shaped in large part by wind and surf. Coastal Tasmanian Aborigines depended very heavily upon the resources of the sea. Rocky platforms, sandy shoals, deep gulches, grassy bottoms, kelp beds, lagoons, estuarine environments and submarine boulder galleries are responsible for the rich variety of such resources in the area. Swamps, scrublands, creeks and sedgelands are the land components of the southwest Tasmanian ecological system. The sedgelands are themselves said to be Aboriginal artefacts, a result of constant firing (Jackson 1965:30; Davies 1975:23; Jones 1966:1, 1968) whose net result is an increased habitat range for sedgeland dwellers. Most of these habitats are, however, widely dispersed in southwest Tasmania, with specific exploitation - as seen in archaeological sites - of mussels and oysters in Port Davey (P. Simms, pers. comm.), generalised shellfish at Stephens Bay, very little between there and Southwest Cape (D. King, pers. comm.) a small cave occupation at New Harbour (J. Stockton, pers. comm.) and sparse occupation on the eastern side of Cox Bight (D. King, pers. comm.). Louisa Bay, at the eastern edge of the area seen in Fig.1 and lying directly under the western slopes of the 1000 m high Ironbound Mountains, appears to represent a microcosm of available resources in greater southwest Tasmania. It is therefore not surprising to see ample evidence of Aboriginal occupation (Fig.2) along the shores of this 2.5 km deep by 4 km wide crescentic bay. Louisa Island, connected to the mainland by a tombola, lies at the eastern edge of the bay. Louisa

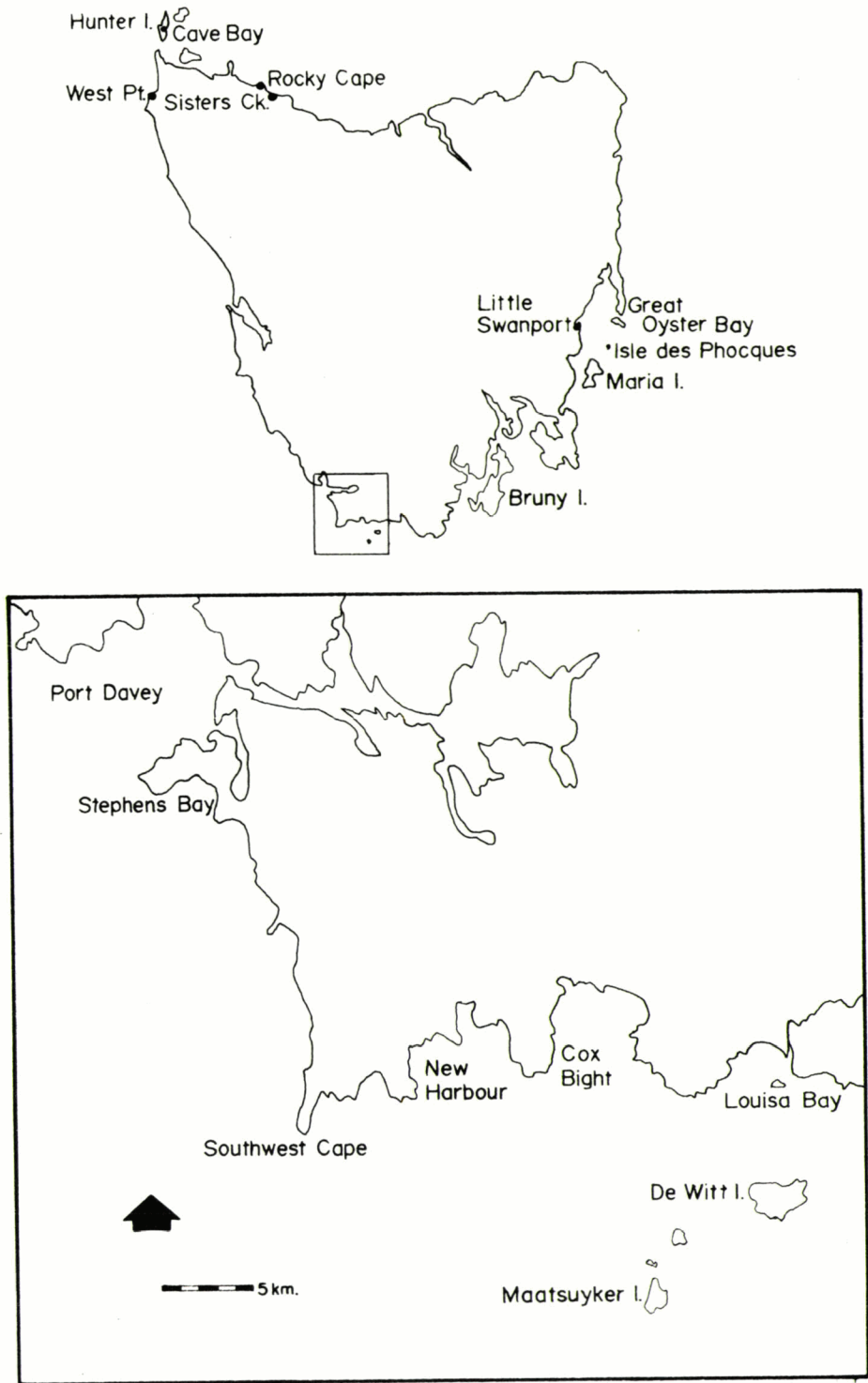


Fig.1 Geographic localities and archaeological sites mentioned in text

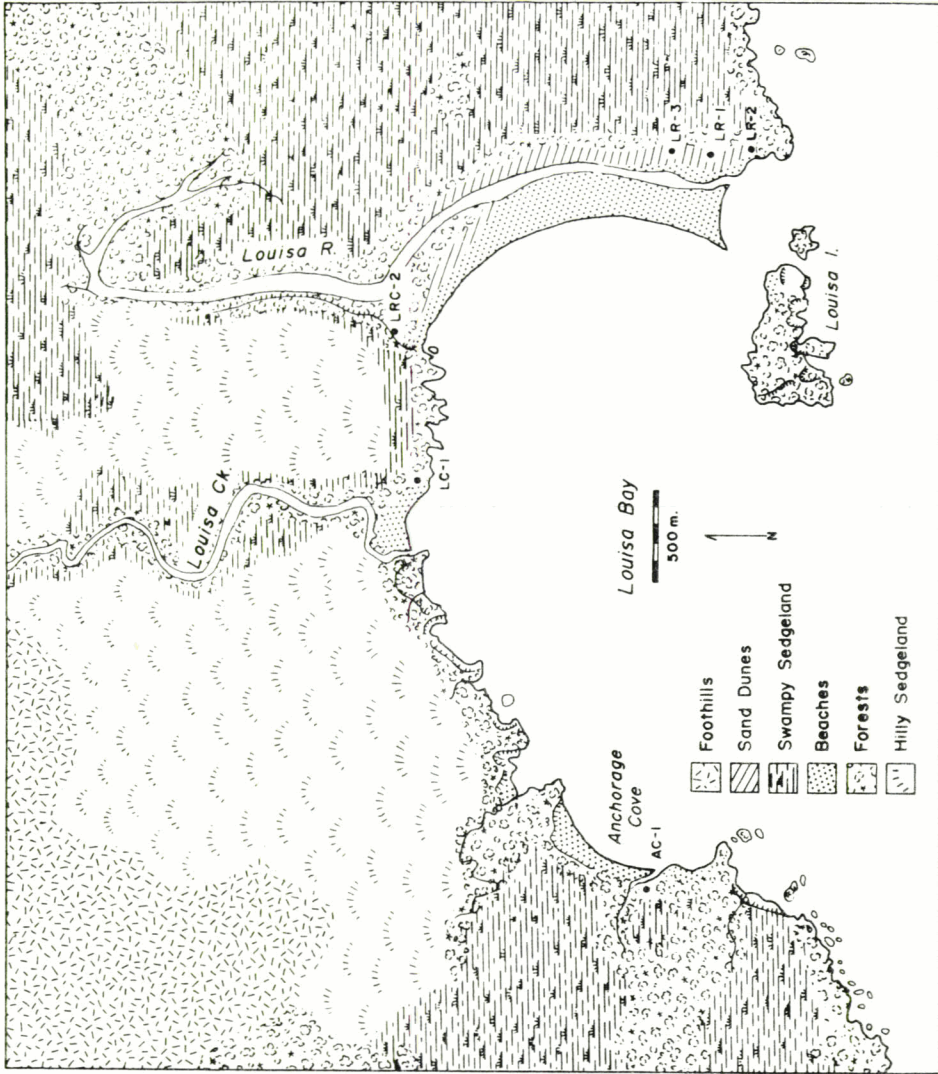


Fig. 2. Louisa Bay: natural zones and archaeological sites.

River, Louisa Creek and the several rivulets are formed by drainages off the quartzite hills of the interior. The plain immediately in the hinterland comprises mainly swamp and sedgelands. Dense copses of trees and shrubs are common in valleys, and similar stands are universally found between the foreshore and plain, often shrouding steep cliffs. Lying off Louisa Bay to the south are DeWitt (6.5 km) and Maatsuyker (13 km) Islands.

### The archaeological sites of Louisa Bay (Fig.2; Table 1)

The sand dune sites (LR) at the mouth of the Louisa River are archaeologically and scenically most spectacular (Neilson 1975:92). The dune face is retreating under the attack of the prevailing south westerly winds, and is perhaps being eroded by the eastward encroachment of the Louisa River, so that today the dune is in places only a few metres wide. The erosional process has exposed a stratigraphic section nearly 1 km long, laying bare the depositional history of the site. The principal components of these deposits are alternate layers of windblown (periods of instability) and organically stained (periods of stability) sands. With the exception of a single widespread epoch of a fossil stable ground surface which can be traced from one end of the dune to the other, it can be said that these deposits represent localised stable periods followed by epochs of source bordering sands. Occupational debris is found on some of these former stable surfaces but at no one point on the dune face can the entire sequence of archaeological deposits be seen. They range from a few to 40 cm depth and most usually consist of small lenses only a few metres long.

Site LR-1 (Fig.3) is located below the major stable ground surface mentioned above, and consists of several periods of human occupation. Because of the general absence of charcoal in the deposits, a basal organically enriched soil sample was submitted for analysis; a charcoal date of  $2970 \pm 200$  years BP (ANU-1771) was obtained. Some 50 cm above the provenance of the dated charcoal, in a deposit (LR1-1/6) rich in shell and bone, was recovered a bone point (Fig.4) exactly similar to those described by Jones (1966:3) and Bowdler (1974b). In the northwest of Tasmania this tool disappears from the Rocky Cape sequence at about 3500 years ago. The considerably more recent appearance of the point at Louisa Bay suggests that it is not the same chronological indicator here as at Rocky Cape. On the other hand, the Louisa Bay point may be a relict from a more remote past, or perhaps the Rocky Cape chronology does not accurately date the disappearance of this artefact class, though Lourandos (1970:49) reports spatulate points only from early contexts at Little Swanport.

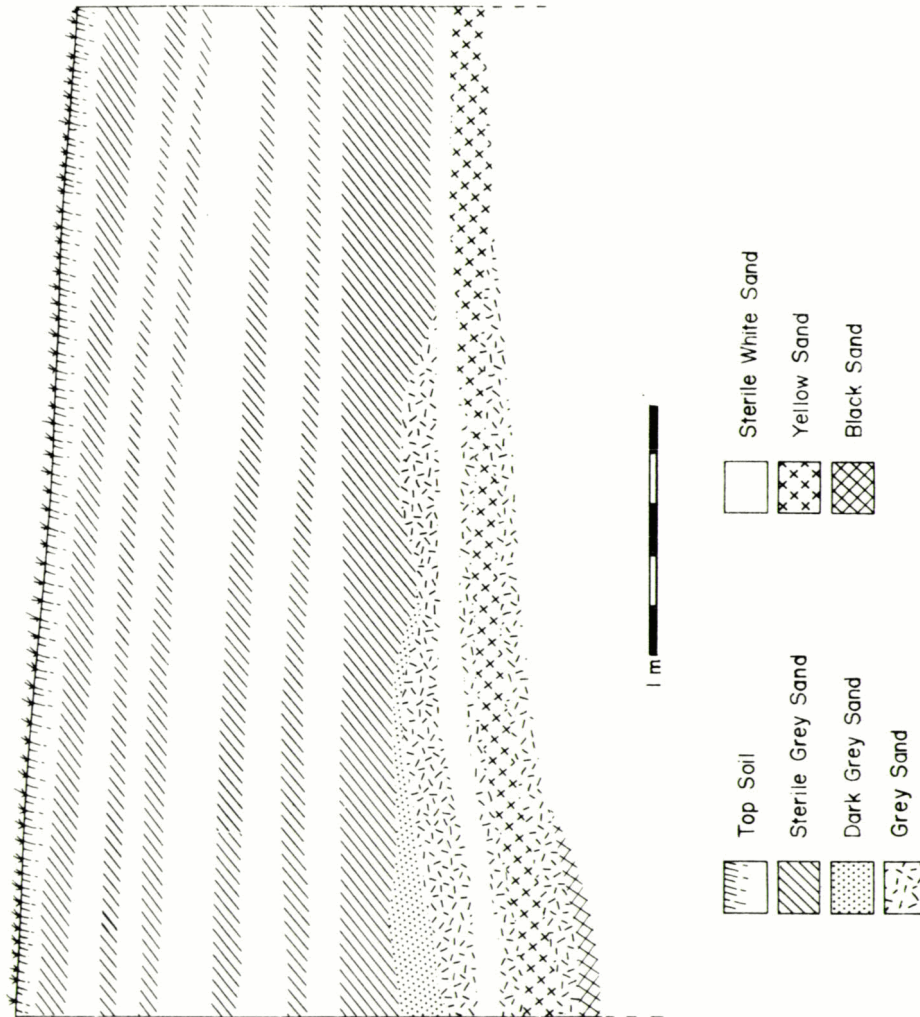
Site LR-3 (Fig.5) is stratigraphically younger than LR-1, having been deposited after the sands of the major stable ground surface had been laid down. The situation is similar to that seen in LR-1 in that alternate unstable/stable periods follow the archaeological deposits (though far fewer), but dissimilar in that the archaeologically laid material is thicker and more dense. A carbon sample from the deposit dates at  $630 \pm 90$  years BP (GaK-6599).

Table 1. Summary information on the archaeological sites of Louisa Bay and Maatsuyker Island.

	LR-1	LC-1	LR-3	LR-2	LRC-2	Maatsuyker Island	AC-1
Years ago	3000	1200	650	500?	800	500	200
Lenses	X	X	X	-	-	-	-
Thicker deposits	-	-	-	X	X	X	X
Pademelon <sub>2</sub>	P	-	O	O	M	-	S
Wallaby	M	Z	O	O	S	-	S
Wombat	S	-	O	O	F	-	F
Ringtail	F	-	O	O	P	-	M
Bandicoot	-	-	O	O	-	-	S
Tiger Cat	-	-	O	O	F	-	F
Seal	X	-	X	X	X	P	M
Warrener	M	S	M	M	S	-	M
Abalone	M	F	M	M	S	X	M
Mussels	S	P	S	S	P	-	-
Others	F	F	F	F	M	-	F
Mutton birds	M	-	M	M	S	P	-
Petrels	M	-	M	M	P	F	-

O NO DATA    X PRESENT    F FEW (1-10%)    M MANY (25-39%)  
 - ABSENT    S SOME (11-24%)    P PREDOMINANT (40% or more)

Fig.3 Stratigraphic section of site LR-1



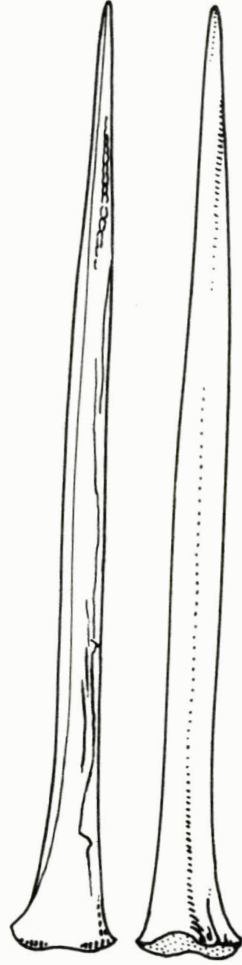
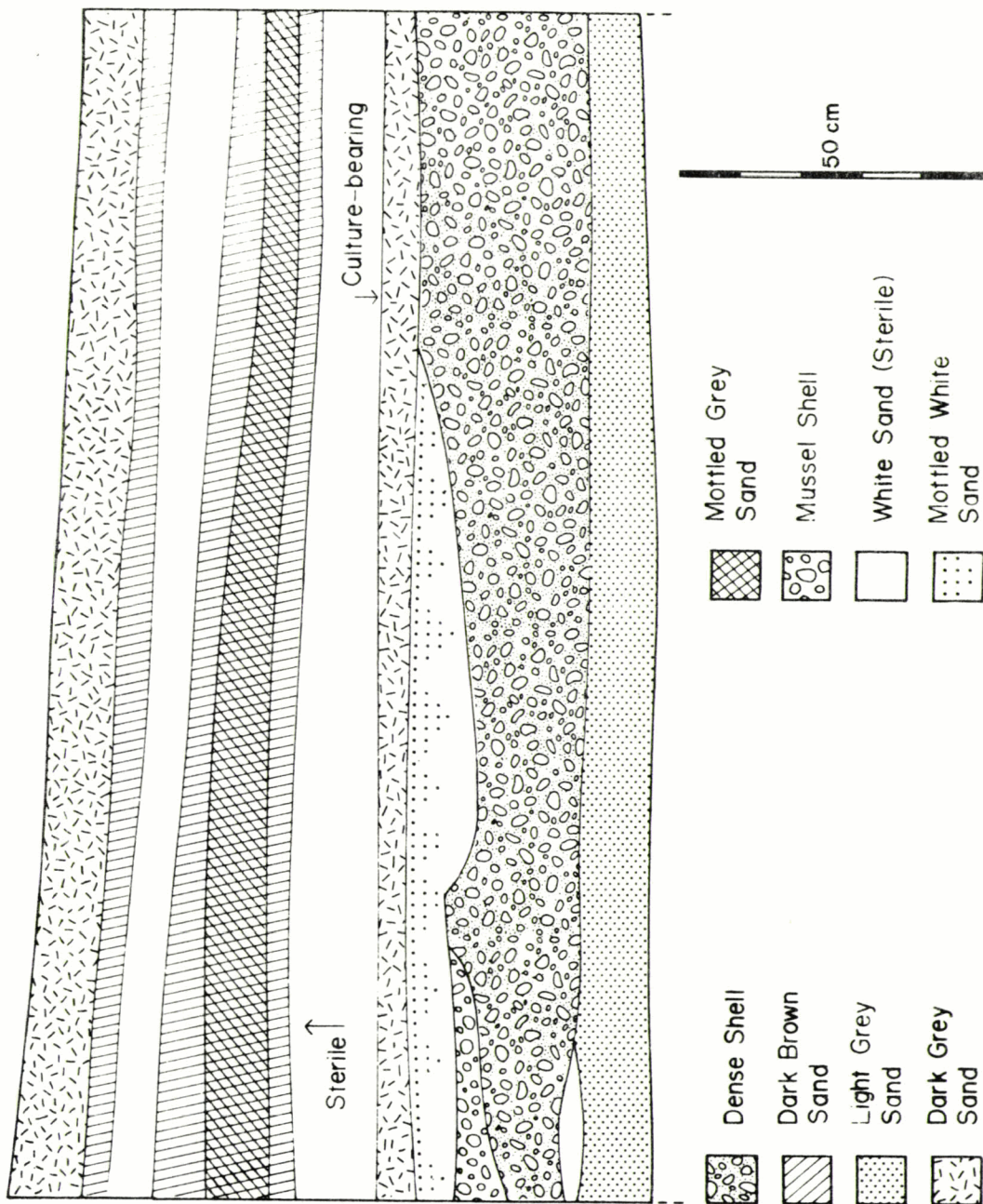


Fig. 4. Bone point from site LR-1. Length: 14.5 cm.



Fig.5 Stratigraphic section of site LR-3



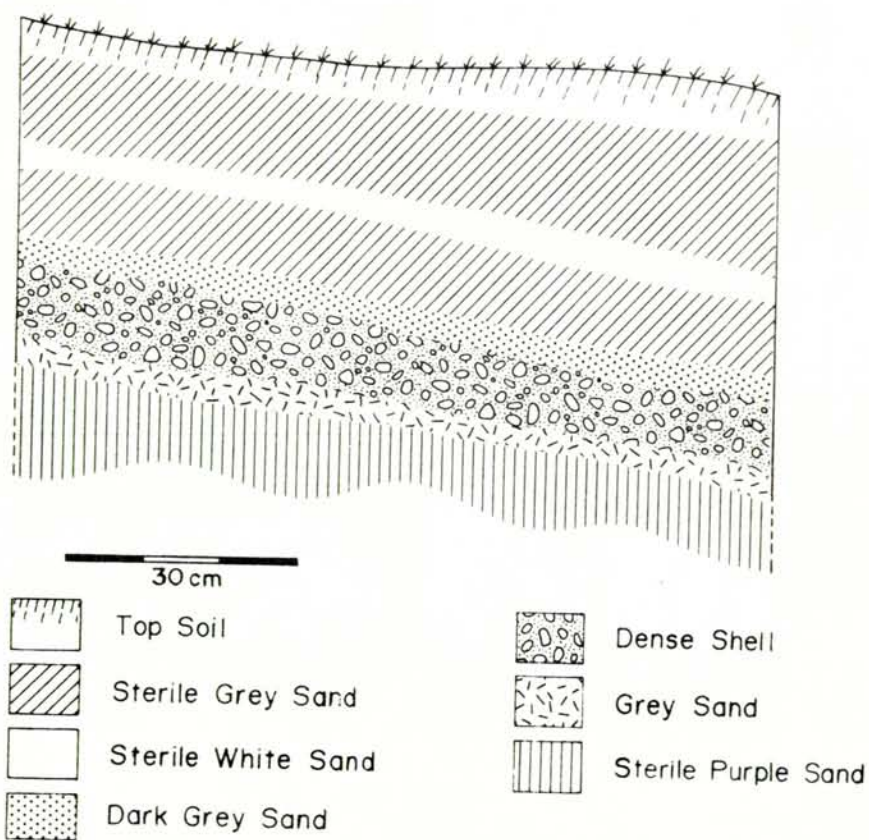


Fig. 6. Stratigraphic section of site LR-2.

Fig.7 Plan view and stratigraphic section of site LRC-2

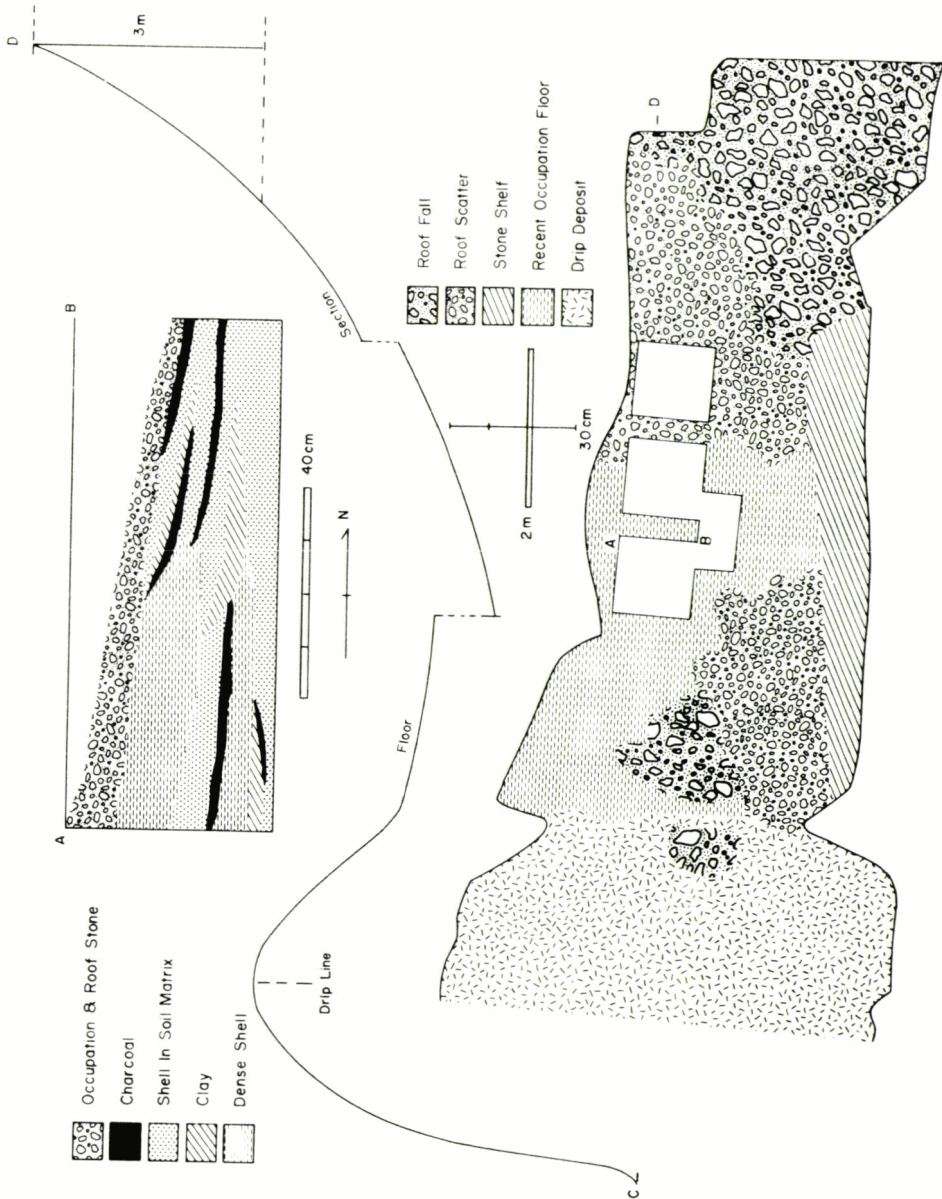
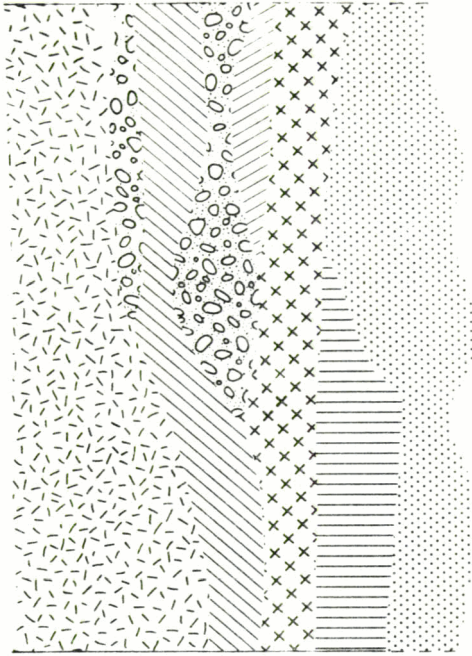


Fig.8 Stratigraphic section of site LC-1

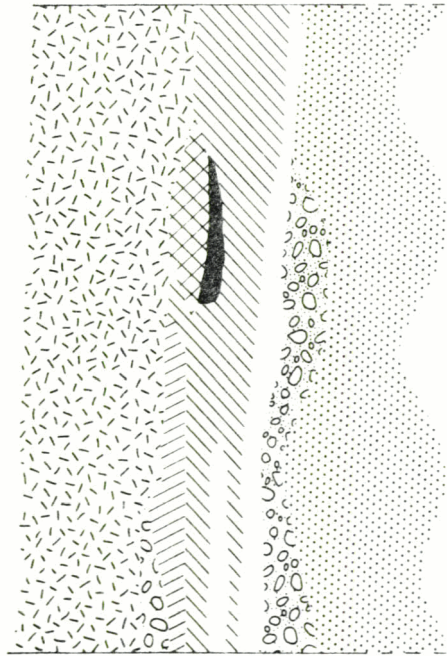
South Section



- Mussel Shell
- White Sand
- Silver Grey Sand
- Dark Sand



North Section



- Light Sand
- Shell
- Tan Sand
- Grey Sand
- Hearth
- Pink Sand

The archaeological deposits of site LR-2 (Fig.6) have been laid directly on the phyllite cliffs adjacent to the eastern headland of Louisa Bay. The 40 cm of debris is by far the thickest and densest seen in the sand dune sites. Overlying the debris are three deposits of unstable/stable/unstable sands followed by the present vegetation surface. The site has yet to be dated, though a bone sample has been submitted to the Australian National University Radiocarbon Laboratory.

The Louisa River sand dune sites offer a kind of chronology based on the physical appearance of the site. The lowest deposits in the early site, LR-1 (Fig.3), are characterised by very shallow lenses of debris, perhaps representing rather ephemeral occupation, the result of seasonal and/or specific exploitation of local resources. The later site, LR-3 (Fig.5), demonstrates much thicker deposits. If the pattern has any reliability, we can expect that site LR-2 (Fig.6) might date on the same order of antiquity as LR-3.

All three sand dune sites, at this stage of the analysis, reflect roughly similar habitat exploitation.<sup>2</sup> Mutton birds (*Puffinus tenuirostris*), seasonally available, and petrels are seen in the faunal record; the land fauna includes species known to prefer open habitats (Ride 1970; Green 1974) like those known on the eastern side of the Louisa River: pademelon (*Phyllogale billardierii*), wallaby (*Macropus rufogriseus*) and wombat (*Vombatus ursinus*). Several species of shellfish are present but the most common are warrener (*Subnivalia undulata*) and abalone (*Notohaliotis ruber*).

Rainforest conditions are seen between the Louisa River and the phyllite cliffs to the west. Along the base of this cliff are a series of small caves, most harbouring some debris. The excavation of site LRC-2 (Fig.7) demonstrated 30 cm of deposit containing numbers of pademelon and wallaby but about half the remains are of ringtail possums (*Pseudocheirus peregrinus*). This is not surprising since the caves are found in a forested environment. The lower percentage of mutton bird remains, compared with the dune sites, is because their Louisa Island habitat is further away; abalone and warrener are also less frequent. Consistent with this picture is the heavy reliance on mussels whose habitat is the brackish waters of the nearby Louisa River. The caves, however, are mostly distinguished by the 68 identified shellfish species, suggesting that the occupants might have experienced lean times, that advantage was taken of every food source during, say, bad weather. So, the presence of shellfish species not normally eaten may simply reflect extended storm conditions. The basal deposit at LRC-2 has been dated to 870 ± 90 years BP (GaK-5990).

LC-1 (Fig.8) is similar to the Louisa River sites. It is being rapidly eroded by wind and storm, and the shallow lensing of occupational soils is reminiscent of LR-1. Mussels form the major part of the food debris, while some wallaby bones suggest exploitation of the plain behind the site. A carbon sample, collected from the hearth midway through the deposit was dated at 1250 ± 100 years BP (GaK-5989). This site is earlier than LR-3, and like LR-1 the deposits are thin lenses.

Site AC-1 consists of a 1 m thick deposit of shell and bone. It is not visibly stratified. Abalone and warrener, as at the other

sites, were the most common shellfish. A quantity of seal (*Arctocephalus doriferus*) bones are present which makes the site unlike others in the bay. The land species record includes equal quantities of ringtail possum, bandicoot (*Isoodon obesulus*) and tiger cat (*Dasyurus maculatus*) on the one hand, and pademelon, wallaby and wombat on the other, indicating exploitation of both plains and woodlands. Birds are not recorded at AC-1.

### The Maatsuyker Island sites

On the north side of Maatsuyker Island, at the present landing jetty, is a narrow and shallow cove which offers in light seas the only safe landing. Access is thus difficult for modern water craft, let alone the frail Tasmanian bark canoe. One site (MAT-1) is found on a narrow foreshore platform ranging from 5-20 m above sea level. The other, today reached by trolley and winch up a 60 degree slope, was 200 m above sea level, but the accumulated overburden of the rubbish of three lighthouse families over a period of 80 years, plus the disturbance created by the construction of a continuous helicopter pad (J. Cook, pers. comm.) has resulted in a massive hillside slump, scattering late 19th and early 20th century artefacts, seal bones, abalone shells, bird bones and stone artefacts along the steep valley leading to MAT-1.

The foreshore platform site, MAT-1, has been extensively sampled. The fauna consist almost entirely of seals, mutton birds and petrels, while in the 35 cm deposit there is only sparse representation of abalone, common today in Maatsuyker waters. The attraction of Maatsuyker Island was almost certainly its large seal population<sup>3</sup> (Milledge and Brothers 1976), on the so-called Needles (Bennett 1955). The faunal evidence suggests seals were taken in February, March and April, the optimum time for exploitation of mutton birds and their chicks (Serventy *et al.* 1971:128-34). The paucity of abalone shells may be interpreted to mean that this otherwise attractive food was made mean in comparison with seals and mutton birds, perhaps it was more work, or maybe the women were left behind. I think, in view of the abundant energy represented by especially seals, that the former alternative is the more correct. Indeed, it might even be that seals were hunted mainly by women (Kelly 1921:177), though the evidence is sparse (Hiatt 1968:207-8). The bulk of archaeological debris suggests that local consumption was the rule rather than a return to the mainland with the meat (Robinson 1966:379).

Site MAT-1 is now an active mutton bird rookery (as is the entire island), so that disturbance is common although the excavations took place in an area devoid of current burrows. In an effort to assess the possibility of contamination or stratigraphic inversion, I selected two carbon samples from the same excavation, one above and one below the clay deposit laid down by slope wash within the period of site occupation. The upper sample (GaK-5987) dated at  $570 \pm 100$  years BP and the lower (GaK-5988) was determined to be  $400 \pm 90$  years BP. These two dates are not significantly different (see Polach and Golson 1966).

## Towards an hypothesis

We have seen the apparent increase in the depth of deposits through time at Louisa Bay sites. The shallow lensing of bone and shell remains as seen especially at LR-1 and to lesser degrees at LC-1, suggest short-term occupation, and of course the sterile wind-blown sands separating the organic soils suggest a substantial hiatus between occupations. We see more ample deposits at LR-3 dated to well within the first millenium BP; the impressive metre thick occupational soils at AC-1, dated to very recent times; and at LR-2 relatively thick debris thought to date within the last 300 or 400 years. The caves, represented by site LRC-2, and Maatsuyker Island, present rather special situations, the former thought to have been sought for relief from storm conditions, the latter visited during the summer, but both dated to within the first millenium BP.

I consider the Louisa Bay sites to be representative of occupation in southwest Tasmania. In the absence of corroborative data from elsewhere in this part of the island, a definite statement cannot of course be made. But I think it is relevant that the breadth and intensity of resources at Louisa Bay cannot elsewhere be matched in any similar volume of space in southwest Tasmania, as measured by the wealth of archaeological sites in the Bay, and by my own survey of large tracks of the area. I consider it equally likely that the range of radiocarbon dates reflects the time depth of southwest Tasmanian occupation. This is more difficult to support, though I think it can safely be asserted that the determined dates are a true reflection of Louisa Bay's occupational time depth. The syllogism can therefore be completed, that if the investigated sites are representative, so then must be the chronology.

Southwest Tasmania might, then, see only 3000 years or so time depth,<sup>4</sup> while Aboriginal man is seen as firmly established in the northwest over 8000 years ago (Jones 1966), and by about the same time in the southeast (Lourandos 1970, 1978; Reber 1965, 1967). If, as a result of this penetration, there was a population increase it would most likely be a local phenomenon to be inferred from the archaeological data. Whatever the reason for this entry (or expansion), it most probably lies in the human arena, for known alterations to the environment had played out their roles on human cultural development some few thousand years previously (Bowler 1976; Jennings 1971; Davies 1974; Lampert and Hughes 1974) and all other things being equal, population levels tend to remain constant in a static environment (see Polgar 1975 for recent statements on the population theme).

I suggest as a viable alternative that the Tasmanian technology has been in the past even simpler than that recorded at the time of European contact.<sup>5</sup> In exploring the ethnographic technology - spears, clubs, digging sticks, canoes, shelters, fire, baskets, and stone tools - the single inessential, though vastly adaptive, item for survival is the rolled bark canoe or canoe raft (see Jones 1976 for detailed descriptions of the canoe and its capabilities).

## An examination of the watercraft hypotheses

Birdsell (1977:136) considers that the type of canoe used by the Tasmanian Aborigines may date to Pleistocene times. I suggest that the canoe known in Tasmania at the time of European contact might be an indigenous invention, or a re-invention, of only some few thousand years antiquity. Neither view can be archaeologically supported, for such a frail piece of equipment would not survive in the archaeological record, and there are no specialised tools necessary for its creation. Nevertheless, an examination of the relevant data is instructive.

It is generally agreed that the first immigrants to Australia were coastally adapted (Birdsell 1977; Bowdler 1977; Jones 1975), though subsequent events are a matter of controversy. On one side stand Birdsell (1957, 1968, 1977) and Jones (1975) who envisage a series of adaptive radiations which within a few thousand years of man's entry result in near ecological saturation, or homeostasis. On the other side is Bowdler (1977), suggesting on a combination of positive and negative evidence, that Australian man filled the coastal niche to which he was adapted before moving inland. Bowdler suggests this inland adaptation occurred no earlier than 12,000 years BP.

The springboard for Bowdler's interpretation is Cave Bay Cave in northwestern Tasmania, and it is there I turn, for it is at Hunter Island that Tasmanian man first appears (Bowdler 1977). A date of 23,000 years BP has been reported for this site, located at that time on the southern margins of the Bassian Plain. Bowdler expresses the view that Tasmanian Pleistocene man was marine oriented (1977:218-9). She argues her case cogently, suggesting that Cave Bay Cave was a temporary hunting camp used by fishermen, yet inescapable is the fact that the cave by itself does not produce supporting data. Indeed, the economic debris is fully terrestrial in origin. In the absence of direct supporting data, it seems that the Cave Bay Cave data could as appropriately support a terrestrial adaptation model as one involving a marine economy as the main motif. It would therefore not be difficult to envisage Bassian Plain hunters becoming the first Tasmanians through no choice of their own. Certainly, as Bowdler states (1977:217), man appears well adapted to a coastal economy at Rocky Cape 'just as the sea reached its present level', but of course the data are drowned which might have recorded the process by which this adaptation was realised.

It must, then, be accepted as a reasonably alternative that Tasmania's terminal Pleistocene founder population was terrestrially adapted, and further, that in later times a maritime economy was evolved in response to a decreasing terrestrial environment and as increasingly stable and rich littoral (Lampert and Hughes 1974; Bowdler 1977:212-3). The corollary to this is that watercraft beyond a simple log was perhaps unknown and that in their isolation the Tasmanian Aborigine developed the rolled bark canoe only in relatively recent times.

Data in partial support of such an interpretation are available from the Hunter Island research: Bowdler (1975:25) argues that a land link to the mainland was severed about 4000 years ago, and the



island was not visited for another 2 millennia or so. Yet Jones' (1966, 1968) evidence from Rocky Cape, Sisters Creek and West Point attests to a population in the area. Bowdler's survey of Hunter Island (1974a) records its popularity in times past, so we may suggest that after the severing of the tombola, Hunter Island was isolated until the development of watercraft adequate to the journey.

Further evidence comes from the 50 km long Bruny Island forming the breakwater for the D'Entrecasteaux Channel, itself in places only 2 km wide. Sites at the northern end of Bruny have been maximally dated to 5000 and 6000 years BP (Reber 1965:264-5), and are characterised by dense shell, as if deposited at relatively regular intervals. Unfortunately, minimal dates for these deep middens are not available. The only other Bruny Island dated site is one described as having been visited irregularly because sand layers separate the shell, bone and wood charcoal deposits (Reber 1965:265). While the absence of firm terminal dates for the earlier sites weaken the argument, it might be interpreted that, at the time of their occupation, visits to them may have been made possible by a tombola connecting Bruny with the mainland - such as described by Bowdler (1975:25) for Hunter, or the 5 km sand spit currently joining North and South Bruny.

The hypothesis developed here might also help explain the ethnographically observed absence of the canoe in northeastern Tasmania. Deep embayments and cliffed headlands are remarkably absent in this part of Tasmania, and islands and large rivers are rare, yet it is in these locales such craft were most often recorded (see Jones 1976:Fig.6). In addition, bark canoes were directed largely by wind and current, and the westerly directions of both would make their use in these parts of Tasmania more a liability than an asset. Indeed, canoes on the east coast are recorded only from Maria Island and Great Oyster Bay, both of which are protected localities. Thus, climatic and physiographic conditions might be responsible for their distribution, rather than cultural sanctions developing out of catastrophe such as envisaged by Jones (1976:250).

It appears, even, that the presence of sealing islands was insufficient incentive. Despite the existence of seal colonies at Isle des Phocques opposite Lourandos' Little Swanport site, seal bones were not recovered from the site (Lourandos 1970:87). Note should be made that this rock is open to the Tasman sea. I suspect that the east coast occurrence of archaeological seal remains is restricted to areas of mainland colonisation - as perhaps modelled by West Point (Jones 1971:549) - or to the capture of beached animals such as described by Robinson at Louisa Bay (Robinson 1966:118). And of course with the absence of off-shore seal colonies at Rocky Cape, it is probable that through the history of the site seals were obtained from mainland colonies or by frequent beach kills.

## Conclusions

Jones, at Rocky Cape, sees his data as pointing towards a diminishing technology and a reduced diet through time (Jones 1971). At about 3500 years ago a highly distinctive bone point, relatively common at Pleistocene age sites in mainland Australia (Jones 1973:

280) and present at Cave Bay Cave (Bowdler 1974b), disappears from the Rocky Cape sequence (Jones 1966, 1971). Not long before the disappearance of the bone point, scale fish remains disappear too. In his most recent statement, Jones (1978) says 'like a blow above the heart, it took a long time to take effect, but slowly and surely there was a simplification in the tool kit, a diminution in the range of foods eaten, perhaps a squeezing of intellectuality'. He goes on to say that Tasmania's native population may have been doomed to a slower extinction than that suffered at the hand of European man, albeit as sure.

In an attempt at interpreting the Louisa Bay data, I have offered the possibility that the relatively recent development of Tasmania's characteristic rolled bark canoe allowed a more efficient exploitation of southwest Tasmanian resources. I suggest, as a corollary, that the Tasmanian's mind was not becoming stiff with disuse. The prohibition on scale fish, while culturally sanctioned, may have had a most devious origin, the extinction of a habit whose origin may never be known. There are many records of entire ranges of food becoming taboo (Simoons 1961; Harris 1975:14-47) and I would submit the Tasmanians are not a special case, that for a reason perhaps unconnected with isolation and obscured by the passage of time, fish were no longer considered a desirable food. Similarly, an alternate hypothesis can be offered for the disappearance of bone points from the archaeological record. Jones' analysis of these artefacts (Jones 1971:488-524) suggested to him that they were instrumental in the preparation of skins (pp.513-4). It is simpler to interpret, as does Jones (1971:524) when leading up to his extinction hypothesis, that with climatic amelioration there was less use for skins, that perhaps in more recent Tasmanian winters ochre and grease were equal to, or more effective than, skins. Finally, at the time of European contact the Tasmanians demonstrated their adaptability by quickly accepting new ideas such as the dog (Jones 1970) and European weaponry (Calder 1873).

Might it be, then, that the data we see in Tasmania's prehistory points not toward stagnation and moribundity, but rather toward continuing adaptation?

## Notes

<sup>1</sup> This is an expanded version of a paper read at the Australian New Zealand Association for the Advancement of Science held in Hobart, 1976. The research was supported by the Tasmanian Museum and by the Australian Institute of Aboriginal Studies while I was archaeologist at the Museum. Detailed site reports are currently being prepared for later publication.

<sup>2</sup> References to the preliminary and provisional mammal analysis are through the courtesy of Dr David Horton, Australian Institute of Aboriginal Studies, who is currently preparing his final statement.

<sup>3</sup> It is relevant that De Witt Island does not today support a seal population, though shearwaters, ducks, penguins and other birds nest and brood there. Evidence for Aboriginal occupation is lacking (Vanderwal 1978).

<sup>4</sup> It is, however, unreal to suggest that the Tasmanians might have been unaware of the southwest. Considering the nature of the environment, it can reasonably be proposed that a certain limited and highly seasonal exploitation did take place, perhaps only incidentally and by family groups leaving little evidence of their visits.

<sup>5</sup> Indeed, Jones sees a decreasing technological complexity through time. Such victims were, certainly, the well known bone point (Jones 1966, 1974) and less certainly, the spear thrower and boomerang (Jones 1977:343, 1978; cf. Hayden 1977:86). There is, in fact, no direct evidence in Tasmania for the latter two items (cf. Luebbers 1975).

## Bibliography

- Bennett, I. 1955 South to Maatsuyker: a visit to lonely light-houses in Bass Strait and Tasmanian waters. *Walkabout*, May
- Birdsell, J.B. 1957 Some population problems involving Pleistocene man. *Cold Spring Harbour Symposia on Quantitative Biology*, 22:47-69
- 1968 Some predictions for the Pleistocene based on equilibrium systems among recent hunter-gatherers. In R.B. Lee and I. De Vore (eds) *Man the Hunter*. Chicago: Aldine, pp.229-40
- 1977 The recalibration of a paradigm for the first peopling of greater Australia. In J. Allen, J. Golson and R. Jones (eds) *Sunda and Sahul*. Academic Press, pp.113-67
- Bowdler, S. 1974a An account of an archaeological reconnaissance of Hunter's Isles, North-West Tasmania, 1973/4. *Records of the Queen Victoria Museum*, no.54
- 1974b Pleistocene date for Man in Tasmania. *Nature*, 252:697-8
- 1975 Further radiocarbon dates from Cave Bay Cave, Hunter Island, north-west Tasmania. *Australian Archaeological Association Newsletter* 3:24-6. Canberra
- 1977 The Coastal Colonisation of Australia. In J. Allen, J. Golson and R. Jones (eds) *Sunda and Sahul*. Academic Press: London, pp.205-46

- Bowler, J.M. 1976 Recent developments in reconstructing late Quaternary environments in Australia. In R.L. Kirk and A.G. Thorne (eds) *The Origins of the Australians*. Canberra, pp.55-77
- Calder, J.E. 1873 Some account of the wars of extirpation and habits of the native tribes of Tasmania. *J. Anthropological Institute* 3:7-28
- Davies, J.L. 1974 Geomorphology and Quaternary environments. In W.D. Williams (ed.) *Biogeography and Ecology in Tasmania*. The Hague, pp.117-27
- Green, R.H. 1974 Mammals. In W.D. Williams (ed.) *Biogeography and Ecology in Tasmania*. The Hague, pp.367-96
- Harris, M. 1975 *Cows, Pigs, Wars and Witches*. Hutchinson
- Hayden, B. 1977 Sticks and stones and ground edge axes: the upper palaeolithic in Southeast Asia? In J. Allen, J. Golson and R. Jones (eds) *Sunda and Sahul*. Academic Press, pp. 73-109
- Hiatt, B. 1968 The food quest and the economy of the Tasmanian Aborigines. *Oceania* 38:99-133; 190-219
- Jackson, W.D. 1965 Vegetation. In J.L. Davies (ed.) *Atlas of Tasmania*. Lands and Survey Dept., Hobart, pp.30-5
- Jennings, J.N. 1971 Sea level changes and land links. In D.J. Mulvaney and J. Golson (eds) *Aboriginal Man and Environment in Australia*. ANU Press: Canberra, pp.1-13
- Jones, R. 1966 A speculative archaeological sequence for northwest Tasmania. *Rec. Queen Victoria Mus. Launceston, n.s.*, 3: 186-215
- 1968 The geographical background to the arrival of man in Australia and Tasmania. *Arch. Phys. Anthropol in Oceania* 3:186-215
- 1970 Tasmanian Aborigines and dogs. *Mankind* 7:256-71
- 1971 Rocky Cape and the problem of the Tasmanians. Unpublished PhD thesis, Australian National University, Canberra
- 1973 Emerging picture of Pleistocene Australians. *Nature* 246:278-381
- 1975 The Neolithic Palaeolithic and the hunting gardeners. In R.P. Suggate and M. Cresswell (eds) *Quaternary Studies*. Royal Society of New Zealand, Bull. no.13

- Jones, R. 1976 Tasmania: aquatic machines and offshore islands. In G. de G. Sieveking, I.H. Longworth and K.E. Wilson (eds) *Problems in Economic and Social Archaeology*. Duckworth, pp.235-63
- 1978 (in press) The Tasmanian paradox. In R. Wright (ed.) *Stone Tools as Cultural Markers*. Australian Institute of Aboriginal Studies: Canberra
- Kelly, J. 1921 The first discovery of Port Davey and Macquarie Harbour. *Papers and Proceedings Royal Society of Tasmania*, 160-81
- Lampert, R.J. and P.J. Hughes 1974 Sea level change and Aboriginal adaptations. *Archaeology and Physical Anthropology in Oceania* 9:226-35
- Lourandos, H. 1970 Coast and hinterland: the archaeological sites of eastern Tasmania. Unpublished MA thesis, Australian National University, Canberra
- 1978 Stone tools, settlement, adaptation: a Tasmanian example. In R. Wright (ed.) *Stone Tools as Cultural Markers*. Australian Institute of Aboriginal Studies: Canberra
- Luebbers, R. 1975 Ancient boomerangs discovered in South Australia. *Nature* 253:39
- Milledge, D. and N. Brothers 1976 Seabird Islands: Maatsuyker Island, Tasmania. *The Australian Bird Bander* 14(1): 32-34
- Neilson, D. 1975 *South West Tasmania: Land of the Wild*. Rigby
- Polach, H.A. and J. Golson 1966 Collection of specimens for radiocarbon dating and interpretation of results. *Australian Institute of Aboriginal Studies Manual*, 2
- Polgar, S. 1975 (ed.) *Population, Ecology and Social Evolution*. Mouton: The Hague
- Reber, G. 1965 Aboriginal carbon dates from Tasmania. *Mankind* 6:264-8
- 1967 New Aboriginal carbon dates from Tasmania. *Mankind* 6:435-7
- Ride, W.D.L. 1970 *A Guide to the Native Mammals of Australia*.
- Robinson, G.A. 1966 Journals and Papers. In N.J.B. Plomley (ed.) *Friendly Mission: the Tasmanian Journals and Papers of George Augustus Robinson, 1829-34*. Hobart

- Serventy, D.L., V. Serventy and J. Warham 1971 *The Handbook of Australian Sea Birds*. Melbourne
- Simoons, F.J. 1961 *Eat Not This Flesh*. Madison
- Vanderwal, R.L. 1978 Prehistory and the archaeology of Louisa Bay. In H. Gee, *et al.* (eds) *The South West Book*. Griffin Press: Adelaide. (In press)

*Department of History  
La Trobe University*

RESIDUAL HOLOCENE POPULATIONS IN BASSIANIA:  
ABORIGINAL MAN AT PALANA, NORTHERN FLINDERS ISLAND

*D. Wayne Orchiston<sup>1</sup> and R.C. Glenie<sup>2</sup>*

Introduction

Bassiania, that low lying plain surmounted by a chain of steeply-rising granite mountains linking Victoria and Tasmania during the Pleistocene, was one of the few extensive land areas of the Greater Australian continent lost as a consequence of the Flandrian transgression. Today, nothing of it remains but the Bass Strait islands. Flinders Island, Cape Barren Island and Clarke Island, comprising the Furneaux Group, together with the Hogan and Kent Groups, are found in the east of the Strait, while the western chain of islands comprises King Island and the Hunter Group (see Fig.1). The nature and chronology of Aboriginal occupation of Bassiania is a major issue in Australian prehistory. None of the islands was occupied when first visited by Europeans, yet surface finds of Aboriginal artefacts have been made in the Kent Group, and on Flinders, Cape Barren, and King Islands (see Jones 1977:335), and Bowdler (1974a, 1974b, 1975a, 1975b, 1977) has carried out field surveys and excavations in the Hunter Group (Fig.1). Jones (*op.cit.*) believes that the occupation evidence from all these islands, except for those in the Hunter Group, dates to the Pleistocene, and that as the seas rose during the Holocene, Greater Furneaux Island and Greater King Island were abandoned, their inhabitants retreating