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Front cover: During late 2001 and early 2002 UQASU undertook salvage excavations of cemeteries at Lang Park in Brisbane as part of a $280 million redevelopment of the football venue. To date 387 burials have been exhumed. (Photograph: Dr Jon Prangnell, University of Queensland Archaeological Services Unit)
AUSTRALIAN ARCHAEOLOGICAL CONSULTANCY MONOGRAPH SERIES

Invitation to consultants to submit reports for consideration

The AACAI has approved the production of the Australian Archaeological Consultancy Monograph Series. Consultants are invited to submit major reports that reflect significant and strategic research and best practice in the disciplines of archaeology and cultural heritage management. The full range of consultancy activity is countenanced including regional survey, remote sensing, excavation, management and public education. Projects that display successful liaison and collaborative research initiatives with indigenous communities are encouraged.

Reports must be camera-ready for copying and have clearance from clients and stakeholders in terms of their ability to be circulated for wider publication.

Peter Veth
National President

The Laila Haglund AACAI Award

At the Hervey Bay 2001 AAA Conference a prize for the best consultancy paper was awarded for the first time by AACAI. The award has been named after Laila Haglund, in recognition of her considerable and ongoing contribution to professional archaeology in Australia (see December 2001 issue of the AACAI Newsletter). The paper was presented by Luke Godwin and was co-authored by Luke Godwin, Scott L’Oste-Brown, Bob Ellis and Mike Morwood. An abstract of the paper follows.

The National Executive Committee would like to congratulate the four authors for their insightful and high quality contribution to the proceedings of AAA.

A panel of three senior archaeologists placed within a cultural heritage agency, university and industry setting will be approached by the NEC to act as independent referees for the selection of the most promising report for production later this year. More than one high quality report may be selected during this round for future publication. It is not envisaged that the selected report(s) will be edited.

The reports should be posted with covering letter specifying clearances to: The Secretary AACAI, 25 Balfour Road, Austinmer, NSW 2515. Requests for further details on the selection process, likely format and distribution should be addressed to the President at the same address.

The NEC believes this is an exciting opportunity for practitioners to have their more substantive outputs showcased and importantly to provide guidance for earlier-career consultants. Significantly the reports will be available and undoubtedly purchased by a range of clients and heritage groups throughout Australia, helping to educate stakeholders about the desired standards of high quality consultancy work.

**BURIALS AND BUNDLES IN CENTRAL QUEENSLAND: DATES AND THOUGHTS ON CULTURAL CONTINUITY AND NATIVE TITLE RIGHTS**

Recently radiocarbon dating of six bark burial coffins from the Central Queensland Highlands indicates that this form of burial is of greater antiquity than had previously been suggested, dating back at least 800 years before present. A range of historical and anthropological evidence further demonstrates that this form of burial has continued through to the present, albeit in a modified form. This paper then moves to explore the implications of these data for Native Title claims and cultural heritage management. We initially formed a view that we could develop an argument of continuity of burial practice that would be of some importance in sustaining more general arguments of cultural maintenance and transformation in Central Queensland in relation to groups’ Native Title rights and claims. In light of recent Native Title decisions, however, we are no longer confident that this material, while apparently useful in underpinning such arguments, is likely to be compelling in a legal setting where Native Title is defined as a bundle of rights. In recent cases and appeals, Native Title generally has been interpreted as a bundle of rights. Where this is the case, sustaining arguments of cultural continuity could prove extremely difficult. Under this model other mechanisms of extinguishment could also come into play, possibly rendering arguments of continuity in a particular cultural practice irrelevant. In such circumstances, archaeological evidence needs to be linked to other types of data. It is our view that marrying archaeological, anthropological and historical data in the context of a well-structured legal strategy will provide the best means of developing effective arguments of continuity and support for ongoing NT claims.

Peter Veth
National President

**Conference Report**

*Barriers, Borders, Boundaries*
Australian Archaeological Association Annual Conference
6–8 December 2001
Hervey Bay, Queensland

The 2001 Australian Archaeological Association Annual Conference was held at the luxurious Kondari Resort in Hervey Bay, approximately 300 km north of Brisbane in Queensland. Sponsored by the Aboriginal and Torres Strait Islander Studies Unit and School of Social Science at the University of Queensland, it was the largest AAA conference since Gatton in 1995, with an official total of 212 registered delegates.

On the evening preceding the formal opening of the conference, a session on the State of the Discipline (convened by Ian Lilley) was held to discuss the status and future of archaeology in Australia, which had been the subject of some debate.
earlier in the year on AUSARCH-L. Various senior members of the discipline presented brief perspectives on what they saw as the major issues influencing contemporary archaeology in Australia, with a particular focus on the emerging impact of changes in university funding formulae.

Formal sessions covered a variety of topics. Papers were of a consistently high standard across all sessions. Session topics included: Regions and Boundaries: Archaeological Explorations of Regionalism, Localisation and Boundedness (Bryce Barker & Sean Ulm); Written in Stone: Regional, Temporal and Technological Boundaries in Stone Artefact Assemblages (Lara Lamb & Chris Clarkson); Archaeology of Isolation (Jon Prangnell); Boundaries of Archaeological Thinking (Annie Ross); Frontier-Games: Rock Art Variability in the Arid Zone (Jo McDonald); and the well-attended Reality of Barriers: The Evidence from Biological Anthropology (Colin Pardoe & Michael Westaway).

The Best Overall Paper Prize was shared by Ken Mulvaney for Snake Sisters and Their Imprint on the Landscape: Sacred Sites and the Changing Pattern of Petroglyphs and Martin Gibbs and Peter Veth for ‘Ritual Engines’: Archaeological and Historical Evidence for an Outflow of Western Desert Culture into Southwest Western Australia. June Ross won the Best Student Paper Prize for Rocking the Boundaries: Scratching the Surface. Luke Godwin, Scott L’Oste-Brown, Bob Ellis and Mike Morwood won the inaugural Laila Haglund AACAI Prize for Dating of Burial Practices in Central Queensland: Continuity and its Implications for Native Title, sponsored by the Australian Association of Consulting Archaeologists. The full program and abstracts of the conference are still available for viewing and downloading at:


or the hard copy is available for purchase from:


Post-conference commentary

The formal conference was followed by a recovery fieldtrip to Fraser Island where conference-wearied archaeologists basked in the recuperative powers of air conditioned buses and icy cold freshwater creeks. Other extra-curricula activities included a President’s 11 vs Queensland All-Stars cricket match, with the victorious All-Stars humbly accepting the trophy on the day.

The conference made an operating profit of
$10,900. Of these funds, $6800 was dispersed directly to students in the form of student subsidies ($5300) and poster prizes ($1500). A further $500 went to students for the Best Student Paper Prize out of Australian Archaeological Association coffers.

Preparation of the conference proceedings is well underway. The volume will be published in the *Tempus* series by the Anthropology Museum at the University of Queensland and should be available around November 2002. A resource page for proceedings contributors is available on the AAA website at: http://www.australianarchaeologicalassociation.com.au/conferenceproceedings/

### 2002 Conference

Organisation of the 2002 conference is well advanced. It will be held as a joint conference with the Australasian Institute for Maritime Archaeology (AIMA) and the Australasian Society for Historical Archaeology (ASHA) between 17-22 November 2002 at the Southbank Hotel and Convention Centre in Townsville, Queensland. The theme of the 2002 conference is *Land and Sea: Common Ground and Contemporary Issues for Australasian Archaeology*. Further details on page 25 of this newsletter and at:


### Acknowledgements

For help and support the conference organisers would like to thank Kondari Resort, the Faculty of Social and Behavioural Sciences and the Aboriginal and Torres Strait Islander Studies Unit at the University of Queensland, and the 2001 Australian Archaeological Association Executive. Finally, I would like to thank other members of the organising committee – Jill Reid, Catherine Westcott, Annie Ross, Luke Kirkwood, Ian Lilley and Jon Prangnell – for giving up mornings, afternoons, evenings and weekends to make it all happen.

*Sean Ulm*

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**Taphonomic experiments in the Hunter Valley**

### Background

Many open sites in the Hunter Valley show up in scalds and along eroding creek banks. The sediments from which they derive tend to be salty and highly dispersible. Quite a number of salvage projects have shown that their artefact content is likely to have moved about while embedded as well as after exposure, and that parts of an assemblage get lost over time. This is relevant to attempts to group open sites by their artefact content, be it in terms of technological features, ratios of materials or size groups represented. While we lack experimental data about processes of movement or loss it is difficult to apply our observations in formal analyses.
If certain processes affecting attributes or attribute complexes can be shown to proceed in an orderly and regular pattern according to identifiable rules and at measurable rates, allowance can be made for this when interpreting the data that may then retain a greater degree of interpretative value. It is equally important to consider whether effects of past or present processes seem too complex or irregular to allow such calculations. Interpretation of the Hunter Valley open sites is still constrained by lack of information on how its soil processes affect cultural material and contexts.

As part of a major salvage project for Warkworth Mining Ltd (WML) we were able to set up the experiments described below, hoping they would help to reduce or at least illustrate the extent and character of some of the perceived information gaps. Construction of a temporary dam could mean occasional inundation of several Aboriginal sites and salvage investigations were completed as part of consent conditions.

But this area was not to be mined for some years. After the salvage we were allocated some creek bank and flat with scalds in the site W6 area to use for our experiments. These were to stay in place, safeguarded by the mine, until future mining claimed the area. WML also constructed for us soil expansion monitors as permanent datum points unaffected by possible swelling or shrinkage of the sediments.

Buried items were placed in the ground in Area A.1 (an ‘island’ of compact sediments) in August 1995 and were retrieved in May 2001 (after circa 5 years and 10 months). Items were placed as surface scatters in Area A.2 (scalds and ‘islands’) in March 1995. Part of this was retrieved in March 1998, the rest in November 2001 (after 3 years / after 6 years and 8 months). The time allowed us proved too short, as feared. Could some organisation such as NPWS start a program of similar or complementary but more extensive and long term experiments in the various areas under their protection? Note that the precision now provided by a GPS would make a big difference. We had none, and struggled with an extensive grid cover (c. 850 metres by up to 140 metres for W6) and pegs regularly knocked about by cattle.

### Setting up the experiments

The experiments were preceded by investigation of local soil characteristics such as soil composition and behaviour, arranged by WML (Fahey 1993).

For the experimental work we used freshly made items similar in technology and material to artefacts from local Aboriginal cultural assemblages. All items were listed noting selected traits: size, thickness, weight, shape (rounded, pointed etc.), whether strongly ridged, chunky, irregular, smooth. Items to be scattered on the surface were divided into series and numbers engraved with a diamond tipped Vibratool. Some of the hardest materials, e.g. quartz and silcrete, did not mark well. The different series were coded with symbols shown in the tables and on the associated placement/recovery plans.

To aid identification, several series were also boiled in permanent ink (red or blue) with alum in an electric frypan for 24 hours, the liquid then allowed to evaporate and the dry rocks ‘baked’ for 5 hours. When placing items on the surface I tried to place those with similar numbers and traits at some distance from each other in case the dye faded.

**Area A.1:** Burying items to be retrieved without dislodging them from whatever position they might have reached was a complicated matter.

We covered an ‘island’ with a grid in metre units, then selected and marked a 25 cm strip in each of three adjoining units. Surface levels were recorded with reference to a soil expansion monitor. The turf was lifted from each 25 cm strip, making sure that the root mat was retained, and keeping it as a strip or a series of squares. The turf was placed on polythene and kept watered to keep the grass alive. Some underlying topsoil was then removed...
and stock-piled, till there was a 25 cm broad and relatively flat-bottomed trench along the western edge of each unit. The depth of this flat floor was also measured-in with a level, prior to placing the items in the trenches.

Five groups of ten items were placed in each trench. Each group was centred on one or two larger (>20 mm) and distinctive items, to ensure that individual groups could be recognised as separate entities. Plans and photographs recorded the groups. Stock-piled sediments were used to fill spaces between individual pieces and between the groups and patted down to keep them firmly in place. The rest of the stockpiled material was then spread across the three trenches to cover the groups and patted down to prevent disturbance when the turf was replaced. We left a 10 cm gap at the south end of each trench to ensure that we would later be able to cut straight down, feel for the base of the root mat and prise up the end of this, while cutting any new roots to avoid displacing underlying items. A metal peg was left in the ground for future reference and the retrieval grid later found to have been placed 5 cm too far south. This was taken into account in the plotting of results.

**Area A.2:** Placing the surface scatters was fairly easy. The area was pegged in metre units. A grid frame, subdivided into 10 cm x 10 cm units, was placed on the ground, over each metre unit to be used. The items selected for the experiment were placed at intersections, e.g. 10 cm east and 30 cm south, and the position recorded against that item in the artefact listing.

Grid pegs were hammered well into the ground as future check points for the recovery grid. The precaution was useful as a carefully reconstituted grid for the Area A.2 recovery was found to be 20 cm too far to the west. Recovery coordinates could be adjusted accordingly. A discrepancy of just a few centimetres would have affected patterns discerned in these experiments.

**Results of the taphonomic experiments**

**Area A.1:** The recovery plan worked well. The turf was lifted without disrupting underlying deposits. Underlying sediments were trowelled until the first signs of buried items appeared and were recorded. Sediment removal continued, taking care not to dislodge individual items. The blue dye had largely faded away but a blue tint was generally present on the down side of each item. (Dying hard and dense rocks such as quartz or silcrete is not the way to go if you wish to place items in the ground for periods of more than a few years.)

Whenever we reached a point where further digging would risk displacing some item, a grid was placed over the trench, visible items plotted on graph paper, labelled and collected into labelled bags. This sequence was repeated if needed. Most items were recovered (but four chips caught in sieves and four lost to outside the trenches).

The surface level had remained the same in relation to the datum – but all items were recovered from levels somewhat higher (1–2 cm) than the trench floor at deposition! These sets of readings were probably due to swelling of the underlying clay after a period of wet weather, combined with some loss of top soil over the trenches, also due to rain.

The general impression was one of little change. The main effect observed was a slight outward flow of some items towards a lower surface. Items recovered were grouped according to extent of horizontal movement recorded and each group analysed with regard to traits listed:

- **Group I (moved > 5 cm):** items were small, thin and light, mostly in the < 20 mm x < 3 mm x < 0.2 grams category. The four chips recovered from the sediments and the four not recovered at all also belong here. The items could be rounded or pointed and some were thin bladelets.
- **Group II (moved 1–5 cm):** size range remained similar with some increase in weight and thickness. Most items were < 30 mm x < 9 mm and weighed < 2 grams. Pointed blades dominated, some strongly ridged so that the cross section was triangular.
Group III (no movement from place) shows a wider range of dimensions and includes all heavy items. The biggest item was 32 mm thick and weighed 76.4 grams. Although these items generally had remained where placed, some had twisted somewhat on the spot, Group V: most clearly so. Its long axis had swung round by c. 30°.

The assumption that small, thin and fairly flat items would move more easily appears self-evident but also accurate.

It seems possible that a triangular cross section, implying a smooth bulbar face and a keeled dorsal face, combined with a pointed distal end, could assist movement through sediments. Chunky items, even if fairly small, appear to resist movement within sediments.

Area A.2: By November 2001, rain had caused some additional erosion and there was a cover of grass and woody weeds over much of the scald, hiding surface items from view. We trimmed the vegetation with secateurs, as close as possible without disturbing surface items. A metre grid was then laid out over the area, re-establishing the original units as closely as possible. Now-visible surface items, nestling among plants or partly embedded in the silt, were then collected into separate bags marked with unit and coordinates (to the nearest centimetre), symbol, number and position on/in sediments.

Of the 23 items placed on the surface of one unit, we recovered 10 from the 2001 surface. New vegetation on this scald had trapped silt washing down from the eastern slopes. Using trowels we scraped away about 20 mm of silt, cutting and removing the carpet of roots and progressing slowly to be able to recognise, plot and collect embedded items as they appeared.

After the first scrape, selected quadrats were given a second scrape, using a sharp edged shovel to peel off some 10 mm of silt and 10 mm of clayey silt. A few items were found between the redeposited silt and the clay. In the years since 1995, there had been little down-cutting of the scald surface but some re-deposition of erosion from the ‘islands’ and from the eastern slopes.

One unit included a westward ‘island’. After collection of surface items, plant remains were removed and the underlying silty deposit excavated in 20–25 mm spits. The deposit contained an extensive nest of small black ants, much annoyed at the disturbance, which made the excavation quite uncomfortable and difficult. Their activity was centred in the northern part, and here sediments were loose and full of narrow tunnels. A few items placed on the grassy surface were excavated from underlying sediments. Some were just below the surface and tilted as if slipping, but a couple were found 30 mm and 50 mm down.

Plans of Area A.2 were revised to include recovery positions when known. Of the 91 items placed on the surface of metre units 326/G, 326/K and 328/H we recovered about half (45 items + fragments without numbers but with traces of dye). Twenty tiny chips (not numbered) placed on the surface, in clusters of five, had largely disappeared – only one chip was recovered.

Deposition and recovery positions were linked, distance moved calculated and direction noted. Items deposited were then grouped in terms of original position to see if some observed effects might be linked to a placing on the grassy surface of the fairly well drained and stable ‘island’; on the very edge of a scarp or the unstable slope just below; or on the smooth (and in wet weather probably slippery) clayey/silty surface of bare scalds.

On ‘islands’ a move inward (away from the scarp) was almost as common as the opposite. For unit 326/K this could also mean moving against the flow of surface drainage from the east. Some items were nestling in the grass, probably pushed from the surface as this grew.

Items placed in a less stable setting, on the edge of a scarp or the slope below, also provided some surprises. Six of ten items had moved down-slope as the scarp...
receded, but four had also moved diagonally, most items then becoming embedded in redeposited silt. The numbers are small and the causes could include roots or twigs or scrapes by some animal's foot deflecting a flow down slope.

The third group, placed straight on the scald, was equally surprising. Visible drainage lines, showing as a shallow scar in the surface, had been plotted as the items were placed. Their directions were consistent with the topography and seemed stable. Though wash appears to be one agent moving items on the scald, backwash effects seem unlikely as it was not inundated. However, more than two thirds of the items had moved aslant/against the plotted flow. The ‘blanket’ of vegetation with redeposited silt formed uneven low humps that may have deflected water and so caused some of the ‘across or against the flow’ movement. Cattle can also be suggested as likely agents, be it by pushing pieces around or by picking up clods of clay with embedded rocks on their hooves and dropping them elsewhere.

Each group was then analysed with regard to movement and traits and some trends appear to emerge:

- Items not recovered were, in all three groups, mostly described as small and light. They may have been washed right outside Area A.2.
- Thin items or margins have often been broken.
- On the ‘islands’ items moving up to 5 cm are fairly equally distributed over wide size and weight ranges, but numbers and ranges reduce somewhat with distance moved.
- Also, larger pieces could move some distance if tumbling with collapsing scarps and/or kicked by animals.
- Items excavated from an ant nest are medium size and medium heavy.
- On the scalds no trends could be distinguished when comparing the total range of size and weight with distance or direction moved.
- Traits relating to shape seem equally non-diagnostic. A few more pointed flakes and blades have moved more than 5 cm – but numbers may be too low to be meaningful.

**Summary comments for Area A.2**

With regard to items placed on the surface, they are more likely to disappear and/or be damaged if they are fairly small, thin and light. Wash may have been a major agent for movement, but not the only one. Beyond a thickness of 3 mm and a weight of up to 2 grams, variations in thickness, weight or shape seem to have made little difference.

In Area A.2, the main, or at least quite important, agents of movement may have been live creatures such as ants and cattle, rather than physical forces such as water flow. However the gradual erosion and collapse of scarp margins did contribute some movement.

**Additional Comments**

Aboriginal heritage locations often adjoin and/or contain shallow farm dams that mostly impinge on the archaeological material. Our initial but unfulfilled expectations included observing repeated flooding, allowing sediments to become water logged and soft and more likely to take imprints of animals walking on the surface. During earlier salvage, having found hoof marks on silty clay below topsoil, we expected to see effects of cattle trampling.

We expected stone artefacts to move more easily through layers of water-softened sediment. But unaided downward movement appears too slow to register in the time we had available. For scalds Fahey (1993) developed a model showing how an inversion of artefact stratigraphy could take place. This model was based on observed progression of scalds away from the creek. Underlying principles appear sound but also the rate at which inversion may happen appears too slow to show up in our experiments.

The presence of water (from rain and run-off) was, however, noted as an important agent in artefact movement and observed in relation to water-flow over or through
sediments. Effects noted in relation to the experiments were:

- gradual inward movement of scarps or sudden collapse if steep;
- deposition of silt when flow was slowed by vegetation;
- transport of small knapped items, particularly those < 20 mm in size and < 2 grams in weight.

Artefact movement in or on sediments appears to be influenced by a combination of flow and artefact traits:

- **Horizontal movement** within a deposit or on a surface of silty clay may be induced by drainage/slow seepage towards a somewhat lower surface. Such movement appears assisted (to some small degree) by a pointed shape, fairly thin and combined with a smooth lower face and a keeled upper face. Horizontal movement on a fairly smooth and perhaps slippery surface may not follow apparent flow lines. Sideways push by swirling water, backwash and temporary changes in flow due to some obstacle such as a plant, rock or piece of wood are probable explanations.

- **Vertical movement** through a deposit would normally be slow but could be speeded up considerably by bioturbation, for example the activities of ants, as shown in Area A.2.

- On the other hand chunky or irregular artefacts (with several projections) appear to resist movement within sediments. Outside the experiment areas, chunky artefacts had been noted as affected by water-flow, particularly in areas of gullying erosion. The effects could often be seen to result from a gradual undermining or removal of surrounding and underlying sediments, leading to collapse and movement.

Observations from other sites in the mining lease may be added to broaden the range of potential agents:

- Various small creatures, such as ground-living spiders, can loosen and shift sediments, also moving embedded artefacts.
- Hollows and channels in the surface of the clay horizon may be created by decaying roots or burrowing animals or insects. But they can also be created by sub-surface water-flow, e.g. if moisture drains down onto a less permeable surface and starts moving along this.

**Conclusions**

The results of the experiments are tentative and limited, but show the validity of our concern that wherever stone artefact assemblages are exposed to erosion and wash or adjoin such areas or drainage lines, they are likely to have lost a portion of the original assemblage. This is relevant to any attempt to arrange assemblages into sequences reflecting time and development of cultural traditions, using variations in raw material frequency, technological traits relating to reduction techniques or items distinguished by shape, retouch and/or use-wear.

For example:

- materials such as quartz, which in reduction tend to produce much small and thin debitage, may be under-represented;
- local core reduction, in stable sites indicated by plentiful small debitage, may be under-represented;
- local preparation of backed artefacts, in stable sites indicated by easily lost, tiny backing debitage may be under-represented;
- backed artefacts, mostly small and thin as well as pointed, may have been lost at a greater rate than larger implements, so skewing the ratios.

Factors of distortion not addressed here include some considered in White’s artefact analysis:

- removal of cores/implements for further reduction/use elsewhere;
- individual knapping/use events limited to producing/using some specific tools out of the range normally used by that group of people.
Calibrating Marine Radiocarbon Dates: A Guide to Australian $\Delta R$ Values

Introduction

Every year hundreds of radiocarbon dates are obtained on Australian marine shells and corals by archaeologists and geomorphologists. As a first approximation it is common practice to correct these dates for marine reservoir effect by simply subtracting a generalised factor of 450 ± 35 years to make them comparable to coeval terrestrial (e.g. charcoal) samples.

Gillespie calculated this correction value in the 1970s (see Gillespie 1975; Gillespie and Polach 1979; Gillespie and Temple 1977). Since that time several studies have suggested the possibility of significant deviations in regional marine reservoir signature from this generalised value (e.g. Hughes & Djohadze 1980; Murray-Wallace 1996; Spennemann & Head 1996; Ulm et al. 1999; Woodroffe & Mulrennan 1993; Woodroffe et al. 1986:75, 77).

In the time that has elapsed since Gillespie’s pioneering study, researchers have gained a much more sophisticated appreciation of the complexity of global marine carbon reservoirs. One of the most significant developments was the calculation of a global model of marine $^{14}$C activity that enabled the calibration of radiocarbon dates obtained on marine samples, including the ability to account for regional differences from the global model with the input of a local/regional $\Delta R$ value (Stuiver et al. 1986). Reimer and Reimer (2000, 2001) recently summarised all of the available global $\Delta R$ values in a world wide web database.

In this paper, I briefly discuss the principles of marine reservoir correction before presenting a guide to regional and subregional Australian $\Delta R$ values extracted from the Reimer and Reimer (2000, 2001) database and recent work presented in Ulm (2002).

Background

A basic assumption of the radiocarbon dating method is that the concentration of radioactive carbon ($^{14}$C) in the biosphere is uniform through space and time. Early in the development of the radiocarbon dating method, however, it was recognised that marine shells exhibited a systematic age difference to contemporary terrestrial samples on a regional basis that allowed calculation of a regionally specific age offset.
Global variation in marine reservoir effects evident in marine shell carbonates are principally caused by incomplete mixing of upwelling water of ‘old’ inorganic carbonates from the deep ocean where long residence times (>1000 years) cause depletion of $^{14}$C activity through radioactive decay, resulting in very old apparent $^{14}$C ages (Mangerud 1972). Estuarine reservoirs are even more complex with the interaction and incomplete mixing of $^{14}$C from both terrestrial reservoirs and marine reservoirs from tidal action (e.g. Little 1993).

Regional differences in marine reservoir effect are generally determined through one or a combination of three methods:

1. direct radiocarbon dating pre-AD 1955 live-collected shell specimens of known historical age;

2. radiocarbon dating shell/charcoal paired samples from high integrity archaeological contexts that are assumed to be contemporaneous;

3. radiocarbon dating and/or paired radiocarbon and uranium-thorium ($^{230}$Th/$^{234}$U) dating of live corals or long-lived live shells with clear annual growth bands.

In the first method, marine shell specimens of known historical age must be live-collected prior to AD 1955 and the date and location of live-collection known with confidence. After AD 1955 natural levels of $^{14}$C activity in marine environments were enriched as a result of detonation of nuclear and thermonuclear weapons in the atmosphere. Dating shell/charcoal paired samples is potentially problematic because it must be assumed that the samples selected are contemporaneous and that association is not simply the result of post-depositional processes, excavation procedures or erroneous interpretation. Therefore such data need to be considered carefully on an individual basis. Owing to these problems $\Delta R$ values calculated from shell/charcoal pairs are not included in this guide (or in the Reimer and Reimer database). Recent studies have demonstrated that radiometric dating of certain coral species with well-defined annual growth structures can provide the most accurate determination of local marine reservoir effects (Reimer and Reimer 2000). Unfortunately, few such coral studies are available and they are limited largely to tropical regions with long-term coral records.

In recent years, regional marine reservoir effect has commonly been expressed as a $\Delta R$ value (e.g. Higham & Hogg 1995; Phelan 1999). Stuiver et al. (1986; Stuiver & Braziunas 1993; Stuiver et al. 1998) modelled global marine $^{14}$C activity using a simple box diffusion global carbon cycle model of marine reservoir responses to variation in atmospheric $^{14}$C activity. Regional deviations from the modelled marine calibration curve ($\Delta R$) were calculated using radiocarbon ages on live-collected marine shell samples of known historical age (Stuiver et al. 1986: Table 1). $\Delta R$ is the difference between the conventional radiocarbon age of a sample of known age from a specific locality (P) and the equivalent age predicted by the global modelled marine calibration curve (Q); therefore $\Delta R= P-Q$ (Stuiver et al. 1986: 982).

Once calculated, the $\Delta R$ value can be applied to marine calibration curves to calibrate dates obtained on marine shell (and other marine-derived sample materials such as fish bone, marine mammal bone etc.) for specific regions. The $\Delta R$ value can also be used in widely available computer calibration programs such as CALIB (Stuiver and Reimer 1993) and OxCAL (Bronk Ramsey 1995).

**Australian $\Delta R$ Values: A Guide**

for Northeast, North and Northwestern, Southern and Southeastern Australia (Figure 1, Table 1). These regional values combine between two and 11 individual ΔR values and cover very broad geographical regions composed of potentially different marine reservoir conditions. Therefore, in addition to the regional ΔR values I have calculated subregional ΔR values where two or more individual ΔR values are available for a specific area (Table 2). Like the regional values, the subregional ΔR value is the error-weighted mean of the values available. Error-weighted means were calculated using the procedures and methods outlined by Ward and Wilson (1978), with all sample groups presented forming statistically indistinguishable groups.

Figure 1. Map of Australia, showing regional and subregional ΔR values. ΔR values in bold denote regional values. Those without bold are subregional values.

Table 1. Regional average ΔR values (after Reimer and Reimer 2000; Ulm 2002).

<table>
<thead>
<tr>
<th>Region</th>
<th># ΔR Values</th>
<th>Regional Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast Australia</td>
<td>12</td>
<td>12±7</td>
</tr>
<tr>
<td>North &amp; Northwestern Australia</td>
<td>9</td>
<td>64±24</td>
</tr>
<tr>
<td>Southern Australia</td>
<td>11</td>
<td>61±29</td>
</tr>
<tr>
<td>Southeastern Australia</td>
<td>2</td>
<td>-1±70</td>
</tr>
</tbody>
</table>
Table 2. Subregional average $\Delta R$ values (after Reimer and Reimer 2000; Ulm 2002).

<table>
<thead>
<tr>
<th>Subregion</th>
<th># $\Delta R$ Values</th>
<th>Subregional Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torres Strait</td>
<td>3</td>
<td>49±45</td>
</tr>
<tr>
<td>Gulf of Carpentaria</td>
<td>2</td>
<td>52±42</td>
</tr>
<tr>
<td>Kimberley Region</td>
<td>7</td>
<td>74±34</td>
</tr>
<tr>
<td>Southwest Western Australia</td>
<td>4</td>
<td>66±46</td>
</tr>
<tr>
<td>Spencer Gulf</td>
<td>5</td>
<td>58±47</td>
</tr>
<tr>
<td>Gulf of St Vincent</td>
<td>2</td>
<td>55±60</td>
</tr>
<tr>
<td>Central Queensland</td>
<td>7</td>
<td>10±7</td>
</tr>
</tbody>
</table>

Discussion

The choice of a particular $\Delta R$ value to calibrate a particular radiocarbon date must be based on a consideration of the environment in which the sample material was formed. For example, in a study of $\Delta R$ values for a number of estuaries in central Queensland I recently calculated estuary-specific values of up to $\Delta R$ = -155 ± 55 (see Ulm 2002 for detailed discussion). In this case, the blanket application of the regional or subregional $\Delta R$ value would have produced calibrated ages approximately 200 years too young.

In the absence of additional information, it is assumed that temporal changes in $\Delta R$ for a specific region coincide with changes in the global model ocean (Stuiver et al. 1998: 1135). Time-factored $\Delta R(t)$ ($t$=time) values can be calculated through large-scale studies of annual coral records and/or paired shell/charcoal samples from a variety of time periods (e.g. Kennett et al. 1997; Ingram 1998).

A quick perusal of Figure 1 will highlight major gaps in the availability of $\Delta R$ values for the Australian coast. These gaps pose significant issues for regions such as coastal New South Wales where numerous coastal shell midden deposits have been excavated and dated on the basis of marine shell samples with no local $\Delta R$ values available.

References

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Becoming Human

By Richard Fullagar

In contrast with the early evidence of anatomically modern humans out of Africa by 100,000 years ago (and some would argue into Australia by 60,000 years ago), the first convincing and widespread trace of modern human behaviour out of Africa seems to arrive in an archaeological instant. About 40,000–50,000 years ago, an extraordinary burst of artistic activity and new tool kits flood the older and highly stable technologies of earlier human groups. In Europe, so rapid and dramatic were the changes that many scientists believe the older human groups, the Neanderthals, simply could not compete and became extinct. In a meticulous review of African archaeology, Sally McBrearty (University of Connecticut) and Alison Brooks (George Washington University) argue that the rapid changes in Europe, the Middle East and elsewhere obscure the very long and gradual history of modern human behaviour in Africa.

African archaeology challenges the idea of a modern ‘human revolution’ (in the sense of behaviour) and suggests more gradual and episodic phases of technological and artistic development. For example, in a long list of modern behaviours, McBrearty and Brooks point out that production of stone blades, points, grindstones and use of ochre are older than 200,000 years; by 100,000 years ago there is evidence for fishing, exchange, delicate bone tools, barbed points and other decorative items; and microlithic tools, beads and artistic images appear between about 40,000 and 70,000 years ago.

Does the evidence indicate gradual behavioural evolution within Africa and more of a revolution outside? McBrearty and Brooks argue that the sudden changes that appear less than 50,000 years ago out of Africa did not emerge indigenously, but are a consequence of rapid migrations. Therefore this cannot be called a revolution at all. The researchers suggest that the
apparent time lag between anatomically and behaviourally modern humans in the Middle East and elsewhere is more a reflection of the discontinuous and limited nature of the archaeological record. For example, it is almost impossible to distinguish the stone tool kits of anatomically modern and archaic humans from 100,000-year-old sites in the Middle East, but there are in fact rare traces of modern human behaviour among the first earliest modern humans to escape from Africa. A recent study of the hand bones indicates that the modern human groups used hafted tools in more sophisticated ways than their contemporary archaic cousins (see ‘Taking a Grip on Early Human Tools’, Nature Aust. Summer 2001–2002).

And what about the Australian evidence? An early human colonisation of Australia (a modern act in itself because it required sea crossing and language) by 60,000 years ago appears to be out of whack with the timing of modern human behaviour elsewhere (although perhaps consistent with the chronology of other modern anatomical data). Many are therefore cautiously sceptical of an early human arrival in Australia (see ‘A Matter of Time’, Nature Aust. Spring 2000). Others argue for an earlier presence of apparently archaic humans (who may have been a lot smarter than previously thought). Still others believe that all of these contemporary archaic and modern human groups really formed a single widespread interbreeding population. The trouble is, until about 50,000 years ago, definitive evidence for the earliest of modern human behaviour out of Africa remains archaeologically elusive.


Pyramids Mimic Bird Calls

By Richard Fullagar

When tourists clap their hands at the base of the steep limestone staircases that climb the outside walls of the Mayan pyramid known as the Temple of Kukulkan (at Chichén Itzá, Mexico), a curious bird-like echo is produced.

Intrigued by such reports, David Lubman, an acoustical consultant from California, decided to visit the 1300-year-old site for himself. One look at the structure of the staircases (completed about 900 years ago) made it clear to him how such a distinctive echo could be produced. The hundred or so evenly spaced steps give rise to periodically spaced echoes, and these produce the tonal sounds heard by visitors. The steps have relatively high risers and short treads (the part where you put your foot). Although sound is echoed from each of these step-faces, acoustical engineering predicts that the individual echoes produced first from the lower, closer steps will be higher in pitch compared to those from the progressively higher and more distant steps. The result is a rapid succession of echoes descending in pitch that sounds remarkably like the chirping of a bird.

Is the bird-like echo an accidental by-product of pyramid design? After all, buskers in today’s cities often choose to perform near bridges or steps to enhance acoustics, even though the original architects did not anticipate these uses. However, Lubman thinks otherwise. He believes the pyramid stairs were intentionally built for their peculiar sonic properties.

The echo is reminiscent of the cry of the Resplendent Quetzal (Pharomachrus mocinno) – the national bird of Guatemala. This magnificent bird, now critically endangered, was considered sacred by the Mayan people. Indeed, it is often depicted
with the mythical human-like figure of Kukulkan. When Lubman compared sonographs of the echo with that of the bird, he found a remarkable match. (If you want to listen to it for yourself, click on ‘Quetzal bird chirps’ at http://www.ocasa.org/MayanPyramid.htm.)

Lubman believes that the Mayan people incorporated the quetzal-like cries into the sacred ceremonies conducted at the pyramid. Although there is no other evidence that the Mayans used quetzal cries in their ceremonies, the idea certainly sounds good and archaeologists applaud the research.


The Three Gorges Dam, Yangtze River, China: a brief note on some archaeological ramifications

By Tessa Corkill

On a recent boat trip up the Yangtze River in China we visited the site of the Three Gorges Dam, the first stage of which is due for completion next year, when flooding will commence. The wall of this massive Dam will eventually be 185 metres high and 2 kilometres long. It will create a reservoir 600 kilometres long and will cause the relocation of around 1.5 million people, submerging 13 cities, 1352 villages, 657 factories and nearly 250,000 hectares of cultivated land. Evidence of the relocation of local inhabitants from settlements along the river between the dam site and the city of Chongquing (the reservoir’s upstream extent) was manifest everywhere – buildings were being demolished or blown up and new ones were under construction higher on the hillsides, the last crops of vegetables were being planted on riverside silt banks before they disappeared forever.

The area has been inhabited over many millennia by many and diverse cultural groups – and as a result innumerable archaeological sites from all ages will be lost, either by inundation or destruction, following completion of the dam. The Chinese government is currently funding archaeological investigations that include recording and relocation of sites and relics throughout the affected area – for example we saw excavations of tomb sites underway in one area and the removal of Song dynasty rock inscriptions in another. However, many sites, such as the Trackers’ Paths alongside the main river and the remains of an ancient brine pipeline along the tributary Daning River, will disappear for ever.

The Trackers were labourers who, for well over 1000 years - until they were superseded by steam power - hauled freight junks upstream through the rapids. Three or four hundred harnessed Trackers were sometimes needed for the largest cargo boats. Part of an 8th century poem gives a compelling picture of the gruelling drudgery involved:

Midnight on the dikes, there’s snow and there’s rain,
From up top our orders: you still have to go again!
Our clothes are wet and cold beneath our short rain cloaks,
Our hearts’re broke, our feet’re split, how can we stand the pain?
Till break of dawn we suffer, there’s no one we can tell,
With one voice we trudge along, singing as we pull.

Wang Quian (768-833)

The bamboo brine pipeline and plank walkway alongside the Daning River were first constructed in the Han dynasty, and recorded in the Annals of Wushan County in 246 BC. They stretched for 100 kilometres along the river, bringing brine from its source, to be transported via junks on the Yangtze to other parts of China. Today, all that remains are 6000 square holes, cut into the rock face to support the planks and pipes. In the 17th century the pathway was destroyed by the imperial army, after having been used by peasant leader Li Zicheng in his uprising against the Ming dynasty.

There is now an educational facility at the Three Gorges Dam site that includes a model of the dam and other informative material. There is also a large monument, around the base of which are sculpted various relevant features of Yangtze Gorge history. The photo (taken by John Edgar) shows part of a frieze of trackers engaged in hauling junks upriver. Above them are figures which appear likely to be copies of prehistoric rock art; unfortunately I was unable to discover anything about their provenance or other details.

Published Sources:


Heritage at Risk 2001/2002
ICOMOS World Report on Monuments and Sites in Danger

ICOMOS has recently published the second world report detailing threats to our cultural heritage. It includes over 70 separate contributions, recording Heritage at Risk in over 60 countries across the globe. It is currently available on the web: www.international.icomos.org/risk/2001/ or can be ordered (at no cost) in hard copy from the International Secretariat in Paris: secretariat@icomos.org

The report production is coordinated by a taskforce from Australia (Sheridan Burke), Canada (Dinu Bumbaru) and Germany (Michael Petzet, the current international president of ICOMOS). The inaugural (2000) edition was edited by Marilyn Truscott, who many would know as an archaeologist from Australia, and I edited the 2001/2002 edition and am currently working on the 2002/2003 edition. This necessitated spending some 4 months in Paris last year, and will require that I spend another 3 months there later this year – after I finish doing my PhD fieldwork in Thailand, where I am living at the moment. (I shall dwell no further on this other than to pass on assurance that my life is not simply a haze of temples, towers, croissants and tom yum.)

The Heritage at Risk program was endorsed by ICOMOS members at the General Assembly in Mexico in 1999. The aim of these reports is to identify threatened heritage places, monuments and sites; to present typical case studies and trends, and to share suggestions for solving individual or global threats to our cultural heritage. Each year an invitation is made to all ICOMOS National Committees, International Scientific Committees and ICOMOS’ world-wide professional network, to provide short reports outlining risks in their country or area of expertise including case studies. On one level it serves as an urgent appeal to the world public to commit itself to saving our cultural heritage more than ever before. The need for this is highlighted dramatically by the preceding article, written by Tessa Corkill, about the situation in China.

Although the types of threats that are revealed in the 2001 Heritage at Risk report are very diverse a number of themes stand out. These include the effects of globalisation, military activity and political change; the displacement and forced migration of people; and poor or lacking protective heritage legislation. The report clearly shows that in every case, the need to influence owners, investors, organisations and corporations, the public and governments of all types about heritage at risk is the single most important factor in achieving successful conservation results for heritage places.

Of particular interest is the ‘Archaeological Sites at Risk’ report prepared by ICAHM (the ICOMOS Committee on Archaeological Heritage Management) which can be viewed at www.international.icomos.org/risk/icahm/2001.

The report identifies a number of threats to the worldwide archaeological heritage, including:

- loss of in situ excavated archaeological heritage
- loss of unidentified archaeological heritage
- loss of archaeological potential
- loss of diversity of archaeological heritage
- loss of local ownership of archaeological heritage

It also includes a number of case studies,
one being the First Government House site in Sydney. The others, in Hungary and South Africa are equally interesting.

If anyone would like further information please either visit the website

Jane Harrington

AROUND THE COUNTRY – REPORTS & NEWS

Launch of New AAA Website

The Executive of the Australian Archaeological Association is pleased to announce the official launch of the Association’s new website at:

www.australianarchaeologicalassociation.com.au

The site features:

- Contact details for Committee and Subcommittee members
- Contents (and some full text articles) of the journal Australian Archaeology
- Thesis abstracts recently published in Australian Archaeology
- Book reviews recently published in Australian Archaeology
- Member login facility to check and update membership details
- Extensive page of weblinks
- AAA Code of Ethics
- AAA Constitution

This is the first version of what we hope will be a useful site to AAA Members and others with an interest in archaeology in Australia.

Feedback and contributions are welcome. Please email our Webmaster at: webmaster@australianarchaeology.com

AAA - Archaeology Week 2003

Many people are interested in archaeology and enjoy learning about the past from research undertaken across the world, but few are aware of the fascinating archaeology that can be found in their own backyard/region.

It is intended that 2003 will see the launch of Australian Archaeology Week (AAW), the primary focus of which will be to increase public awareness of Australian archaeology, and to promote the importance of protecting Australia’s unique archaeological record.

AAA is in the process of establishing a subcommittee for AAW whose function will be to develop a nationwide program of events. Working groups are currently being established for each state and involve a cross range of enthusiastic consultant, public, academic, museum and state archaeologists. In addition to the week’s events, there are plans to develop many other programs and activities including public lectures and seminars, exhibits, and (possibly) demonstration excavations.

If you are interested in contributing to this exciting new initiative, please do not hesitate to contact Michael Westaway via email on: m.westaway@nma.gov.au
AUSTRALIAN HERITAGE COMMISSION

Progress of proposed new Commonwealth Heritage Regime
Updated April 2002

The 1997 COAG Heads of Agreement agreed to the rationalisation of the existing Commonwealth-State arrangements for the identification, protection and management of places of heritage significance through the development of a cooperative national heritage places strategy, which was among other things, to set out the roles and responsibilities of the Commonwealth and the States.

Since this time the Commonwealth has clarified its role through the development and implementation of the Environment Protection and Biodiversity Conservation Act 1999 and the proposed new amendments on heritage, which will give greater focus to Commonwealth activities through the establishment of a National Heritage Places List and a Commonwealth Heritage Places List.

In December 2000, the Government introduced a package of Bills to implement a new heritage regime. In September 2001 the former Federal Minister for the Environment and Heritage, Senator Hill, met with the National Cultural Heritage Forum to discuss important issues associated with the Heritage Bills.

The Bills were before the Senate awaiting debate at the time the election was called. A number of amendments will be made to the Bills to implement the Government's election commitments and to reflect the considerable progress made in discussions between the former Minister for the Environment and Heritage, Senator Hill, and the peak Ministerial advisory group (the National Cultural Heritage Forum).

The new provisions in the redrafted Bills will include the ability to list heritage places overseas, and implement election commitments in relation to the Register of the National Estate and adopting best practice heritage management approaches by Commonwealth agencies as recommended in the Schofield Report. It is anticipated that the Government will reintroduce the Bills into the Winter Session Parliament in June 2002. For more details see: http://www.ahc.gov.au/infores/publications/newheritage.html

New Chair Appointed

The Government has appointed Mr Thomas Harley, a Vice-President with BHP Billiton Ltd, as the new Chair of the Australian Heritage Commission. Mr Harley has been President of UNICEF Australia since 1996, was appointed to the National Environment Education Council last year and is a former Trustee of the Old Treasury Building Melbourne. He is also a member of the Advisory Board for the Centre for Arab and Islamic Studies, Australian National University and a trustee of the Alfred Deakin Lecture Trust. Mr Harley replaced the former Commission Chair, Peter King.

New projects: Tracking the Dragon

Chinese people have been arriving in Australia for almost 200 years, however knowledge of their activities in Australia and the places linked with them is patchy. The Australian Heritage Commission has prepared two new publications to help individuals, community groups and heritage professionals to find and assess heritage places that tell the story of Chinese life in Australia.

The community focused publication - Tracking the Dragon - a guide for finding and assessing Chinese Australian heritage places is now available in print and on the AHC website. The website also includes an internet-only publication called A toolkit for researching and assessing Chinese Australian heritage places.

Australia's rich store of Chinese heritage places should become more widely recognised with the help of this new guide,
Tracking the Dragon. Launching the guide in Canberra, the Minister for the Environment and Heritage Dr David Kemp MP said, ‘Australia has almost 200 years of Chinese settlement, which has left us with fascinating heritage sites, many of which are still largely unknown for their Chinese links. This new guide will help Australians to uncover the hidden history of these special places.’

‘Australia has relatively few places that are widely recognised as reflecting the heritage of one of its most successful and long-standing migrant groups,’ Dr Kemp said.

‘These new publications aim to provide practical step-by-step guides to help individuals and communities around Australia identify our Chinese heritage places.’ He also commented that ‘It is important for the nation as a whole, that these places are found and their significance in our history is understood.’

SOUTH AUSTRALIA

Visit shipwreck sites at Port Adelaide

Many South Australian shipwrecks lie on the bottom of our oceans accessible only to divers. Yet, in the quiet backwaters of Port Adelaide the remains of over 40 ships, ranging from majestic windjammers to coastal traders and harbour craft, can be viewed by non-divers. Heritage SA has recently released a well-documented and stimulating brochure interpreting the sites and history of these shipwrecks. You can pick up a free brochure of Port Adelaide Ships’ Graveyards from:

The Environment Shop – Phone: (61 8) 8204 9191
Heritage SA – Phone: (61 8) 8204 9245
The Port Adelaide Visitor Information Centre – Phone: (61 8) 8447 4788

Garden Island Ships’ Graveyard Maritime Heritage Trail

The North Arm of the Port River is the site of Adelaide’s newest heritage tourism trail - the Garden Island Ships’ Graveyard Maritime Heritage Trail. Officially launched in October 2001 by the then Minister for Environment and Heritage, this maritime trail highlights the unique collection of abandoned vessels which lie on the southern shore of Garden Island. Their remains represent a connection to maritime activities from 1856-1945 and constitute one of the most diverse ships’ graveyards in the world.

The Garden Island Ships’ Graveyard Maritime Heritage Trail was developed by Heritage SA, with part funding provided by Coastcare. It is the latest in a series of trails established along the South Australian coast and River Murray for the promotion and protection of the State’s maritime history.

The Garden Island Ships’ Graveyard is the largest shipwreck site in Australia which is accessible to non-divers. Its interpretation includes 6 signs and a 50-page guide book with photos, location map and stories of the vessels. Three of the signs have been installed on piles in the North Arm, adjacent to the main group of wrecks. These are the first interpretation signs in Australia to be placed on-water and are accessible from boats and kayaks. A further two signs have been installed at the Garden Island Boat Ramp, with a sixth at the Adelaide Speedboat Club.

The booklet Garden Island Ships’ Graveyard is available for $9.90 (including GST) from the Environment Shop. Further information about the Garden Island Ships’ Graveyard or other Maritime Heritage Trails is available from Heritage SA on (61 8) 8204 9245.

VICTORIA

Protecting Melbourne’s precious Archaeological history

About 800 historical archaeology sites are located in the Melbourne city area. Some of these sites relate to the earliest stages of Melbourne’s settlement; others are relics of the gold rush or the flourishing years of Marvellous Melbourne in the 1880s. The
history of the city, and the great events that shaped Melbourne’s development are reflected in the archaeological relics that are buried beneath the modern streetscape.

The Heritage Act protects all historical archaeology sites in Victoria. Heritage Victoria has created a plan of the Central Business District that identifies all sites that have the potential to contain archaeological remains. The plan identifies areas that have a high level of archaeological potential and areas that have more moderate potential. The plan also shows sites where archaeological excavation work has taken place. In recent years, excavation work in the city has become increasingly common, resulting in a better understanding of Melbourne’s early history and material culture.

The archaeological record of early Melbourne is an important, irreplaceable and delicate resource. Heritage Victoria is committed to ensuring that archaeological sites in Melbourne are appropriately recognised and managed. The plan can be accessed at:

WESTERN AUSTRALIA

The WA Government Aboriginal Heritage Procedures Manual

The following text is from the Minister’s press release of 26 February 2002.

‘The preservation of Aboriginal heritage during land development will be given a stronger focus with the release of the State Government’s Aboriginal Heritage Procedures manual. Produced by the WA Department of Housing and Works (DHW), with the assistance of the Department of Indigenous Affairs (DIA), the manual was launched at an event in Kings Park today.

At the launch, Housing and Works Minister Tom Stephens said Aboriginal heritage had often been misunderstood and ignored and the manual was an important step forward in addressing this.

‘It will be a requirement for all contract managers in State Government agencies to use the policy guidelines in the manual,’ Mr Stephens said. ‘It provides an effective one-stop guide into all aspects of the Aboriginal Heritage Act requirements and procedures, set out in a clear and simple format. We expect that this will translate into better processes in Government building contracts throughout the State.’

Indigenous Affairs Minister Alan Carpenter said that the manual was an example of the State Government’s commitment to work towards establishing a much improved relationship with indigenous people and would be valuable in reducing tension between Aboriginal people and developers. Mr Carpenter said the manual would ensure that Aboriginal heritage was included in the forward planning process of all State Government agencies. ‘The aim is to provide those agencies with the tools they need to understand Aboriginal heritage issues,’ he said. ‘Although primarily aimed at Government agencies, the manual may also be a valuable resource for private agencies dealing with Aboriginal heritage issues in Western Australia.’ The manual is available on the DIA website: http://www.dia.wa.gov.au

Excavation at Greenough River

Steve Corsini has been ‘assisting the Police with their inquiries’. In January 2002 beachcombers discovered a human jaw, a femur, sacrum and left hip on the Beach near Greenough River. The Geraldton police investigated the site, along with staff from the Department of Indigenous Affairs. They discovered both tibias and fibulas, a femur and half the left humerus, which were left in situ.

The Police sent digital photos of the jaw via email to the State Coroner’s physical anthropologist who identified them as ‘probably ancient’ based on the amount of tooth wear. The Geraldton office of the Department of Indigenous Affairs thus assumed responsibility and at the request
of local elders, asked Steve Corsini to investigate and retrieve any other remains. Steve had quite a bit of experience with skeletal remains during three years with the DIA’s predecessor, the Department of Aboriginal Sites (1992–95), and as a consultant this was his 12th skeletal remains investigation.

With assistance from Geraldton Police and forensic officers, the excavation team and Aboriginal observers attended the site within a week of the discovery. Although the salvage report to DIA is restricted we can state that the skeleton was of a young adult woman, around 5’2” tall and buried in the face-down kneeling position recorded in the contact period ethnographic sources.

Of particular interest was the condition of the skeletal material. The cranium and the pelvis, legs and feet had been exposed by wind erosion of the coastal dune and were quite sun-bleached and partly fragmented. One of the teeth was found 14 metres downslope from the original burial position. The torso and arms were still buried and un-weathered and the appearance of the material could have led one to believe the remains were from two different burials. Luckily the distal end of the left humerus was still buried in anatomical position and fitted the bleached section and no multiple bones appeared. There were no grave goods of any description.

This is the fourth burial to have been discovered within 6 kilometres of the area. The elders requested that a sample of bone be sent for C14 dating. The remains were reburied by the elders in a nearby location on 1 March.

**Gaye Nayton Consultancy**

The draft of the Slater’s homestead conservation plan has gone into the community consultation stage. The homestead complex consists of four standing buildings and two ruins with the locations of former buildings and activities including former farm buildings, dams, wells, soaks, small stock pens or paddocks and historic plantings also found during the physical survey.

The archaeological survey allowed the standing buildings to be more firmly dated as Varman’s 1987 dating of nail types seems to work quite well in the west too. It also took the emphasis off just the built fabric and allowed the patterning produced by the use of the fields around the buildings to be analysed. Slater was a horse breeder and the patterning of the fields and structures around the homestead was different to that I have found around sheep and wheat farms in Western Australia.

A farm with a completely different and very contained patterning was Syred’s homestead, the conservation plan of which is also in the draft stage. This was because Syred was not your typical Western Australian sheep and wheat farmer. He was a blacksmith who ran a piggery and smoked hams and bacon. The archaeological survey confirmed the location of schoolrooms near the homestead and indicated the presence of two previously unknown outbuildings. Both buildings were very close to the homestead and are therefore unlikely to be the piggery, which is more likely to be located outside of the small conservation area around the main buildings. The buildings may have been associated with ticket-of-leave workers as Syred employed several before his sons grew old enough to help on the farm.

The two other projects I have been involved with lately are not farms. One was to provide archaeological policies for Vancouver Arts Centre, formerly Albany Hospital and the other was a conservation plan for a pioneer cemetery at Kenwick. The Kenwick cemetery was the second such site I have been involved in. Last year I was heavily involved in aerial photographic analysis and ground probing radar surveys of former cemetery areas in East Perth. It had been proposed to sell the sites of two former cemeteries, which currently form a spit level car park, for development but buyers were wary of buying a site that might be full of cavities and other unwanted things.
I was asked to study the size of the problem and help cost site clearance and establish protocols. Analysis indicated there were over 200 grave shafts and vaults in the two cemeteries, some of which had been impacted by the cut and leveling operations that created the car parks and some of which had been buried under fill containing smashed bones and coffins bits. With the help of forensic archaeologist Ambika Flavel and information supplied by forensic archaeologists mainly from overseas I worked out protocols and costs for a forensic excavation of the area.

Excavation costs for once did not appear to be a problem as it appears the project management also approached Perth’s current cemetery management and found out it was cheaper to let the archaeologists do it. As one English forensic archaeologist said ‘you know you are working in an industry that does not look after itself when grave diggers earn more then you do’.

The number of possible exhumations was, however, a major problem as the project management plan was to move them to the pioneer cemetery across the road – which was already full. A compromise was reached to cremate the remains and spread the ashes in a memorial park within the historic cemetery. However, the client would not pay for time for off-site storage and study, leaving whatever recording we could do on-site as the only record. I changed site procedures around to do the best job we could in the circumstances, but was not happy with the decision. It had, however, been reached by the project management in consultation with the major heritage bodies within the State, leaving me no one to appeal too. The change from a Liberal to a Labor government did, however, prompt a re-look at the whole project and the site was taken off the market. Its intended future use is presently unknown.

The work undertaken at Kenwick Cemetery forms the basis of a conservation plan that is currently being written. I cannot therefore go into details except to say that a combination of aerial photographic analysis, metal detector survey and physical site survey has added 124 unmarked graves to the 45 marked ones.

To end on a depressing note, construction for a cycle path on the foreshore near my home has just ploughed through two 1835 archaeological sites of former buildings associated with the farm of Elizabeth Rowlands, the only female farmer in the Tranby group settlement in Maylands. These people were the first successful farmers in WA.

What is truly depressing is that, unlike all the rest of our first settlement archaeological sites that are unknown and unlisted because no one will pay for the research to document them, these sites were part of a place I had nominated for inclusion on the State Register as part of a joint nomination of 17 19th-century sites on the Maylands Peninsula. I have also been jumping up and down for 18 months, telling the Heritage Council, the City of Bayswater Council and officers in their technical services office, that the cycle path would impact on several of the nominated sites. All of them are first settlement farms dating to the 1830s and 1840s. I was later informed by the City of Bayswater project manager in technical services after the bulldozing that he knew nothing about any sites in his path.
CONFERENCE NOTICES

COMBINED ANNUAL CONFERENCE 2002 – FIRST ANNOUNCEMENT & CALL FOR PAPERS

This first combined conference between the three major Australasian archaeology associations AIMA (Australasian Institute for Maritime Archaeology), ASHA (Australasian Society for Historical Archaeology) and AAA (Australian Archaeological Association) is to be held in Townsville from 17 November to 22 November 2002. This will provide participants with the first 'formal' opportunity to discuss common themes and issues in the world of Australasian archaeology and to consider future directions. It will also be a rare opportunity to become familiar with new and innovative research from the diverse fields of interest of the Australasian archaeological community.

The Conference will be jointly hosted by the Maritime Museum of Townsville and the School of Archaeology, Anthropology and Sociology at James Cook University. The venue is the Southbank Hotel and Convention Centre in Palmer Street, South Townsville.

The general format of the conference will be as follows:

**Morning:** 'Common Ground' - daily joint session with a combination of invited papers and/or panel discussions, addressing one of these daily themes:

- Archaeology and Heritage Practices
- Public Perceptions, Promotion, and Interpretation
- Management and Sharing of Data and Resources
- Teaching and Training

**Late morning and afternoons:** 'Contemporary Issues' - three concurrent sessions, each 'sponsored' by one of the societies, but open to any speaker or participant. The sessions will reflect a wide range of innovative research programmes and current regional studies from all of the sub-disciplines of Australasian archaeology. Papers are invited for all of these sessions, with preference given to presentations that cross boundaries between the sub-disciplines and/or explore interesting directions for the future of Australasian archaeology. Papers presented in the afternoon sessions that address also the main themes of the conference are especially welcome. Consideration will also be given to proposals for other sessions.
Suggested theme topics:

**New Directions and Developments**
- Technologies and Techniques in the Service of Archaeology
- Theory and Practice
- Archaeology and the Public in Australia
- Museums and Archaeologists
- Professional Training and Opportunities
- Landscapes and Seascapes
- Colonization, Contact and Cultural Transference
- Frameworks for Historic and Maritime Artefact Analysis
- The Pacific at War
- Marine Parks and heritage management

**Regional Australasia: Progress and Prospects**
- The Tropics and Torres Strait
- Both Sides of Bass Strait
- West and Northwest
- South and Central
- The Pacific and Beyond
- Archaeology of Urban Areas

A 200-word abstract should reach the Conference Organisers by Friday 21 June:

**Land and Sea Conference Organisers**
School of Anthropology, Archaeology & Sociology
James Cook University
Townsville QLD 4810
AUSTRALIA
Email: Martin.Gibbs@jcu.edu.au
Phone: + (61) 7 4781-4759
Fax: + (61) 7 4781-4045

For further information on Townsville and possible accommodation:
http://sunzine.net/townsville/

Further conference information, travel details and contact websites will be advertised by 30 April 2002 through the list servers.

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**SEMINAR AND CONFERENCE NOTICES ...**

**Seminar on Lime and Building Conservation in South Australia**
24 May 2002: 8:45am - 5pm at the Historic Yalumba Winery, Barossa Valley

The use of lime has been an integral part of building construction in South Australia for over 150 years. In order to understand the properties of lime and its use in building construction and conservation, Heritage SA is holding a one day seminar. Presentations by leading experts cover such areas as:
- Traditional use of lime in construction and finishes
- Different types of lime commercially available and their performance
- Comparative analysis of their properties
- Production methods
- Planning for further research
A guided tour of the Adelaide Brighton Ltd Lime making facility at Angaston is included.

Lunch and morning tea are provided, with complimentary wine tasting at the end of the day.
Price: $75 Concession: $60
For further enquiries please contact Luigi Vitale at Heritage SA on (61 8) 8204 9248 or email on vitale.luigi@saugov.sa.gov.au

**Australia ICOMOS Islands of Vanishment Conference**
8-10 June 2002 Port Arthur, Tasmania.

This major international conference will be hosted by the Port Arthur Historic Site, in conjunction with the University of Tasmania, the Tasman Institute of Conservation and Convict Studies, and Australia ICOMOS. The theme will be exploring, conserving and interpreting heritage places which commemorate painful or ambivalent themes in the history of our societies.
The conference will provide a focus for exploring the nuances of meaning and memory of such heritage places. They tell us much about our origins, history and past way of life. They also resonate with strong emotional themes of tragedy, injustice, endurance and sometimes redemption. For these reasons society may have an ambivalent attitude to such places and may even seek their disappearance.

The four streams for the conference are:
- Significance
- Conservation
- Community
- Cultural tourism

Enquiries should be directed to:
Convention Wise
Mures Building Victoria Dock
Hobart Tasmania 7000 Australia
Phone: +61 3 6234 1424
Fax: +61 3 6231 5388
Email: mail@conventionwise.com.au

Or visit the Australia ICOMOS website:
http://www.icomos.org/australia

Celebrating Mountains Conference*
An Australian Alps Conference & Events 23 – 28 November 2002

The Australian Alps Liaison Committee (AALC) is hosting a conference and events as part of the United Nations International Year of Mountains (IYM), to be held in Jindabyne (NSW) from Saturday 23rd November through to Thursday 28th November 2002. Sessions will be presented by speakers from Australia and overseas, from both within and external to the Australian Alps agencies, and will include land managers from environment and related agencies, scientists, cultural heritage specialists, researchers and other professionals and practitioners in relevant fields.

Conference Coordinator
For all registrations, accommodation and post conference enquiries contact:
Janet Mackay & Associates
43 James Street, Berridale NSW 2628
Australia
Telephone: 61-(02) 64563876
Facsimile: 61-(02) 64564022
Email: IYM@bigpond.com.au

* Ed: ref last newsletter – seems there has been a slight change in organiser, date etc. but for those who have submitted abstracts to Juliet Ramsay, you do not need to resubmit them.

Also note: the ICOMOS Scientific Symposium and General Assembly to have been held in Zimbabwe in October has been cancelled. The 2002 GA will now be held in Madrid, with the intent that the symposium by held in Zimbabwe next year – let’s wait and see! .

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Book (RE)View

By Tessa Corkill


Someone once wrote that ‘laughter is the best medicine’ and, in times when nothing seems certain apart from death, taxes and Howard’s Way, this seems particularly apt. A book of extracts from North American college students’ history exam papers would appear an odd place to look for laughs, but this one had me in stitches.
According to one student ‘History, a record of things left behind by past generations, started in 1815. Thus we should try to view historical times as the behind of the present. This gives incite to the anals of the past’, and to another: Prehistory (or the ‘Stoned Age’) is a subject mainly studied by anthropologists and was prior to the year 1500. When animals were not available, the people ate nuts and barrys. Social division of labour began when a tribe would split into hunters and togetherers. Crow Magnum man had a special infinity for this. Advances were most common during the inter-galactic periods.

Another student wrote that civilisation ‘woozed out of the Nile about 300,000 years ago. Every year it would flood and irritate the land. This tended to make the people nervous’. Moving right along we have ‘King Xerox of Persia’ and Jason’s ‘hunt for the Golden Fleas’. The beginnings of scientific method are also summarised – e.g. never taking anything ‘for granite when solving a problem’. Plato apparently ‘invented reality’ and ‘was teacher to Harris Tottle, author of The Republicans’.

Australia gets a few mentions too, sometimes obliquely: ‘when they finally got to Italy, the Australian Goths were tired of plunging and needed to rest. Italy was ruled by the Visible Goths, while France and Spain were ruled by the Invisible Goths’ – one wonders which were the Australians, or were they resting. During the First World War the British ‘used mostly Aztec troops to fight at Gallipoli’ (ah, the American connection – memories of the recently late Thor Heyerdahl and his Pacific rafts). In the same war ‘Florence of Arabia fought over the desert’.

All these, and many more, in this short book which Henriksson assures us is authentic. But should we laugh? Or should we weep at the state of American education today, which has resulted in such ignorance of history, geography and the use of language? And would Australian students do any better, or be as inadvertently funny? Who knows, perhaps some of our educator members could enlighten us?

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**A-sitting on a Tell**

*With apologies to Lewis Carroll*

I'll tell you everything I can
If you will listen well:
I met an erudite young man
A-sitting on a Tell.
"Who are you, sir?" to him I said,
"For what is it you look?"
His answer trickled through my head
Like bloodstains in a book.

He said: "I look for aged pots
Of prehistoric days,
And then I measure them in lots
And lots of different ways.
And then (like you) I start to write,
My words are twice as long
As yours, and far more erudite.
"They prove my colleagues wrong!"

But I was thinking of a plan
To kill a millionaire
And hide the body in a van
Or some large Frigidaire.

So, having no reply to give,
And feeling rather shy,
I cried: "Come, tell how you live!
And when, and where, and why?"

His accents mild were full of wit:
"Five thousand years ago
Is really, when I think of it,
The choicest age I know.
And once you learn to scorn A.D.
And you have got the knack,
Then you could come and dig with me
And never wander back."

But I was thinking how to thrust
Some arsenic into tea,
And could not all at once adjust
My mind so far B.C.
I looked at him and softly sighed,
His face was pleasant too ...
"Come, tell me how you live?" I cried,
"And what it is you do?"

He said: "I hunt for objects made
By men where'er they roam,
I photograph and catalogue
And pack and send them home.
These things we do not sell for gold
(Nor yet, indeed, for copper!),
But place them on Museum shelves
As only right and proper.

"I sometimes dig up amulets
And figurines most lewd,
For in those prehistoric days
They were extremely rude!
And that's the way we take our fun,
'Tis not the way of wealth.
But archaeologists live long
And have the rudest health."

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...cont. back cover
I heard him then, for I had just
Completed a design
To keep a body free from dust
By boiling it in brine.
I thanked him much for telling me
With so much erudition,
And said that I would go with him
Upon an Expedition ...

And now, if e'er by chance I dip
My fingers into acid,
Or smash some pottery (with slip!)
Because I am not placid,
Or see a river flow
And hear a far-off yell,
I sigh, for it reminds me so
Of that young man I learned to know -

Whose look was mild, whose speech was slow,
Whose thoughts were in the long ago,
Whose pockets sagged with potsherds so,
Who lectured learnedly and low,
Who used long words I didn't know,
Whose eyes, with fervour all a-glow,
Upon the ground looked to and fro,
Who sought conclusively to show
That there were things I ought to know
And that with him I ought to go
And dig upon a Tell!

(From: Agatha Christie Mallowan: Come, Tell Me How You Live.
Provided by Laila Haglund

CONTRIBUTIONS

All contributions to the Newsletter are welcome and should be submitted either on floppy disk (IBM compatible) or by email – attachments as either a word or rtf file are preferable to text embedded in an email. You can contact any member of the Committee regarding contributions to the Newsletter, or forward to:

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Or

The Newsletter Editor  
Box 214 Holme Building  
University of Sydney NSW 2006

Please forward contributions for the next Newsletter by 1 August 2002.