PROCEEDINGS OF THE IFRAO CONGRESS
September 2010

2013 # 5

http://www.palethnologie.org
ISSN 2108-6532

directed by
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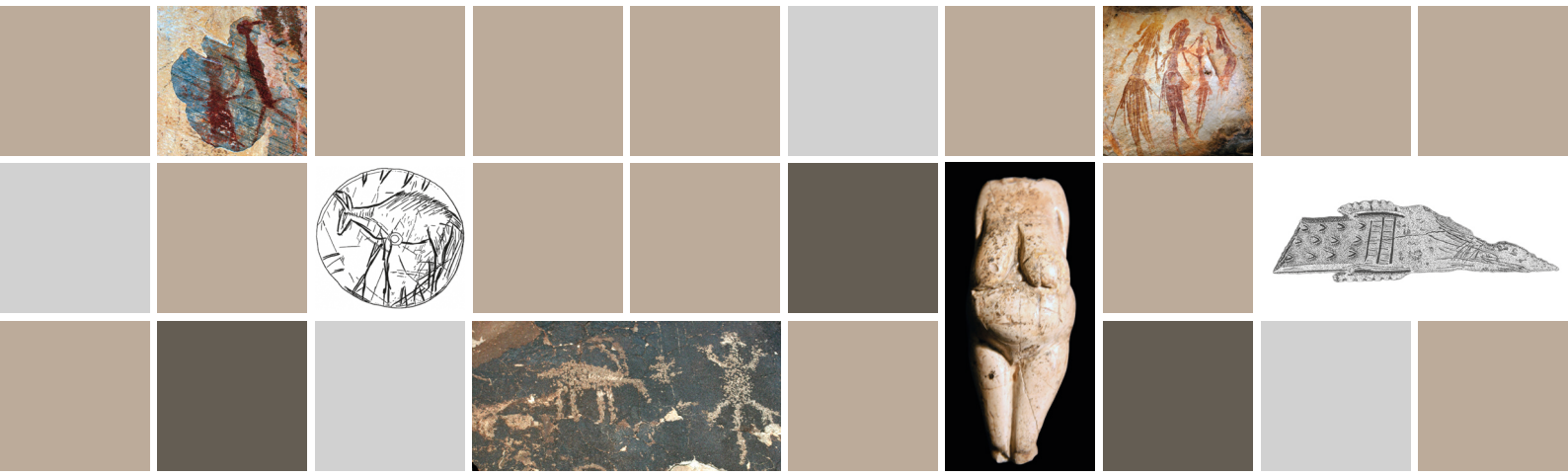
PLEISTOCENE ART OF THE WORLD

Short articles



PALETHNOLOGY
Bilingual review of prehistory

AUS1 Ward
Full article, pp. 975-989

PLEISTOCENE ROCK PAINTING IN AUSTRALIA

Graeme K. WARD

This survey of pictograms dated to Pleistocene and pre-sea-level-stabilization periods in Australia draws upon the work of others as acknowledged. I attempt to cover the main issues, without being comprehensive, as an introduction for a European audience.

Pleistocene Australia and sea levels

The Pleistocene was differentiated from preceding and subsequent periods by major climatic changes and it is argued that the Pleistocene / Holocene change saw significant changes in human societies. With global sea level oscillations much water was trapped in the Northern Hemisphere ice cap and glaciers during colder phases; the Southern Hemisphere might have been less glaciated, but reduced sea-levels – over the last 140 000 years – exposed large regions of continental shelf presently below sea level and joined Australia to adjacent land masses. At about seventy thousand years ago, shores were 60 m below present sea levels, resulting in shorter distances between Asia and Greater Australia. Between 25 000 and 15 000 years ago a phase of the Last Glacial Maximum made much of the Australian continent cold and arid. The Centre was probably incapable of supporting human life. In the next 5 000 years, climatic conditions ameliorated; the interior was resettled. Rising seas separated New Guinea and Tasmania from Australia; the continental shelf – in parts more than 200 km wide – became submerged, and its various populations concentrated in, for example, the higher Kimberley and Arnhem Land regions.

If the Pleistocene / Holocene boundary appears less well defined climatically in Australia, what might be more important to human settlement is the rise and stabilization of sea levels about 6 500 years ago.

"Palaeolithic" / "Neolithic"

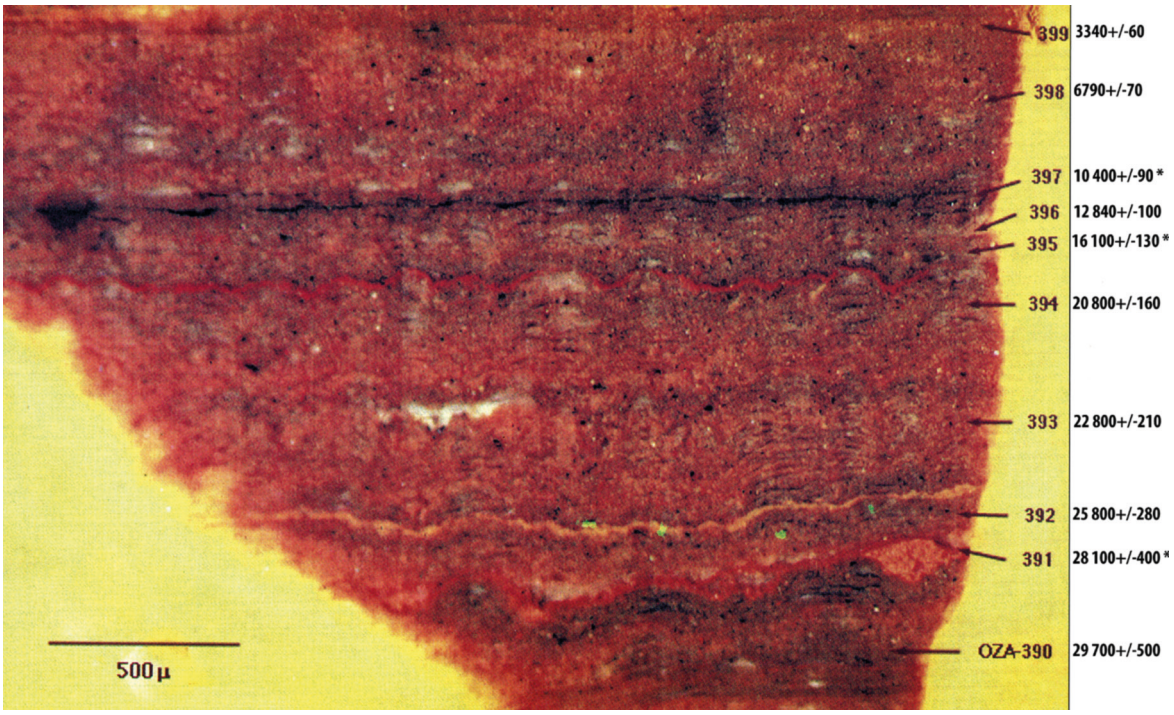
The Pleistocene / Holocene change in human societies has been summarized as the change from the Palaeolithic to the Neolithic; this transition was not necessarily the same or as significant everywhere. Arguably the Palaeolithic continued in Australia until – and, indeed, after – European colonization; that "Neolithic" practices were evident in the Australian "Palaeolithic". Ground-stone tools were in use in northern Australia about 25 000 years ago; savannah grasslands were modified systematically; grasses and other flora were cultivated and their characters modified; the range of fauna was drastically altered by human intervention, including anthropogenic fire regimes. We can question whether the climatic differences between the Pleistocene and Holocene affected the ways of life of early inhabitants of Australia as much as elsewhere.

Conditions 50 000 years to < 10 000 years ago

Nevertheless, climatic and environmental changes accompanying warming and sea-level rise did have significant impacts upon Australian populations. Sources of raw materials, for example, were submerged and lack of access is reflected in the archaeological record. Eucalyptus forest re-colonized the south, while tropical vegetation, reflecting monsoonal rainfall patterns, became established across the north of the continent. Eucalyptus forests contain few edible food plants and such areas appear to have been abandoned. Northern regions became more habitable and were reoccupied, and the arid interior – re-vitalized with ephemeral lakes and rivers – was settled, with the use of new resources reflected in the archaeological record. Possibly about 6 000 years ago the carrying capacity of the continent was reached. Before and during this period there was a marked change in the range of fauna hunted.

In attempting to date early occupation, the limits of the radiocarbon timescale were quickly reached; ability to analyze small samples of charcoal and bone using accelerator mass spectrometry has extended the usefulness of the technique. Thermoluminescence, OSL, ESP and other methods have been applied.

While human occupation of Australia is minimally dated to about 45 000 years ago, it is likely that modern humans occupied Australia during the period 50 000 to 60 000 years ago. Between about 40 000 and 25 000 years ago most of the distinctive Australian megafauna became extinct. By about 7 000 years ago sea levels were close to their maxima.



Microphotograph of excavation by Watchman of stratified sample from painted area of Walkunder Arch shelter. Paintings are at levels marked by *; age estimates are uncalibrated (after J. B. Campbell).

Dating ancient rock-painting

Opportunities for preservation are poor at open sites and shallow shelters. In northern Australia, subject to abundant rainfall, the formation of stabilizing crusts and skins over a rock surface can preserve a painting. Aspects of symbolic representation including rock-painting can be dated by indirect and direct methods to more than 40 000 years ago.

In 1984, Chaloupka defined a sequence of flora and fauna depicted in Arnhem Land rockshelters, arguing that a significant proportion was made before the Holocene rise in sea-levels; later "Estuarine" imagery – due to the partially inundated environment of the Arnhem Land wetlands – contrasted markedly with "Pre-Estuarine" images that clearly represent pre-sea-level-rise flora and fauna; the earlier stages he considered dated to the Pleistocene. In 1981, Rosenfeld argued that paintings could be indirectly dated from adjacent 18 000 years old strata at the Early Man site. Painted roof-fall at O'Connor's Carpenters Gap 1 site was dated to between about 33 000 and 43 000 years ago. The oldest directly-dated evidence of rock-painting – about 25 000 BP – have been reported by Campbell and Watchman from Walkunder Arch.

The problem with some direct-dating approaches is that, while we may be more confident with the dating results of the application of this technique, that we know within reasonable limits the likely date of the pigment applied to a rock-face which has been caught between two accreting layers, we may not know anything about the character of the painting itself: its extent, its style, or what is being depicted.

Perhaps more satisfying evidence for many will be the identification of early pictograms from their subject matter, a recent example being that suggested by the recognition of megafauna reportedly extinct by at least 25 000 years ago. Researchers are faced with a dating dilemma probably not unique to ancient Australia.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