

SOUTH AFRICAN ARCHAEOLOGICAL SOCIETY



GNEWS

KwaZulu-Natal Branch Newsletter

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ACTIVITIES PLANNED FOR 2007

Your committee is putting together what promises to be a fascinating set of events for 2007. Planning for some is not yet finalised, but we look forward to seeing you at some or all of the following functions:

Talk by Dan Bahat on *Recent archaeological discoveries in Jerusalem*, Friday 9 February 2007 at the Durban Natural Science Museum, 18h30.

Dan Bahat is an archaeologist in the Department of the Land of Israel Studies at the Bar-Ilan University, Israel. He is one of Israel's leading archaeologists and has excavated a number of historic sites including Herod's Palace in Jerusalem and the 1 600-foot tunnel which runs under the western retaining wall of the Temple Mount. He is considered the authority on the history and archaeology of the City of Jerusalem.

IMPORTANT: Please provide us with your vehicle licence plate number by Wednesday 7 February if you require parking at the museum. Those who wish to join us for supper after the talk must also let us know by Wednesday 7 February. Please email to bvandoornum@nmsa.org.za, gwhitelaw@nmsa.org.za, or christine.sievers@gmail.com or phone Bronwen or Gavin at the Natal Museum (033-345 1404). Arrive early as this talk may well attract a large crowd.

Branch AGM and the 20th Oliver Davies Memorial Lecture by Johan Binneman, a Later Stone Age archaeologist from the Albany Museum, Grahamstown, Tuesday 13 March 2007, Waterfall Library, 18h15.

In 1999, Dr. Binneman discovered mummified human remains below a painted stone slab in a shelter in the Kouga mountains. A large quantity of *gifbol* leaves covered a crouched body with well-preserved skin tissue. The burial elicited much publicity, debate and discussions about the study of the remains and their possible reburial.

Those who wish to join us for supper after the talk must let us know by Monday 12 March. Please email to bvandoornum@nmsa.org.za or gwhitelaw@nmsa.org.za or phone Bronwen or Gavin at the Natal Museum (033-345 1404).

Combined lecture with SASQUA by Rob FitzPatrick *Use of soil and quaternary materials in crime investigations*, Wednesday 11 April, PMB or Howick (venue to be confirmed), 17h00.

Prof. Fitzpatrick is from the Centre of Australian Soil Science where new techniques in soil forensics have been developed which discriminate and match soils to provide critical evidence in a range of situations, such as connecting aboriginal artifacts and their site of origin, and stolen ferns and a conservation area. Crimes such as assault, kidnapping and murders have been solved by identifying the similarities between soils on a shovel and from a quarry, on clothes and in a vehicle, and even dust on a car and from a cement factory.

Tour of the Durban West Street Cemetery, Saturday 21 April 2007, 14h30.

Many famous names and early Natal pioneers are buried in West Street Cemetery and we plan to visit the graves of well-known people such as the great 19th century traveler and artist, Thomas Baines. Secure parking with a guard is available within the cemetery grounds.

National AGM with talk (to be determined), Tuesday 15 May 2007, Waterfall Library, 18h15.

The talk will follow the AGM at 18h45

Tour of the built heritage of Pietermaritzburg with Debbie Whelan.

Excursion to archaeologists in the field with Gavin Whitelaw, Thursday 9 August 2007.

Weekend outing to Border Cave in the Ngwavuma area and Hluhlwe, hopefully with an expert guide, 22–24 September 2007.

Border Cave is situated high in the Lebombo Mountains with a magnificent view of the Ngwavuma river and the Swaziland lowveld. It has a rich deposit with Middle Stone Age, Later Stone Age and Iron Age material and is one of the few South African sites that has yielded early anatomically modern human remains.

Talk by Dan Wylie on *Shaka Zulu and the myth of iron*, Wednesday 17 October 2007, Natal Museum (Pietermaritzburg), 18h30.

Dan Wylie is a lecturer in the English Department at Rhodes University, Grahamstown, with a special interest in white writings on Shaka. He has published many articles and books on the topic; two of the more recent books are *Savage delight: white myths of Shaka* (2000) and *Myth of iron* (2006). *Myth of iron* is the best 'biography' of Shaka available. Dan lectures on African literature, southern African poetry, twentieth-century prose and poetry, spirituality and poetry, and ecological issues in literature. His collection of poetry, *The road out* (1996) won the 1998 Ingrid Jonker and Olive Schreiner prizes.

Christmas party, delicious grub with a tour of new exhibits at the Natal Museum (Pietermaritzburg), Wednesday 14 November 2007.

SECRETARY'S NOTES

We are delighted to welcome new members Allistair Sparkes, Anna Fatti, Nisha Moodley, Simtholile Ngidi and Trafford Petterson, as well as Dr B.L. Eriksson and Miss E. Heunis who transferred from the Trans-Vaal branch. Membership of most societies is declining and overall membership of the KwaZulu-Natal branch of the South African Archaeological Society is no exception. In December 2006 Head Office convened a meeting with representatives from all the branches to discuss declining membership and hopefully the strategies to increase membership and participation in the society and its events will bear fruit in 2007.

Since the AGM in 2005, two new committee members, Tim McClurg and Chrissie Sievers, have been co-opted. According to the constitution, the committee needs a minimum of 8 members and Tim and Chrissie were approached to fill the places vacated by the resignations of Mike Moon and Mick Gregory. Mick has been a committee member since 1993 and also acted as an able chairperson in 2001. Mike has served for many, many years on the committee - since 1984, in fact. He was also chairperson for 4 years. We thank Mike and Mick for all the hard work over the years. And the work continues: Mike, in spite of not being a member of the committee anymore, still provides support and help with matters such as booking venues for talks. Mike and Audrey recently celebrated their 40th wedding anniversary and we heartily congratulate them.

Mr Derek Cain passed away in November 2004. He was an active Society member, especially in the late 1960s and 1970s (he joined in 1968), and went on field trips with Oliver Davies. He bequeathed the sum of R5000 to the KZN Branch of the SA Archaeological Society, as well as a large number of books. We are deeply grateful for this bequest. In accordance with Derek's wishes, we will endeavour to sell the books to generate funds for the KZN Branch. More on this soon.

PAST EVENTS – TALKS

The Shashe-Limpopo Confluence Area: a place where rivers and people met **by Alex Schoeman, 15 March 2006**

The World Heritage status of the Mapungubwe Cultural Landscape was bestowed because of the wealth, importance and allure of the archaeological remains and the evidence that the first complex society in southern Africa, with sacred leadership and distinct social classes, developed in the area. This development had wide repercussions in southern Africa and Great Zimbabwe would not have existed but for the developments in the Shashe and Limpopo rivers' confluence (SLC). The sophisticated state system, economy and metal-working skills of the Mapungubwe people has inspired pride in post-apartheid South Africa and led to the name, 'The Order of Mapungubwe', for the highest award that can be conferred upon a South African citizen. The award recognises excellence and exceptional achievement and a prominent feature of the award medal is the image of the gold rhino, an exquisite statue of gold-plate that was found on Mapungubwe Hill.

Research in the SLC is ongoing and Alex Schoeman in her talk combined the work from three recent PhD. dissertations to describe what was happening around 1000 years ago in the SLC. Her research deals with the origins of sacred leadership in the early Zimbabwe Culture in the Limpopo valley. Sacred leadership evolved when the first kings of Mapungubwe took ever-greater control of rainmaking until they were personally responsible for rain control. Bronwen

van Doornum studied the hunter-gatherer presence in the area from about 11000 years ago investigating changes within that time and especially the interactions with incoming farmers from about 100AD. John Calabrese concentrated on ethnicity and class and the emergence of social complexity in the area.

Alex began by describing landscapes, social, physical, perceived and real and said that her research to understand landscapes using landscape theory had been influenced by Veronica Strang's work on the meeting of the original or indigenous people and the white farmers in Australia. Landscapes consist of topographical features and peoples' interpretations of these and thus are real and imagined. Moreover they change: one doubts that architect Moerdyk's perception of a particularly striking butte, a geographical feature in the Mapungubwe Park, as an apt model for the Voortrekker Monument and what it symbolizes, would be shared by many in the present political milieu. Moerdyk attributed meaning to the butte and Alex defined spaces as places to which meaning had been ascribed. The meaning of a space is thus not inherent and can change according to changing perceptions, thus Bronwen's Balerno Main shelter served as a residential space and a vestibule for art at different times.

Continuing the geographical theme, Alex suggested people will have mental maps of what the spaces mean. Thus a map of water sources and number of days walking between them may also include spaces that are safe (the home bases) and spaces that are dangerous (hunting areas) and these may change seasonally. Bronwen's research, other researchers such as Lyn Wadley, and models based on ethnographic evidence, provide a strong case for seasonal dispersion and aggregation and Alex suggests that social and ecological constraints influenced the size of bands of people and their movements. During periods of aggregation gender division of roles would be strictly adhered to whereas during dispersal phases, gender roles were not as fixed and women might even hunt. Alex would like to explore the idea that the presence of the farmers encouraged the hunter-gatherers to drift into a permanent state of aggregation. This permanent state may be the reason that gender roles became so entrenched as observed ethnographically in early to mid-20th century hunter-gatherer societies in the Kalahari.

When the farmers arrived in the SLC, hunter-gatherers responded in various ways: some embraced the newcomers and others continued as before. Although they had independent identities, there were still areas of mutual interest between the newcomers and the locals and it is possible that the farmers adopted hunter-gatherer elements, as in the parallel case in the Eastern Cape, where the Cape Nguni appropriated San mythological creatures. Alex describes this situation as the landscape colliding. A central issue in the colliding is the fact that rain is central and fundamental to most agricultural communities and control of rain is vital for spiritual conquest and hence political hegemony.

Ethnographic research suggests that rain control was practiced away from camp. Knowledge is power and secrecy is needed to maintain it. Rain controllers painted some of the images they saw, such as rain animals. Alex suggested that rainmakers had additional landscapes which may have been invisible to normal people. She further suggested that a key node (space) where the shamans would mediate between the spiritual and real worlds would be water pools and she showed the 'cisterns' on Machete Hill some lucky members of the society were able to see on the trip to Mapungubwe in August 2005. Cupules, small hollows ground into the rock, also have a role in rain control. At Tsodilo Hills in Botswana the banging of a stone in a cupule performs a similar role to the sharp clapping of hands in a trance dance. The cupules at Tsodilo were made by hunter-gatherers and the use of cupules for rain control by the Venda suggests that



Cupule on Machete Hill

incoming farmers appropriated this idea from the locals, and shows a possible merging of certain elements of the spiritual worlds of the different groups in the SLC.

John Calabrese investigated the different ethnic groups, people with their own distinct material culture, beliefs and customs and the changes over time and space according to their pottery and spatial organization. The geographical situation of the capitals Shroda (AD900-1000) occupied by Zhizo people, K2 (AD1000-1200) distinguished by Leopard's Kopje style pottery and Mapungubwe (AD1220-1300) with Mapungubwe style pottery which developed out of Leopard's Kopje, are examples of the changing physical landscapes (preferred residential areas) within the SLC. The picture is not that simplistic and does not include the presence of Leokwe people whose ceramic style developed out of the Zhizo style and who were specialist metal workers also present

in the area after about AD1000. The influence of east coast trade and the wealth it generated for some, variations in the rainfall regime and its effect on agriculture a mainstay of the economy, and even possibly the hunting-out of elephants, are some of the factors that led to much rearrangement of both physical and mental landscapes. Alex's detail was fascinating, especially for those of us who had visited the area and seen the magnificent real landscape.

After all the journeying between different types of landscapes it was interesting to note the application of landscape theory in contemporary society and how a particular place in the landscape may be attributed importance and may then act as a marker. None of us knew where the after-talk dinner venue was but when its location was explained with respect to Woolworths, it was quite easy to find.

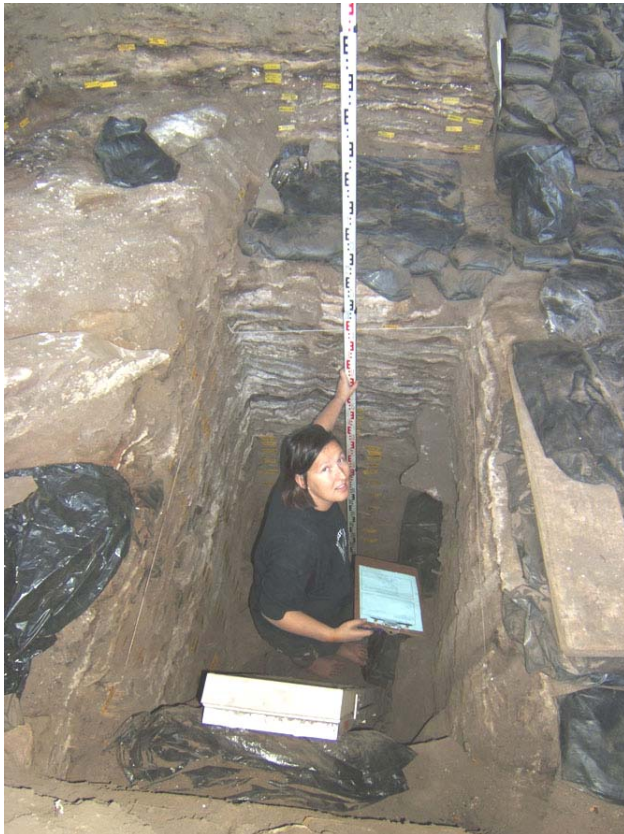
The 19th annual Oliver Davies Memorial Lecture: *Colourful explorations at Sibudu and beyond*, by Marlize Lombard, 5 April 2006

Worldwide, the issue of cognitive modernity, its first appearance and its relationship to anatomical modernity, is being researched. Anatomically modern humans (like we are) were present in Africa at about 120 000 years ago and later in the rest of the world, as they spread from Africa into the Middle East and beyond. The questions asked are: because they were physically like us, were their brains also wired in the same way, i. e. were these people able to think, and communicate, like we do? A glimpse of the capabilities of their 'little grey cells' was presented to us at the 19th Oliver Davies Memorial Lecture by Marlize Lombard of the Natal Museum. In a fluent and well-illustrated exploration into the colourful subject she provided us with clear, concise and ground-breaking evidence that evidence of their advanced technological skills and knowledge lie at our own backdoor, Sibudu Cave and further south at Blombos Cave.

Traditionally, archaeologists have believed that ochre was used for body decoration or in rock art and that the presence of ochre in an archaeological deposit thus indicated the presence of people capable of symbolic thought, i.e. ochre was used for symbolic purposes, so indicated cognitive modernity. The earliest evidence of the symbolic use of ochre comes from Blombos Cave and the world-famous ~75 000 year-old small piece of incised ochre is appropriately

illustrated on the cover of the South African Archaeological Bulletin. Sceptics venture that the incisions may be functional rather than an art form.

Investigating the functional properties of ochre, Marlize identified the use of ochre combined with resin (gum from trees) to produce the mastic or glue to haft stone tools to shafts for hunting during the Howiesons Poort i.e. before 61 000 years ago and earlier Still Bay lithic phase. By looking at the fracture patterns on the stone tools Marlize was able to conclude that the Howiesons Poort stone tools were hafted and used as projectiles. The people making the hafted



Marlize Lombard excavating at Sibudu

tools were capable of planning and constructing composite hunting tools and they had an informed appreciation of the properties of ochre and resin and the combination of the two, i.e. they had considerable technical skill and knowledge.

Marlize followed an avenue of archaeological research called experimental archaeology or actualistic or replication studies, where modern experiments are conducted to provide comparative material that can be used to provide clues to the materials or patterns found in the past. With flagrant and admirable disregard for possible gender transgressions, Marlize has knapped stone tools, made mastic, hafted the stone tools to wooden shafts and attacked wild animals (notably an already dead wildebeest). Comparisons of the resulting residue patterns on the stone tools with residues of archaeologically recovered stone tools have been produced phenomenal results about how mastic was made, how stone tools were hafted and what stone tools were used for. This research is exciting not only in what it tells us about the behaviour

of people at Sibudu Cave but because it is groundbreaking internationally.

The pictures of residues and their distributions on artefacts that we were shown were beautifully colourful. To see the obvious correlation of bright red ochre grains in clear resin on a replication stone, and on a Howiesons Poort segment was startlingly arresting and thrilling (500x, like the magnification). But such results are the product of hard work: for example, on 24 Sibudu Cave Howiesons Poort points, Marlize plotted 807 residues that included 164 residues of ochre and 146 of resin. And just to make sure that Marlize is not seeing things when she produces these results, Prof Lyn Wadley the director of the Sibudu project, sets her blind tests. To test the accuracy of Marlize's analytical and identification skills Lyn will deliberately add or leave out residues, e.g. ochre, fat, bone, plant fibres, on the stone tools she makes, uses and gives to Marlize. Furthermore, to test what residues may be present without human intervention, Marlize has been known to leave a slide on her window sill for a few days. And at Sibudu she takes samples for testing of the soil around the artefacts she excavates.

The replication and blind tests work has shown that ochre mixed with resin makes a far better glue than resin alone. Red ochre, finer than the yellows and oranges, is used. Resin is hygroscopic and in moist weather it will become sticky and lose strength, but the added fine powder of red ochre counteracts these effects. Marlize believes that ochre was used specifically to prevent stickiness of the mastic used for the hafting onto a shaft of carved bone in the Albany Museum collections. The ochre is only on the outside of the mastic. Similarly, ochre is only on the outside of a stick of resin, from Steenbokfontein on the West Coast in the Cape. Antoinetta Jerardino kindly shared unpublished information including a magnificent slide of this appropriately dubbed a 'glue stick' and it seems logical that the stick may have been heated on the end, rather like postal wax, for use when needed.

The 'glue stick' dates to about 2 200 years ago and although the ochre was probably used on it for functional purposes, i.e. to prevent stickiness, ochre was also used for ritual and symbolic purposes at about that time and probably as far back as 10 000 years ago. That ochre is used for symbolic purposes is not disputed. But Marlize's work has shown that ochre need not necessarily indicate symbolic use and ochre may instead be present for functional purposes. Ironically, it is the specialized knowledge of the functional properties of ochre that indicate the advanced thinking processes of the makers of the Howiesons Poort artefacts.

Marlize's work is brilliant because she approached a much discussed issue from a totally new angle, and produced outstanding results. We are proud to have a scientist of such distinction in our midst and delighted to have had such an informative and enjoyable review of her research.

A brief look at Aboriginal rock art and some archaeology in Abu Dhabi and Oman, by Rodney and Cilla Maud, 31 May 2006

The illustrated talk by Rodney (geologist) and Cilla (sociologist) arose from their visits to Australia via Dubai in late November 2005. Ayers Rock, or 'Uluru' as it is known to the Aborigines, is bang-slap in the middle of the Australian outback, in the semi-desert of Central Australia. It is a very powerful 'sacred site', or 'aboragine shrine' in the OZ idiom. Although it is quite a journey to get there, it is the most visited tourist destination in Australia. The car park for the famous sunset view of the rock is over a kilometre long.

Modern day Australians of Aborigine origin live in the vicinity of the rock and are responsible for its preservation and tourism management. Some portions of the Rock are 'out-of-



Uluru or Ayers Rock

bounds' to tourists due to their spiritual significance to the Aborigines. One can readily understand the significance of the Rock to the Aborigines. It is the only, and a major, feature rising above the horizon-wide encircling semi-desert waterless flat plain. Because any rain that falls on the rock runs off of it there are water pools at the foot of the rock, mainly on its west and southern sides and green vegetation. Climbing of the Rock was not possible on the day of Rodney and Cilla's visit due to threatened rain! At the time of their visit the pools were full and

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had enormous tadpoles in them - tasty 'bush tucker' no doubt. One can imagine the joy experience at arriving at such a 'paradise-like' place after a long waterless trek on foot across the surrounding semi-desert.

Cilla's impression of the rock is as follows:

'I don't think, despite what the geologists tell us, that Uluru is a big rock - I think it is a big monster, but not a malevolent one. It is a big friendly kind monster sleeping away in the sun. Why should it move? It's in a beautiful place with water and plants and birds all around, so it just slumbers. One day it might get up slowly amble about a little but I don't think it will go far. It will soon realise how pleasant it is just to be happily sleeping in the sun. That's why the place has such a spiritual, alive feel. It is not dead hard old rock - it is a living something!'

Rodney's interpretation of the rock is far more prosaic:

'It is bedded arkosic sandstone of Cambrian age that has been tectonically tilted such that the beds stand vertically. An extensive erosional plain developed across the top of the up tilted sandstone over the entire region, its former surface approximating to somewhat above the level of the present top of the Rock. Subsequently, after a change in drainage levels in the region, all the area surrounding the Rock was reduced again by erosion to the flat plain which now surrounds it, the Rock surviving as a monolith as a result of it having no significant fractures or joints in it whereby it could be weathered to depth and thereafter eroded away as happened to the rock material surrounding it!'

It is of interest that the Rock has numerous circular depressions on its top and sides that are identical to the 'rock tanks' on the exposed top of the Clarens sandstone at places here in South Africa, such as those seen by Branch members who journeyed to Mapugubwe in August 2005, where their significance in 'rain-making' was expounded by Professor Tom Huffman at the time. Of course Mapungubwe is also a powerful 'sacred site' if not an 'aborigine shrine'.

Many of the shallow 'shelters' eroded into the Rock around its base have Aboriginal rock art on their walls, the age of which is estimated to be within the last 5000 years or so. Aborigine rock art is not nearly as anthropocentric and as finely executed



as is our San rock art, but it is famous for some of it being of the 'x ray' type showing internal bones, etc, of animals and fishes. White and reddish brown colours predominate in the rock art at the Rock. Aborigine rock art apart from animals, abundantly features circles, and feathery leaf-like objects. The rock art generally depicts totemic inhabitants of the Australian landscape in the 'Dreamtime'. Cilla gave a fairly detailed account of Aborigine culture and its intimate relation to its mythology (religion)

and law which centre on what happened in the 'Dreamtime' of long ago, and which involves the interaction of ancestral people, plants, animals and physical features of the land then, and its continuation until the present. With a picture of the contrail of a jet plane at 12000m passing over Uluru on a flight from Sydney to Europe, the locate of the talk shifted to the Middle East, specifically the Arabian Gulf area of the United Arab Emirates (Abu Dhali) and Oman.

At the major town of Al Ain (The Springs) in the interior of Abu Dhabi, near the Oman Border, where it is real desert, Rodney and Cilla were fortunate enough to be able to join an excursion of the local Natural History Society on its visit to an important local archaeological feature, the 'Great Hilli Tomb' and the related structures of the settlement of which it formed part. This settlement obviously occurred in response to the springs which give the place its present name.

Much of the archaeological investigation that has taken place at Al Ain has been undertaken by foreign 'expeditions'; at present the French, and in the past the Danes. The local archaeological 'guru' at the Al Ain Museum, Dr. Willid Yasin, gave an onsite talk about 'Great Hilli Tomb' and the settlement to which it is related, which date from the Bronze Age 2500-2000BC. The tomb is a circular compartmentalised, presently dome-roofless, restored structure

of extremely well block-crafted and fitted limestone blocks. An excellently realistic pair of ibexes are carved on the block above the small mud-height entrance opening into the structure. Other similar cut block structures are either round, or rectangular, one round are having several rooms and an internal well. Very realistic leopards are sculpted on either side of the doorway to one of the structures. Usually only the foundations of the structures are present, but they are restored as far as it is possible to do so with the superstructure blocks which continue to be on each individual site. A considerable amount of human remains has been excavated on the site, on which excavations by the French continue each winter. Most of this site is located within an excellently maintained green-grassed and tree-d 'Archaeological Park' under the control of the Museum which is well used recreational purposes.



Great Hilli Tomb

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Rodney and Cilla were also very privileged to go with the same group on a quick visit into nearly Oman. At present there is no formal border between Abu Dhabi and Oman, but this is evidently due to change in the near future if it has not already done so. The part of Oman they visited is mountainous desert, virtually identical to the Richtersveld but it is even drier. A date-palm shaded valley oasis in this desert had irrigation works of Islamic age, comprising rock-cut channels and elevated channel-bridges. The oasis continues today to grow produce (mainly herbs) for the cities of nearby Abu Dhabi and Dubai. Of particular interest in this area is the occurrence at one locality, associated with a shallow grave with some human remains in it, of a heap of lumps of porous pale-coloured, slag-like, siliceous, lightweight material, and a number of clay balls with human hand and finger impressions in places in the 'slag'. The local hosts were at a loss identify the origin of this slag-like material, considering it to be possibly related to copper-smelting that might have been carried out in this region in which small localized deposits of copper are known to occur. Rodney, on the basis of his mineralogical as well as geological knowledge, had advised them that this possible origin for the 'slag' was highly unlikely as copper smelting slag would be both highly-coloured and heavy, which the material in question certainly is not. During discussion time following the talk Gavin Whitelaw suggested the material was vitrified dung, in this case of sheep, goat or camel origin. Vitrified dung is well-known in this country; our Branch recently hosted a talk about it by Leon Jacobson of the

McGregor Museum, Kimberley, who has made a study of this material. Gavin's suggestion has subsequently been advised to the Natural History Society in Al Ain, whose members can sleep more easily now. South African archaeology has thus been able to make a useful contribution to that of the Middle East!

San rock art pigments: the study of their composition and the possible implications of this study on the future of rock art research, by Boyd Escott, on 18 October 2006

There are thousands of prehistoric rock art sites throughout southern Africa. Most of the paintings have been attributed to Stone Age hunter-gatherers, the ancestors of the San ('Bushmen'). For many years these images have been the subject of intense scrutiny, with the focus on the nature of the subject matter, the meanings of the art, and possible dating techniques. An archaeometric study of Later Stone Age paintings in KwaZulu-Natal, undertaken by Boyd for his PhD. thesis, was conducted to investigate both the mineralogy and chemistry of San paints in order to determine their composition. The obvious benefit resulting from this research would be the development of improved methods of rock art conservation. Additional benefits might include the establishment of a system that would aid in relative dating, the identification of differing painting technologies related to both time and space and, possibly, the identification of exchange networks.

Maqonqo Shelter, located approximately thirty-five km south east of Dundee, KwaZulu-Natal, was chosen as the primary study site. Originally excavated in 1996,¹ this site was selected because it contains a large number of relatively 'poor quality' paintings. Thirty paint and three blank samples were analysed. Three additional sites were also sampled for comparative purposes, namely Twagwa Shelter (south coast), Sheltered Vale (southern Drakensberg) and Fergies Cave (central Drakensberg). Where possible, three blank, red and white samples were collected.

All the samples were mounted on aluminium stubs, and analysed in a Phillips XL30 environmental scanning electron microscope (ESEM), fitted with an EDAX detector. The samples were also analysed using synchrotron radiation at the National Synchrotron Light Source at Brookhaven Laboratory, Long Island, New York. Both the mineralogical and minor elemental compositions of the samples were determined simultaneously using this technique.

A comparison of these datasets highlighted the differences in composition between the colours both within and between the individual sites. It has been shown that the intensive analysis of micro-samples of even 'poor quality' paint samples, using a number of complimentary techniques, allows for the sourcing of the samples to individual areas. The determination of the inorganic component of the various paint colours has also indicated possible sources of the various pigments utilized e.g., orange is probably sourced from bauxite, red from haematite (not heated goethite), and white from whewellite (not kaolinite). Variations in the minor elements compositions in the various colours (both within and between the different sites) have also indicated a wide variety of sources for these pigments, and not one source as has been previously postulated. The mineralogical nature of the paints does give an important insight into the sensitivity of the individual colours to erosion, and indicates that the conservations practices currently employed should be modified to be site, and sometimes, colour specific.

It must be stressed that these findings are specific to the four sites studied only, and are not representative of all San Rock art. This preliminary study has shown the applicability of the methodology used, and its findings will serve as a basis of future research in this field. Further

work involving the analysis of paint samples in relation to the style of the paintings samples, as well as the determination of the organic components (if present) is envisaged.

¹Mazel, A. D. 1996. Maqonqo Shelter: the excavation of Holocene deposits in the eastern Biggarsberg, Thukela Basin, South Africa. *Natal Museum Journal of Humanities* 8: 1–39.

PAST EVENTS – OUTINGS

Excursion to sites on the KwaZulu-Natal South Coast, 13–14 May 2006

SATURDAY RAMBLINGS by David Holt-Biddle

Having been long and active members of the Transvaal Branch of ArcSoc, it was one of those very few things we really missed when we immigrated to the coast a couple of years ago – Saturday 13 May was a time warp back to ‘the good ol’ days’. We and quite a few other locals joined a group of out-of-towners from the KwaZulu-Natal Branch of ArcSoc on the first day of their weekend expedition to the Port Edward region, the Saturday covering the Red Desert and the Braemar Shelter in the Umtamvuna River gorge.

We met in the not-particularly-salubrious car park off the R61 at Port Edward, where we de-carred and en-4x4’d and headed for the Red Desert, an unimaginatively but accurately named local phenomenon. We had a leisurely walk among the *darsangs* (now how often does one get to use a Mongolian word? It means the weird and wonderful erosion-carved outcrops in the desert), with a talk by Rodney Maud on the geology of the place (we’d forgotten that Rodney is the showman-geologist, still insisting that there have been many changes in sea level over the past few million, or is that billion? years). Chrissie Sievers followed up with a fascinating chat around the archaeology, concentrating on the Sangoan Stone Age culture (a word derived from a site on Uganda’s Lake Victoria shore).



ESA artefacts

Some excellent examples of stone tools, from tiny scrapers to great hand axes, were identified by the experts and hefted by the non-experts. Question: did *Homo erectus* really cart his 2-3kg stone tools with him when he marched out of Africa to colonise the world? Surely he would have made new ones on the march. And a comment (from, I think, Gavin Whitelaw): the Sangoans, sort of somewhere between *Homo erectus* and early *Homo sapiens*, would have looked much like us, just their heads would have been different. A lively debate (with interjections from the desert floor) developed between Rodney Maud and Tony Abbott (the local botany fundi) on the exotic (or not)

vegetation that is encroaching on the desert. And good news for the Red Desert is that it may soon be declared a nature reserve or possibly a heritage site – either way it will come under much needed protection. A bird highlight for us was a Gurney’s sugarbird on a protea and an Orange-throated longclaw, both good spots.

The expedition then headed for the Umtamvuna River gorge. The last stretch to the gorge was something of a 4x4 obstacle course, the mud jumps being of particular interest. The 4x4s managed well enough, but the hero of the hour was archaeologist Gavin who roared through it all in his Citi Golf, putting the macho machines to shame! We had our picnic on the edge of the magnificent gorge, which stretched into the blue distance to the left and right of us, before Tony Abbott led the scramble down the northern face of the gorge to the Braemar Shelter, where more archaeological and geological phenomena were found and discussed.

It was a great day, reminding us that as much as we love the Deep South, we do miss ArcSoc, the talks, the outings, but particularly the like-minded people.



Windhoek on the edge



Brandewyn & coke on the edge

SUNDAY STROLLINGS by Chrissie Sievers

The congenial Saturday Ramblings continued on Sunday with a stroll south along the beach from the Wild Coast Sun to view Cretaceous fossil deposits. The fossil expert, Rodney Maud, was on hand to extol impressive names and dates and his contribution and the wonderful fossils were suitably appreciated. When Cilla Maud headed into the waves, others followed suit and splashed with gay abandon.

The next stop was the information kiosk relating to the wreck of the São Joao in 1554 and Gavin Whitelaw supplemented the interesting information provided while we gazed across the bay to the scene of the wreck. Some dolphins passed by.

Final stop was the lighthouse and some energetic members ran up to the top for the magnificent view, while others settled down for a delicious lunch, followed by excellent locally-grown coffee: a great finale to a most enjoyable weekend.

Hiking trip to the rock art site of Eland Cave in the Cathedral Peak area, 16–18 June by Mary Furnivall

A few days before our Eland Cave trip, the temperature in the `berg registered minus 2 degrees. After an early start on Friday 16, we drove through thick mist and drizzle, until, suddenly, beyond Estcourt, we left it all behind, for blue skies and perfect hiking weather. With stunning views of the Cathedral range, we assembled at Didima Camp, with Boyd Escott our leader. We were driven to Solar Cliffs, and set off on foot. Decisions had to be made at river crossings - boots off and a cold paddle, or risk boulder-hopping on the slippery rocks. We were a party of ten, with ages ranging from 11 - 60 plus. With heavy backpacks, we climbed through the indigenous forest of the Didima valley, which is the largest forest of its kind in the Drakensberg area. We rested beside a sparkling waterfall, where it plunged into a large rock pool. Some of the inclines were not for the faint-hearted!

From the shelter of Leopard Cave, we collected water from a nearby stream, and around camping-gas stoves, we satisfied our hunger, and chatted into the night, tucked-up in our cosy sleeping bags. Early next morning, a short, steep climb to open grassland, gave us wonderful



views of Cathkin Peak, Sterkhorn and Champagne Castle in the distance. At Eland Cave, after a picnic beside the spectacular waterfall, we feasted our eyes on the numerous San paintings across the extensive cave sandstone rock face of the large cave, and marvelled at the artistry. There is much superimposition of the many beautifully painted eland, and a large variety of other images, totalling well over a thousand. There is so much to see, we appreciated having time to explore. And, yes, we saw the moth! Boyd pointed out the high, rocky

ledge where the Bushman`s hunting kit, with bows and arrows, was found by a local farmer, Mr J. S. Lombard, in 1926.

After a second night in Leopard Cave, we made our way back to base, with many memories of great company, wonderful Drakensberg views and amazing rock art.

Cradle of Humankind Excursion, 23–25 September by Mary Furnivall

Ten members of our branch met at Café Fino, at the South African Rock Art Museum at Wits University, on Sat. 23 Sept. 2006, for an alfresco lunch at the start of our Cradle of Humankind Trip. The motto of the Origins Centre, which houses the museum, is “WE ARE WHO WE ARE BECAUSE OF WHO WE WERE“. We wandered with audio guides through a fascinating journey of discovery of our human heritage and we explored the origins of humankind in Africa and the development of art, symbolism and technology depicted with visual displays, touch screens and film. We enjoyed the creative exhibits of the San (Bushmen), their lifestyle, beliefs and rituals, and their wonderful art. Our visit ended in the museum bookshop, with its many books and handcrafted items.

Next day, Heritage Day, we were ahead of the crowd for an early visit to Maropeng (‘returning to your place of origin’) with its exhibition of 3.5 million years of evolution. The approach to the Tumulus Building is impressive, with its large burial mound format. Due to a visit by local dignitaries, the boat trip was out-of-bounds, but we proceeded through the large underground attraction, with its information offered in interactive and visually exciting manner, suitable for all ages to appreciate milestones in our past, including a collection of original fossils. On exiting the building, the futuristic architecture is symbolic of the new.

A ten kilometre drive took us to Sterkfontein, where we were privileged to have a lecture by Mandy Esterhuysen, seated beside the bronze bust of Robert Broom in the most appropriate setting of Sterkfontein Caves. Mandy took us through the evolution of hominins, with models of relevant skulls, and referred to Prof. Ron Clarke`s discovery of “Little Foot“.

We proceeded to Swartkrans, where Bob Brain devised and implemented methods of excavation which are still followed today. It was also at Swartkrans that evidence was found to suggest that *Homo sapiens* began to control fire approximately 1.5 million years ago.

Our official tour completed, we went our separate ways, to review and digest so much knowledge from a most stimulating weekend.

SNIPPETS

Aztecs and the Avo or ‘testicle tree’ (adapted from *New Scientist*: 9 September 2006)

The Avocado originates from the forests of Central America and was originally the size of an olive. Avocados were cultivated to their present magnificence by local people such as the Aztecs who called them *ahuacacuahitl*. This name, after some linguistic mangling by the Spanish, was written down as ‘avocado’ by the British collector Sir Hans Sloan, in the first full description of the plant in English in 1699.

Ahuacacuahitl means ‘testicle tree’ and the name and the shape of the fruit earned it such a salacious reputation among the Spanish conquistadores that the local monks deemed the tree to be a promoter of lust and banned it from their monastery gardens. The idea of an aphrodisiac avocado was revived in the 1920s by an importer in the US, who when stuck with a huge shipment of the fruits in danger of rotting in the warehouse, rang various newspapers and furiously denied the ‘scurrilous rumours’ that avocados raised sexual potency. The result was massive public demand and an empty warehouse.

The Avocado belongs to the family Lauraceae, as do other economically important species such as cinnamon, camphor and bay leaves. Locally, the family is represented by important timber trees such as *Ocotea bullata*, the stinkwood, famous for its lustrous dark wood. The small ‘wooden balls’ one sometimes finds washed up on the beach are the fruits of another Lauraceae species, *Cryptocarya latifolia*, the broad-leaved quince. Not surprisingly, the colloquial name for this species has no sexual connotations.

Flint heads were Neolithic tooth drill of choice (*Reuters* 04.05.06. Kindly forwarded by Carole Goeminne, the Archaeological Society secretary in Cape Town)

Long before the invention of electric drills and anaesthesia, people drilled teeth to treat decay. In the absence of modern metal tools, the Neolithic drill of choice 9 000 years ago was a flint head, according to Roberto Macchiarelli of the University of Poitiers in France.

While excavating in Pakistan, Macchiarelli and a team of international scientists found drilled molars from nine adults in a grave dating from 7 500 to 9 000 years ago. The four females, two males and three people of unknown gender, had a total of 11 drilled teeth. One had three drilled teeth and another, a tooth that had been drilled twice. Four teeth showed signs of decay associated with a hole, indicating that intervention in some cases may have been therapeutic or palliative. Some type of filling may have been used but there was no remaining evidence to confirm it.

Macchiarelli presumes that the know-how was originally developed by skilled artisans for bead production, and then was successfully transferred to drilling teeth in a form of proto-dentistry that continued in the area for about 1 500 years.

Selfless chimps lend a hand (*New Scientist*: 17 March 2006)

Altruism is often thought of as something uniquely human, but it turns out chimpanzees can be selfless too. Felix Warneken and Michael Tomasella of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, watched the reactions of three captive-raised young chimps when a familiar caretaker dropped an object out of her reach. All three chimps were more likely to pick up the object and hand it to the caretaker when she reached for it than when she merely looked at it (*Science*, vol 311, p1301). This suggests that the chimps understood the human's goal and tried to help, Warneken says, even though they received no reward or praise. Human toddlers also helped in this way and performed other, more complex helping

tasks. "A tiny bit of helping behaviour is already present in chimpanzees, but they are not as flexible as human infants," says Warneken.

Such altruistic helping behaviour is common in humans, but had never been documented in other animals before. The discovery implies that some of the underpinnings of human sociality may have been around for millions of years.

A snippet for sports' fans: Australians were already running at 20km/hr 20 000 years ago. (*Journal of Human Evolution* 50: 405)

Scientists from the University of Melbourne have found 20 000 year-old footprints left by at least 12 individuals, both adults and children, in soft ground in south-eastern Australia. They found 457 prints and their spacing showed that the people walked, trotted and ran at up to 20km/hr. The individuals were not only fast, but tall too: the sizes of the prints show that some of the people were almost 2 metres tall. And they were probably good at outdoor sports as well: lines and holes alongside the footprints suggest that some of them may have been carrying sticks or spears.

The Dikika baby, Salem (<http://www9.nationalgeographic.com/ngm/dikikababy>)

Ethiopian palaeoanthropologist, Zeresenay Alemseged has discovered the fossil bones of an almost complete 3.3 million year-old child. National Geographic reports that it is a curious coincidence that the world's oldest baby, who died while still of nursing age, lived her short life in a region named Dikika—"nipple" in the local Afar language, after a distinctly shaped hill. The hill is just across the winding Awash River from Hadar, the site in Ethiopia's Rift Valley where many fossil hominins have been found, including the famous 3.2 million year-old adult female, Lucy. The new little girl of presumably three years old, belongs to the same species, *Australopithecus afarensis*, as Lucy and has been named 'Salem', an Ethiopian word for peace.

The first sign of the momentous find was the Dikika baby's tiny face peering out from a dusty slope. It was no bigger than a monkey's, but a smooth brow and short canine teeth told Zeresenay right away that this was a small hominin. His team had struck fossil gold, for not only was the baby's skull in perfect shape, but tucked beneath the head in a hard ball of sandstone were many bones of the upper body as well.

After five years of painstaking etching away of the sandstone, Zeresenay's dentist's drill has revealed details rarely seen in a fossil australopith, among them a full set of both milk teeth and un-erupted adult teeth. All of the baby's tiny ribs were positioned, as in life, along a sinuous spinal column. Several fingers were still curled in a tiny grasp, and where her throat once was, Zeresenay found a rare example of a hyoid bone, a bone that later became crucial to human speech. The discovery offers an early glimpse of the evolution of the human voice box.

From the waist down the Dikika baby looked like us. One of her humanlike knees was complete with a kneecap no bigger than a dried pea. But her upper body, like Lucy's, had many apelike features. Her brain was small, her nose flat like a chimpanzee's, and her face long and projecting. Her finger bones were curved and almost as long as a chimp's. Her two complete shoulder blades, the first ever found from an australopith, were similar to those of a young gorilla—a shape that might have made it easy for her to climb. *A. afarensis* walked on two feet, but some scientists think this species also spent time in trees.

As apelike feet evolved to support and propel an upright body, they could no longer grasp objects with a thumb-like big toe, as the feet of chimps and other apes can. For hominin mothers and infants, the consequences were momentous: while chimp babies cling to their mothers' hair

with muscular hands and grasping toes, a baby hominin probably had to be carried, limiting the mother's ability to provide for herself. She may have had to depend on her mate and the larger group—which may have strengthened social bonds and could help explain why humans are largely monogamous, unlike most apes. Brain evolution expert Dean Falk speculates that the helplessness of baby hominins could even lie at the root of speech, which could have evolved from "motherese," the sounds a mother makes to comfort her baby when she has to set it down.

The Dikika fossil also hints that brain development may already have started to take longer, a change that prolonged the dependence of human young on their parents. From the Dikika baby's teeth, the team estimated her age at three years; her brain, preserved as a sandstone cast inside the skull, had a volume of about 330 cc—roughly the same as a small three-year-old chimpanzee's. This could mean her brain was growing no faster than a chimp's, so it might have taken longer to reach its adult size, slightly larger in an australopith than in a chimp.

During human evolution, ever longer brain growth led to the extended period of dependence we call childhood. In most mammals, including other primates, the young move on to forage for themselves after they finish nursing. In the Dikika baby, Zeresenay already sees hints of this uniquely human life stage. Holly Smith, an expert on hominin development at the University of Michigan, sees the beginning of a longer childhood as a sign that human ancestors were also living longer than their ape cousins, a trend that ultimately led to humans outliving other apes by decades.

Growing bigger brains had other consequences. A fifth of the calories you consume go to fuel your brain. Within a million years of the Dikika baby our ancestors learned to supplement the mostly vegetarian diet of Lucy and her kin with nutrient-packed meat, devising stone tools to strip flesh and crack bones for the protein-rich marrow. Good nutrition made even bigger brains possible. And that led to more inventions, and then bigger brains. The rest is history.