Initial Analysis of Stone Artefacts from Gua Talimbue, Southeast Sulawesi

In September, David Bulbeck (ANH), Ben Marwick (University of Washington Department of Anthropology) and Suryatman (Makassar Archaeology Office) overlapped for two weeks at the National Centre for Archaeology (ARKENAS) in Jakarta, to record lithics from the limestone cave of Gua Talimbue in Southeast Sulawesi, Indonesia. This site’s occupation sequence lasted from the Late Glacial Maximum onwards and is critical to the "The Archaeology of Sulawesi: a strategic island for understanding modern human colonization and interactions across our region” project (Australian Research Council DP110101357, Investigators Sue O’Connor, Jack Fenner, Janelle Stevenson and Ben Marwick). Suryatman analysed the lithics from Square E spits 1 to 11, Ben recorded the lithics from the adjacent Square B starting at the bottom and working upwards, and David also worked on the Square B lithics between spits 31 and 37 near the middle of the sequence (it may not sound like a plan but it is). Suryatman is the lead author with David and Ben on a report in Indonesian and English to ARKENAS on the Square E Spits 1–11 lithics.

Points of interest include:

- On-site knapping of chert brought to Gua Talimbue from adjacent outcrops, reflected in the predominant presence of chert debris in the lithics
- Occasional use of quartz and andesite
- A low proportion of retouched pieces (2% of the assemblage) with retouch applied to rejuvenate working edges
- Use of debris as well as flakes and cores for the application of retouch
- No evidence for any flake-tool types (such as the microliths and pressure-flaked Maros points known from southwest Sulawesi).
“...In November, Judith Cameron travelled to Vietnam to participate in celebrations marking the 90th Anniversary of the discovery by French archaeologists of the Bronze Age Dongson Culture...”

Recent Publications:


The latest issue of the North American Archaeologist is devoted to Prehistoric Perishable Fiber Artefacts and Judith Cameron was one of seven invited contributors. The paper discusses the 2004 excavations with Peter Bellwood, Nguyen Viet and Bui Liem of Dongson textiles preserved through waterlogging in an irrigation channel at Dong Xa, northern Vietnam.


In November, Judith Cameron travelled to Vietnam to participate in celebrations marking the 90th Anniversary of the discovery by French archaeologists of the Bronze Age Dongson Culture. To commemorate this a new section of the National Museum of Vietnam History in Hanoi was officially opened to display the most significant finds and Judith was the official foreign guest in recognition of her discovery of the first Dongson clothing at Dong Xa. The Vietnamese consider the Dongson people of the Red River region to be the first Vietnamese. To coincide with the new exhibition, the Vietnam Institute of Archaeology organized a Seminar on Recent Dongson Discoveries which she also attended before undertaking fieldwork in Thanh Hoa Province and holding discussions with Vietnamese archaeologists who excavated Neolithic sites belonging to the earlier Hoa Loc culture in 1976. She has recently re-examined the clay stamps produced by these excavations as part of her current ARC grant examining the evidence for long-distance interaction in Early Southeast Asia. Before returning to ANU, she presented her research findings to archaeologists at the Institute of Archaeology prior to submitting her paper for publication.


Abstract:
During the formation of acid sulfate soils (ASS), several chemical elements in the sediment are mobilised. These elements are removed from the sediment or become enriched as precipitates in distinct horizons. The stratigraphic depth in which these precipitates accumulate is element-specific and is located either within the oxidised or in a transitional zone between the oxidised and the reduced zone. Aim of this study is to demonstrate how X-ray fluorescence core scanning, together with detailed sediment descriptions, can be used to perform an initial assessment of these different zones in ASS in a fast and cost-effective manner. We measured the chemical element signatures of K, Fe, Pb, Sr, Zn, Ni, Y, Mn and Ca in two sediment cores from Western Australia where ASS are suspected to occur. The oxidised zone in both cores is characterised by the occurrence of jarosite, which is indicated by pale straw yellow mottling and synchronous peaks in Fe/Ti, K/Ti, Pb/Ti and Sr/Ti, and of other secondary Fe-oxides, which are indicated by reddish mottling and synchronous peaks in Fe/Ti and Pb/Ti. The transition zone into reduced material is marked by synchronous peaks in Zn/Ti, Ni/Ti, Y/Ti and Mn/Ti. Based on these characteristic signatures, we broadly estimated the depth of the oxidised and the transitional zone at both sites. (see http://www.publish.csiro.au.virtual.anu.edu.au/?paper=SR14103)

Abstract:
Sample preparation protocols for concentrating organic material from sediments for radiocarbon dating often include a large number of steps and the use of hazardous chemicals. Thus, these protocols are often problematic for pollen-poor sediments as material can get lost or may become degraded. Pyrite in samples for radiocarbon dating hinders an effective graphitisation process and thus needs to be removed during sample preparation. Standard protocols require the use of nitric acid, a strong oxidant that corrodes organic material. Therefore, the use of nitric acid needs to be avoided when preparing pollen-poor but pyrite-rich sediments.

We present a method that minimises the sample preparation steps by replacing acid treatment with heavy liquid separation. Using non-toxic LST at a density of 2.0 g cm⁻³ is shown to be effective for separating the organic fraction from sulphides, silicates and carbonates. We applied this method to pyrite-rich and pollen-poor sediments from Western Australia that had previously been problematic to date. The successful AMS radiocarbon dating of all samples pre-treated with LST demonstrates the effectiveness of this method.

(see: http://www.sciencedirect.com/science/article/pii/S187110141400096X)


Abstract:
Peat humification analysis is presented as a robust palaeoclimatic proxy, suitable for use on mid–late Holocene peat sequences situated in the Southern Hemisphere. The proxy is shown to permit the identification of wet and dry shifts in a peat sequence from the humid tropics of north-eastern Australia. A significant correlation is found between the humification record and other proxies indicative of past climate conditions such as pollen, δ¹³C, C/N and macrocharcoal. Sixteen wet shifts detected in the humification record for Bromfield Swamp occur at the following dates (with 2σ range): 3830 (3920–3740), 3560 (3640–3480), 3490 (3560–3420), 3380 (3450–3300), 3120 (3250–2970), 2950 (3100–2790), 2560 (2710–2450), 2430 (2600–2260), 2120 (2330–1910), 1750 (1980–1520), 1430 (1660–1200), 1170 (1390–960), 1010 (1220–820), 620 (770–500), 300 (400–200) and 100 (200–10) cal yr BP. Blechnum and Poaceae are identified by pollen analysis to be the dominant plants of the swamp surface over the past 4000 years. The ratio of these two plant taxa in the pollen record correlates well with identified wet and dry shifts. It is suggested that a ratio ≤1 possibly indicates dry conditions, a ratio of >1–3 indicates wet or dry conditions, and a ratio >3 implies wet conditions. Large macrocharcoal peaks are recorded during the initiation phase of the peat sequence at approximately 4090 cal. yr BP, and at 3700–3620 cal. yr BP, both of these time periods being coincident with dry phases. Isolated minor macrocharcoal peaks at ca. 2860, 2820, 2620, 2560, 2130, 1930, 1740 and 200 cal. yr BP are found to coincide with periods of average effective precipitation (based on the humification proxy) and so may reflect fire on the swamp surface, transport and redeposition down-slope of old charcoal after a high rainfall event, or burning in the landscape by indigenous people.

(see: http://mires-and-peat.net/media/map14/map_14_05.pdf)
Vale Wilhelm G. Solheim II, 1924–2014:

Vale Wilhelm G. Solheim II, 1924–2014. Bill died in Manila on July 25, aged almost 90. His dedication to archaeological research in Southeast Asia led him to create the network of interregional scholarship that became IPPA, and to found the journal Asian Perspectives. Jack Golson and Jean Kennedy have documented his huge contribution to this association, and to pioneering research in southeast Asian prehistory, in a festschrift paper published in 2004. For a pdf copy, email jean.kennedy@anu.edu.au.
Research in Archaeology and Natural History at the ANU School of Culture, History and Language aims to understand prehistoric human societies, the environments in which they developed and the environmental consequences of human presence. Departmental research ranges from southeast Asia and the Pacific, through the tropical forests of New Guinea and the savannahs of Australia, to the islands of Oceania.

Field research in ANH is supported by well-equipped laboratories that were fully updated and refurbished during 2009. Our laboratories support research into prehistoric textiles, archaeobotanical remains, rock art, prehistoric environments, zoological material and ceramics. ANH houses the largest pollen reference collection in Australia, as well as plant, bone, shell and ceramic collections. We also have access to world-class ANU facilities for archaeological dating, stable isotope analysis, and electron microscopy.