RADIOCARBON DATES FOR BALER SHELL IN THE GREAT SANDY DESERT

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One of the distinctive features of Aboriginal groups in the Australian desert was the large geographical scale of these hunter-gatherer systems. The residential mobility of groups was invariably high, with some individuals regularly moving 200 kms or more, and this was coupled with exchange systems which moved goods across the continent or from coast to interior, often over distances >1000 km (Mulvaney 1976). The scale of these systems is much greater than those recorded for other comparable parts of the world (for example: for southern Africa see Mitchell 1996, Table II; cf Veth 2000 for Australia) and represents a significant challenge for archaeological research into the development of Australian desert societies. The prospect of being able to examine the prehistory of customary trade and exchange systems, social boundaries and regional interconnections has provided incentive for studies of the temporal and spatial distribution of ground-edge axes and grindstones (Binns and McBryde 1972; McBryde 1987). pearl shell and baler shell (Akerman and Stanton 1994; Mulvaney 1976), and red ochre (eg. Smith and Fankhauser 1996, Smith et al. 1998). Here we report radiocarbon dates indicating ‘down-the-line’ exchange of baler shell (Melo sp.) into the heart of the Great Sandy Desert 2000 years ago.

The dated samples (Table 1) are small pieces of baler shell found on the surface of campsites (Kiriwiri, Kurtararra and Yurlpul) near Aboriginal wells and springs along the shores of the Percival Lakes, in the Great Sandy Desert, Western Australia (lat. 21° 30’ S). Kiriwiri is a broad Melaleuca-lined depression in dunes on the northern side of the lakes, centred on a shallow well that taps a spring beneath a cap of calcrete. Dunes and sandy surfaces north of the well have a low-density lithic scatter (<1 artefact/m²), including millstones and fragments of seedgrinders, red ochre and fragments of baler shell. Kurtararra, also on the northern side of the lakes, is an extensive scatter of lithics, millstones, fragments of seedgrinders, red ochre, and baler shell - apparently eroding from sandy surfaces on the lake shore - adjacent to two prominent springs outcropping on the surface of the salt lake. Yurlpul, on the southern shores of the lakes, is a deep well on an Acacia flat, surrounded by a scatter of lithics, finely-fragmented bone, millstones, fragments of seedgrinders, pieces of yellow ochre and baler shell. We collected shell from each of these sites in 1996, in the course of research for the Martu Native Title claim. Identification as Melo sp. was confirmed by G.W. Kendrick (Western Australian Museum). In particular, the Yurlpul specimen was identified as the anterior end of a large Melo.

Ethnographically, baler shell was used for a range of functions - including pendants, spear-thower discs, hafted scrapers and adzes, spoons and containers (Schall 1985). The major function of the shell traded into the interior of the continent was as pendants. Where brilliant white polished baler shell pendants are still important in rain-making ceremonies (Akerman 1973). The archaeological specimens from the Percival Lakes are too small to determine their original function. None retained any evidence of deliberate modification or use-wear. However, given that this line of springs is said by Martu to be part of the Jilja mythology associated with rain-making (Tonkinson 1972), the archaeological specimens may well be pieces of worn-out pendants. Alternatively, it is possible that they are debris from the manufacture of pendants, which would account for their presence on general occupation sites as Akermann (1973:124) observed at Wiluna further south in the desert.

Baler shell pendants were carefully curated and could remain in circulation for more than a century. Fortunately, any difference that this might create - between the age of a shell and the time of deposition - is likely to be subsumed within the 2SD uncertainty associated with its radiocarbon age. For the Percival Lakes samples the XRD results show that none of these samples are old fossil or sub-fossil shell.

<table>
<thead>
<tr>
<th>Site/ Sample</th>
<th>Laboratory code</th>
<th>Sample size (g.)</th>
<th>Radiocarbon age (yrs BP)</th>
<th>Δ14C (±0.2‰)</th>
<th>Age with Oceanic reservoir correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiriwiri #1</td>
<td>WK5638</td>
<td>9.0</td>
<td>500±70</td>
<td>0.6</td>
<td>50 BP</td>
</tr>
<tr>
<td>Kiriwiri #2</td>
<td>WK5639</td>
<td>3.0</td>
<td>660±150</td>
<td>1.0</td>
<td>210 BP</td>
</tr>
<tr>
<td>Kurtararra Well #1</td>
<td>WK5640</td>
<td>1.0</td>
<td>2710±280</td>
<td>1.1</td>
<td>2260 BP</td>
</tr>
<tr>
<td>Kurtararra Well #2</td>
<td>WK5641</td>
<td>8.0</td>
<td>1250±90</td>
<td>1.4</td>
<td>770 BP</td>
</tr>
<tr>
<td>Yurlpul</td>
<td>WK5642</td>
<td>16.0</td>
<td>2270±60</td>
<td>0.7</td>
<td>1820 BP</td>
</tr>
</tbody>
</table>

Table 1 Radiocarbon dates for baler shell (Melo sp.) in the Great Sandy Desert (The Waikato Radiocarbon Laboratory pre-treated each sample by mechanically clearing surfaces and washing in an ultrasonic bath. All samples were analyzed by XRD and found to be aragonite. Oceanic reservoir correction is taken as 450±35 years following Bowman (1985) for northwestern Australia).
Melo anharpa has a wide distribution in coastal waters around northern Australia, from Fraser Island in the east to Shark Bay in the west. The major sources of ethnographic boulder shell objects in the interior of the continent were the Gulf of Carpentaria and Cape York Peninsula (Mulvaney 1976) but shell was also traded from the Pilbara and Kimberley coast into the desert. We assume that our samples derive from the nearer north-west coast sources, ~400 km away. Isotopic analysis might test this but comparative data is not yet available. The presence of boulder shell in late Pleistocene deposits at ~12,400 from Noala Cave on the Montebello Islands (O’Connor and Veth 2000), at ~18,700 BP at the Silver Dollar site, Shark Bay (Bowlerd 1990) and at ~28,000 BP at Widjingarri shelter 1, west Kimberley, (O’Connor 1999:60, 121) establish an early archaeological context for use of boulder shell in northwestern Australia and its movement inland at least 70-100 km.

The dates for the Percival Lakes sites show that, over the last 20 centuries, boulder shell has been exchanged or traded into the heart of the Great Sandy desert, 400 km from the nearest potential source of these shellfish. These results imply the existence of a long-distance exchange system from at least this date, although it will obviously require much more data to determine the parameters and characteristics of this system.

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References

AN ADZE MANUFACTURED FROM A TELEGRAPH INSULATOR, HARVEY’S RETURN, KANGAROO ISLAND

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Introduction
A small, modified flake tool manufactured from telegraph insulator material was located along the north western coast of Kangaroo Island, at a place known as Harvey’s Return. The tool was hafted and has been well used during its active life and its working edge is illustrated in Figure 1. Residue analysis indicates a thick coating of resin, which cannot be specifically identified although Spinifex and Xanthorrea can be excluded (Loy 2002).

The tool is interpreted as a wood working tool, or adze and must post date the introduction of telegraphic services on Kangaroo Island, i.e. 1876. Such a find is relatively common on the mainland, although often overlooked, and Indigenous use of materials acquired from the overland telegraph line (wire, footings, insulators) caused Mr. Charles Todd (Superintendent of the line) as much grief as

Figure 1 The adze, showing the working edge and hafting resin (6.5x). Photo by Tom Loy.

Smith, M. A. and Finkhauser, B. 1996 An archaeological perspective on the geochemistry of Australian red ochre deposits: Projects for fingerprinting major sources. A report to the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra. (Department of Archaeology & Anthropology. The Faculties, Australian National University.


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