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BROUGHTON ISLAND, N.S.W.

RECENT PREHISTORIC USE OF AN OFFSHORE OCEAN ISLAND

Introduction

In June 1974 exceptionally strong winds coincided with high tides on the coast of New South Wales to create damaging waves. Unpublicised results were wave cut sections in middens previously unrecorded. One such exposure was on Broughton Island, which I visited for a day in July 1974.

Location

Broughton Island is 32° 35' S, 152° 20' E; grid reference is 535967. The island is of irregular shape, being from north to south about 2 km across and from east to west 3 km. An aerial photo has been published in D. Baglin and B. Mullins *Islands of Australia*.

This rocky island (highest point is 91 m) lies in the Pacific Ocean 3 km off a mainland coast which is low, with swamp and dunes. The maximum depth of water in the 3 km between the island and the coast is about 15 m.

Environment

The island is composed of various rock types, including siliceous ones suitable for making stone implements. Grass covers the island, trees and shrubs being scarce. Such bareness may be an artifact of periodic white settlement; it is noticeable that nearby Cabbage Tree Island, which has not been settled, has a dense cover of shrubs and trees.

Fresh water is permanently available and drains from swamps backed up behind dunes.

There are bays at various places around the island. This means that shelter can be found from winds of any direction. There are extensive rock-platforms in the intertidal zone, which supply molluscs and flat surfaces suitable for setting fish traps. Mutton-birds nest in the spring and early summer.

All in all it is an island eminently suitable for castaways.

A midden

The midden I investigated is on the north side of the island, north west of the highest point. The high seas of June 1974 had cut a face 1.5 m high in a dune fronting the beach. The surface of this dune was grassed and it had apparently sloped gently down to the beach before the sudden erosion.

Geomorphologically the dune must be recent. It is composed of coarse sand, on and in which no soils have developed. It sits on the present beach and is separated by a swamp from older dunes inland.

The dune runs for some 300 m along the beach. Evidence for human habitation is to be seen stratified in the exposed section of this dune from a point midway on the beach along to its eastern end. The thickest layer of midden is about 50 cm deep, at a point 30 m from the eastern end of the dune.

Along most of the dune two phases of habitation are evidenced by grey bands of midden separated by some 50 cm of clean blown sand. In one place at the eastern end the clean sand wedges out, causing the layers of habitation to merge for a few metres at the greatest elevation of the midden above high water mark. All along its length at least 40 cm of clean blown sand covers the midden.

The contents of the midden

I examined the eroded face of the midden, and the scatter of collapsed debris below. I did no excavation or quantified study. Apart from a soil sample nothing was removed from the site.

The midden contains occasional flaked stone artifacts and burned pieces of sandstone. The elevation of the midden is such that we can safely assume all pieces of stone were introduced during occupation. The flaked implements were entirely large scrapers, which are characteristic of middens north of Newcastle. As is to be expected I found no trace of the specific implement types of the Bondaian tradition, which are characteristic of recent middens only to the south of Newcastle.

Plant remains are exclusively disseminated fragments of charcoal.

There are several species of shellfish present. Limpets and peri-winkles are the most numerous, though the greatest yield of meat was probably from abalone.

Fish bones and jaws are common. When a small sample of midden was being dried and sieved in the laboratory to collect charcoal I noticed several scales of fish. Bird bones (most of which I presume are of mutton-birds) are distributed through the midden. Though mammal bones are clearly scarce I saw part of the maxilla of a young seal and one side of the mandible of an adult dog.

As is to be expected, the pH of the midden is slightly alkaline.

Human skeletal remains

Remains of two skeletons are to be seen exposed in section at the eastern end of the dune. Some bones had tumbled to the beach below.

The first skeleton. This had been buried in a grave dug to just over 0.5 m deep from the upper midden layer (fig. 1); the grave penetrated the lower layer and had its base in clean sand. It appears to have been dug during the early phase of deposition of the upper midden.

In the collapsed dune below this skeleton were several post-cranial bones, including bones from the upper and lower limbs. However I saw no bones of the skull.

It is easy to reconstruct how this skeleton became exposed. Flush with the section were the proximal ends of both tibiae, the condylar surfaces of which were parallel with the section. The femurs had fallen out and lay in the collapsed debris. Therefore the skeleton did not have its knees flexed beyond 90° and may have been in an extended position. In either case one of the first bones to be exposed would have been the skull and in the absence of *any* of its bones in the debris we can presume it was carried away by the waves. However the bones of the upper limb found in the debris included a clavicle and scapula. Therefore direct wave action penetrated no further than the cervical vertebrae, the rest of the skeleton being exposed by subsequent collapse of the dune.

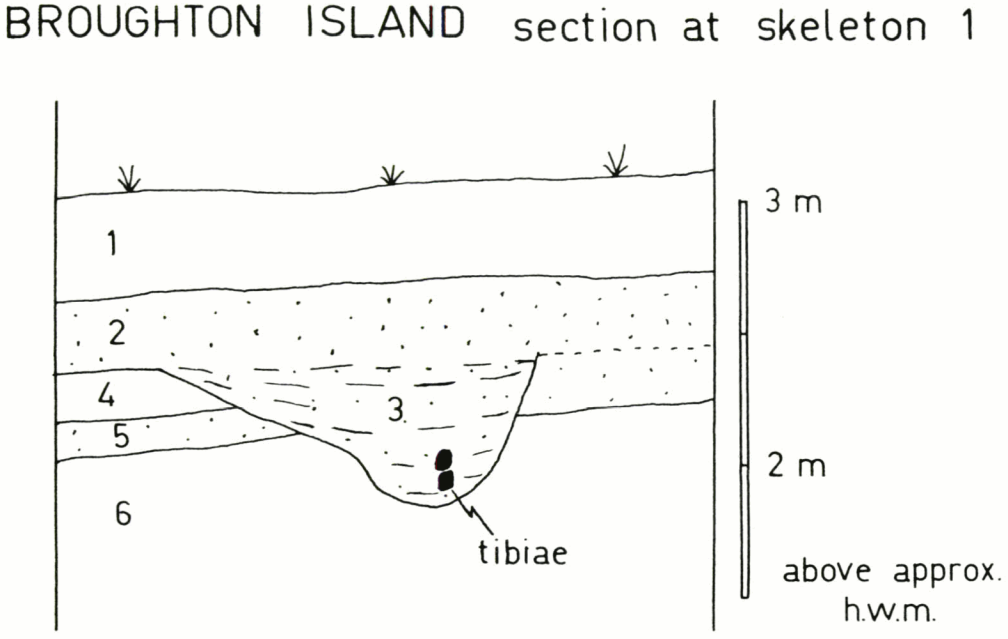

Fig. 1 Section of the Dune showing position of one of the skeletons in the midden.

The layers are:

1. clean sand
2. upper midden
3. grave fill
4. clean sand
5. lower midden
6. clean sand

The disposition of the body at inhumation is reasonably clear. The left tibia lay above the right and the anterior surfaces of both bones faced west. We can conclude that the body lay on its right side with its head to the north in an extended or slightly flexed position.

Stature is estimated at 170-175 cm on the basis of femur, humerus and radius using the regression formulae of Dupertuis and Hadden. The angle of the ilio-sciatic notch on the pelvis seemed shallow and wide enough to be female. All epiphyses were fused, so the individual was adult.

The second skeleton. These remains were in the section 10 m west of the first skeleton. There were no signs of a grave, the bones protruding from a 30-40 cm thick band of midden.

The bones still in section were the proximal ends of the right ulna and radius and to the left of these were 2 ribs and a vertebra. The skeleton had thus been naturally sectioned across the waist.

The body had been left lying (or shallowly inhumed) on its back, again with its head to the north. In the collapsed dune below the section we found some post-cranial bones of the upper part of the body only. It can therefore be assumed the body was in an extended position.

Again I saw no bones of the skull. The proximal end of the right humerus was in a very eroded state. It is therefore possible that the top of this skeleton was exposed well before the June storm.

I could make no assessment of sex and made no estimation of stature. The epiphyses were fused, therefore the individual was an adult.

In reporting the exposed remains to me as individuals of the local tribe, Mr Gilbert had specifically asked me to rebury them. This I did, inserting the bones that had fallen out of the section into the dune below their respective places of burial.

It is common knowledge that the June storm of 1974 was of exceptional severity. Specific evidence of its intensity on Broughton Island is the severe damage to shacks which had stood inviolate for some decades in a cove facing south west. It seems, therefore, that given normal seas the clean blown sand and midden will slump into a natural slope of rest. Grass will then spread over the slope and the midden will remain undisturbed.

Age of the occupation

The site has a very recent appearance. The dune sites on the present beach and has no soils developed in it. Fish scales survive in the midden. In my report to the NPWS I intuitively judged the site to be of recent prehistoric age, not more than 2,000 years and possibly not more than 500 years old. The complete absence of historic artifacts suggested an upper limit for its recency.

It is therefore satisfactory to now have a radiocarbon date which supports my intuitions. SUA-402C is charcoal from the upper layer of midden and gives a date of 440 ± 180 BP. A shell date may be measured later.

Comments

This midden is a scarce example of the recent prehistoric use of an offshore island on the exposed Pacific coast of Australia. Some 3 km of open sea must have been crossed in bark canoes, with dogs on board or swimming behind. Equipped as we were with life-jackets, dual motors and flares I admired the nerves of my prehistoric antecedents.

The remains of migratory mutton-birds show that the site was used at least during spring and early summer. The crossing could only be made in a calm sea. If the weather deteriorated while the island was being used its rich resources would have kept a group fed for some days, if not weeks.

I saw nothing in this shallow deposit to suggest that the island was part of the regular seasonal schedule of the hunters and gatherers of the mainland. Unless and until an archaeological survey of the island shows more intensive occupation it would be safest to assume that we have evidence of at the most two brief visits, separated by a few years. Indeed for all we know, the clean blown sand could represent a strong wind during a single visit.

The island would repay a detailed archaeological survey. I was able to spend less than a day there.

Acknowledgements

Mr B. Tynall of Nelsons Bay, a long time visitor to the island, first noticed the freshly cut midden with human bones and told Mr K. Gilbert who then contacted the University of Sydney. I obtained a permit from the National Parks and Wildlife Service, consulted with Mr Gilbert and arranged to meet Mr J. Winter of NPWS on the island. Mr D. Pilgrim kindly provided a boat for the visit. Expenses were met from the University Research Grant of the University of Sydney. Mr D. Smith assisted me in the survey.

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