

ARTEFACTS

Reports covering the period July to December 2012

EVENING LECTURES

Geological evolution and landscape development of the Lowveld and Mpumalanga escarpment (14 June 2012)

Morris Viljoen, Professor Emeritus in the Department of Mining Geology, University of the Witwatersrand

Prof. Viljoen's excellent talk began with an overview of the geological superlatives of the region. Amongst these is the scenic Barberton Mountain Land Greenstone Belt with its remarkably well-developed and well-exposed ancient Archaean rocks dating from 3,5 thousand million years ago. The earth's environment at the time is depicted in a painting by Maggie Newman, which shows a primordial ocean with a large moon (closer to earth at that time), meteorite bombardment and early algal colonies of stromatolites with an eerie mauve sky resulting from an absence of oxygen and ozone in the atmosphere. Primitive volcanic rocks known as komatiites and described by him for the first time from the Komati River Valley are now famous the world over and include pillow structures and the unique spinifex texture, a super cooling texture, both of which indicate rapid crystallisation below water. The remains of primitive life forms akin to cyanobacteria and algae have been found in black carbonaceous sediments that were deposited between the lava flows.

A range of granite rocks have intruded the greenstone. These include grey gneiss and more resistant potassium and silica-rich granite that give rise to the rugged terrain of the Nelspruit-Whiteriver-Hazyview region. The weathering style often results in the formation of domical monoliths or exfoliation domes, such as Legogote (the Lion), an iconic peak to the east of Whiteriver. The dramatic escarpment edge is formed largely of the resistant quartzites of the Wolkeberg and Transvaal sedimentary basins that cover the basement granites. Overlying the above is the dolomite formation with distinctive, resistant, silica-rich chert layers, as well as domical algal stromatolites.

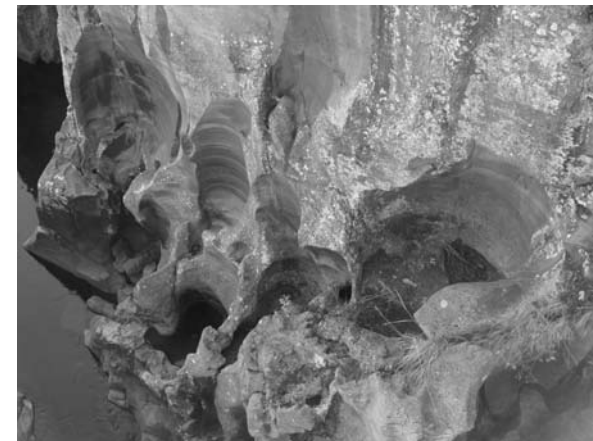
Along the eastern border of South Africa and running through the eastern side of the Kruger National Park are sediments and volcanic rocks of the Karoo Supergroup. They overlie glacial debris deposits known as the Dwyka tillite and are testament to widespread glaciation some 300

million years ago that covered the whole Gondwana continent. The lowermost beds of the Karoo basin contain plant fossils including coal deposits. The overlying strata and particularly the Clarens sedimentary formation contains fossils of the earliest dinosaurs, the prosauropods, in particular a species known as *Massospondylus*. The Clarens formation also contains fossils of the earliest known mammal. The Thulemela archaeological site is situated on an up-faulted block of Clarens sandstone.

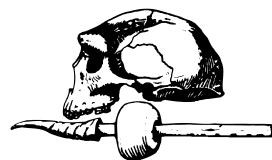
The overlying basaltic lavas of the Karoo give rise to a subdued topography and fertile, clay-rich soils, while the overlying light-coloured resistant rhyolite lavas give rise to the Lebombo range. Uplift of the interior of South Africa and erosion by the Lowveld rivers has given rise to the present landscape. Harder formations have been cut through by rivers such as the Sabie, Crocodile and Blyde to form gorges. Waterfalls or cascades were created by a process of potholing on harder rock formations at so-called nick points along the rivers. Thus harder, siliceous, granite sheets have given rise to the Montrose waterfall and the cascade at the Lowveld botanical garden. The MacMac and Sabie waterfalls are controlled by Black Reef quartzite, while the Horseshoe, Lone creek and Bridal Veil falls are controlled by a resistant chert layer at the top of the dolomite formation. The process of potholing through harder rock formations is well demonstrated at Red Rocks in the Kruger Park where a spectacular potholed pavement has been created by the Shingwedzi River flowing across the Clarens formation. At the junction of the Truer and Blyde Rivers at Bourke's Luck is another spectacular example of potholing in Black Reef quartzite. The erosive power of rivers is dramatically shown by the spectacular gorge cut by the Blyde River to form the Blyde River canyon.

Finally, the dissolving of dolomitic structures by weak ground acids has resulted in the formation of caves such as Sudwala and Echo. Here precipitation of the dissolved calcium carbonate in the water has resulted in the formation of stalactites and stalagmites. The same process at waterfalls by water charged with calcium has given rise to so-called calcareous tuff and deposits such as the one seen at the Strydom tunnel on the Abel Erasmus Pass.

Report by Prof. Morris Viljoen



As with many other gorges on the Mpumalanga escarpment, in the Blyde River gorge at its junction with the Treur River a process of potholing has formed geological formations of the type seen at Bourkes Luck (image: Morris Viljoen)



A publication of the Trans-Vaal Branch
South African Archaeological Society
PO Box 41050 Craighall 2024
Editor: Reinoud Boers
Production: Marion Boers

New discoveries at Blombos Cave (19 July 2012)

Dr Sarah Wurz, Senior Researcher, Institute for Human Evolution, University of the Witwatersrand

Sarah Wurz gave us a most interesting and well-presented talk on Blombos Cave and recent findings there. Sarah works at Blombos with Chris Henshilwood, who discovered the cave on his family farm in 1992. The cave is midway up a cliff on the Eastern Cape coast some 300 km from Cape Town. It is famous for a number of discoveries, namely 77 000-year-old engraved ochre blocks that represent the earliest-known example of rock engraving, perforated beads of similar age that also indicate symbolic thought, and now a 100 000-year-old ochre processing toolkit. Ochre is red or yellow rock containing oxides that had many uses for hunter-gatherers, including body decoration and as an ingredient for paint used in rock painting.

Middle Stone Age (MSA) levels at Blombos have been divided into three phases: phases M1 and M2 date back about 78 000 to 72 000 years and contain Stillbay bifacial points, bone tools, engraved ochre and bone, and shell beads. The M3 phase, consisting mainly of Aeolian dune sand, contained the ochre processing kit consisting of abalone shells, a cobble stone and fragments of burnt spongy bone that would once have been rich with marrow bone, which may well have been used as a binding agent. No wax was present at the site so it could not have been used for hafting purposes. Many thousands of chips of ochre less than 5 mm in size were also found. A second toolkit was unearthed close by. Quartz and quartzite chips were also present, which suggests that the ochre was crushed with sandstone.

M3 was the populated period at Blombos. The diet of the inhabitants included abalone, both black and sand mussels, and winkles. A wide variety of animals were hunted from eland to hyraxes, tortoises, dune moles, etc. It is thought that hafted bone spears were used in the hunt. Fish bones were also found. The teeth of five to seven individuals, mostly juveniles, were also discovered.

Blombos is the site of ground breaking research and cutting edge technology. Research is focusing on the effects of climate change on human behaviour.

Report by Noni Vardy

[For a detailed report on the 'paint factory' discovered at Blombos, see *The Digging Stick*, December 2012.]



Cobble being removed from the Toolkit 1 abalone shell showing the ochre compound within the shell (image: G Moëll Pedersen)

Remember: www.archaeology.org.za for branch activity and books for sale

Accessing Aksum's hidden treasures (2 August 2012)

Peter Rich, principle partner of Peter Rich Architects

Aksum, the capital of the ancient Aksum Empire that stood at its peak from AD 200 to AD 700, is the most ancient city south of the Sahara, according to Peter Rich. Aksum maintained relations and traded with the Roman, Greek and Persian empires. Situated in today's northern Tigray province of Ethiopia, near the border with Eritrea, this World Heritage Site is not only a great archaeological treasure, but also a remarkable pre-Christian and subsequent Ethiopian Orthodox Church site.

Peter Rich and his team were asked to improve the quality of the visitor's experience of the archaeological sites in accordance with the Tigray Tourism Authority's Thematic Master Plan. The brief covered areas of interest in radii of 10 km and 100 km. In the process, Peter Rich Architects engaged in rewarding consultation with British (including Aksum archaeological expert David Phillipson), German, Italian and Ethiopian archaeological teams. The exploration of Aksum's physical fabric and environment revealed surprising ways in which people over time adapted to circumstance. The design interventions adopted are an example of how cultural tourism can be used as a lever to improve the quality of people's lives. A 3-D development plan was created that not only addressed the upgrading of historic, religious and legendary sites, but also addressed other aspects such as a tourist office, interpretation centres, ticket offices, vendor décor, toilets, wheelchair access, shade areas and the style of notices (in stone rather than on boards). Cobbled roads are planned and street edges are to be restored.

Various tourist routes have been proposed. The first of these is an historic Axumite route taking in the stelae field with its up to 33 m high stelae, various tombs and ancient structures. At present the stelae field with its car park right in front, support wires, tombs covered by sheds, etc. is a let-down. A German museum is to be re-activated and fallen parts of thrones and new archaeological discoveries being made all the time are to be incorporated in the route. So are the incredible archaeology on the hill behind the stelae field, restored tombs underneath the large stelae, the 4th century tablets that record victories in three ancient languages – Sabeian, Ge'ez and Greek – and the distant quarry where the stelae were carved from the rock in one piece.

The second route is to cover Aksum's legends. This will include Mai Shum, know as the 'Bath of Sheba', the Dongar ruins, claimed to be Queen Sheba's palace, and the Gudit stelae field, which is said to mark the Sheba's tomb. The question is, Peter said, how the mythical history of the Queen of Sheba can be represented in an auditorium situation. Recently a British researcher claimed to have found evidence of Sheba's mines in the area. Another route would cover the religious history of Axum: the site of Axum's original temple built in the 4th century, the chapel where the Ark of the Covenant, taken by Menelik I from his father, King Solomon, and brought to Ethiopia some 3 000 years ago,



One of the main stelae in the Aksum stelae field (photo Reinoud Boers)

supposedly rests, the beautiful Tsion Maryam monastic church and the modern, less delightful church built by Haile Selassie, as well as the religious platforms found all over and other churches or their remains. Religious festivals, such as the Burning of the Cross in September and the 12 religious pilgrimages that visit Axum each year need to be catered for. Ownership has to be given to ancient church books and relics, but the politics of it all is hectic. It was very important to create a sense of self-worth among the local people, especially in the clerical community.

Other routes that could be considered are a gold route, which would include a gold museum, a silver route and a textile route. A variety of cultural aspects would be covered, such as the amazing Axumite houses, the *audicule* room in a local home, local food and drink, and a traditional coffee ceremony. In all this human dignity needed to be considered. Beyond Axum, the master plan covers Yeha with its 2 700-year-old Sabean temple in a remarkable state of repair, with stonework the same as is found in Yemen, the Debre Damo monastery and the Adwa Mountains where Menelik II defeated the Italians in 1896, thus preventing Ethiopia from being colonised.

This project, according to Peter Rich, is to be a partnership and the aim is for it to be a real heritage project. The implementation challenges are great. For a start, it is dependent on Ethiopian government funding for the civil engineering works and paving. We can only hope that it comes about.

Report by Reinoud Boers

Old Broom made a clean sweep – *Australopithecus*, *Paranthropus* and early *Homo* (30 August 2012)

Professor Ron Clarke, Reader in Palaeoanthropology, Institute for Human Evolution, University of the Witwatersrand

Ron Clarke gave a most interesting presentation to Archsoc. He commenced by giving some background on the discovery of *Australopithecines* in South Africa. Robert Broom found the first known adult *Australopithecus*, named ‘Mrs Ples’, at Sterkfontein in 1936, and subsequently went on to find many more *Australopithecine* fossils at that cave. Some of the fossil bones collected from Sterkfontein were rediscovered by Ron Clarke in 1994 in the Wits storerooms, where they had been lying untouched for many decades.

In the 18th century, Carl Linnaeus, the ‘Father of Taxonomy’, had suggested that four types of early man were related to apes. At this time there was some knowledge of apes, but knowledge of gorillas only emerged in the 19th century. In 1774 James Burnett (Lord Monboddo) suggested that human progression could be found in Africa.

Sterkfontein Cave was opened up for lime mining in 1888 by G Martinaglia from Italy. Stalagmites and stalactites were blasted from the cave and burned in kilns to produce quicklime. Remains of four of these lime kilns can still be seen today. On Broom’s fourth visit to Sterkfontein, the site manager, a Mr Barlow, handed him a brain cast. He continued to give Broom anything of interest recovered, amongst these a fossil of *Paranthropus robustus* that had been found at Kromdraai. A school boy, Gert Terblanche, had given these to Barlow. Gert duly pointed out the site to Broom, who went on to find the rest of the fossilised remains. In 1938 Broome, then aged 72 years, said that if he lived another eight years he might be able to find more! Nine years later he found the complete pelvis, proving that *Paranthropus robustus* was bipedal. Sixty-six years after Broom’s first find at Sterkfontein, a molar and another tooth were discovered in the lime dump. These teeth were so different that they were put into a new category, but the

palaeontologists were unaware that they had lumped two species into one individual.

Swartkrans Cave is rich in *Paranthropus* remains. Some had sagittal crests and very large molars. Lots of mandibles with small canines and front teeth were also found. *Paranthropus* lived from 2,5 million years ago to about one million years ago. Mary Leakey also found *Paranthropus* dated at 1,8 million years ago, but with a much larger skull. *Paranthropus* had a cranial capacity of 530 cc and was found in association with Acheulian tools at Sterkfontein.

Searching through a box of monkey fossils in 1994, Clarke discovered hominid bone fossils that came from an *Australopithecus* skeleton that was subsequently called ‘Little Foot’. Included in the find was one of the shinbones that appeared to have been broken off relatively recently. Also included were bones from both the right and left feet. Ron asked his two technical assistants, Stephen Motsumi and Nkwane Molefe, to search for the other part of the shinbone. Using only hand held lamps they found the matching bone after just two days. It turned out that the whole skeleton was there. A hand was found with the thumb folded into the fist, making ‘Little Foot’ somehow ‘human’, and also avoided the hand being misinterpreted as a foot. Flowstone separated the legs from the body. The flowstone has been dated at two million years ago, which therefore makes ‘Little Foot’ older. It is estimated that ‘Little Foot’ is at least 3,0 to 3,5 million years old.

The ‘Taung Child’, classified as *Australopithecus africanus*, had small canine teeth. The teeth from Sterkfontein Cave are considerably different. To date, Little Foot’s skull is almost completely released from the rock and they researchers have both complete legs. *A. sebiba* is very different to ‘Little Foot’ as it is more like *Paranthropus*. *Australopithecines* are not necessarily ancestral to *Homo sapiens*. Both *Paranthropus* and *Australopithecines* are found in parallel, which does not mean that they lived together, but they certainly frequented the same regions.

In the same deposit, remains of large monkeys and cats have been found, suggesting that the area was forested. It will be several more months before the whole of ‘Little Foot’ can be separated into a recognisable form, but it is hoped that this will take place this year.

Report by Noni Vardy

ANNUAL SYMPOSIUM 2012

Six types of artefacts and why they are important to archaeologists

20 October 2012

Zooarchaeology – Pleistocene to Holocene faunal studies

Dr Shaw Badenhorst, Curator, Vertebrate Department, Ditsong National Museum of Natural History, Pretoria

The first speaker of the day was Dr Shaw Badenhorst of the former Transvaal Museum in Pretoria. He explained that zooarchaeology (or archaeozoology) is the study of animal remains such as bone, teeth and shell from archaeological sites. Taphonomy informs

zooarchaeologists about changes that bones have undergone since the death of the animal until the remains are analysed in the laboratory. Zooarchaeologists have an intimate knowledge of animal skeletons. By studying these archaeological remains, information is gained about a wide range of aspects, including dietary practices, environmental conditions, the spread of domestic animals throughout the world and social relationships. Bones from a site are compared with bones from the modern skeletal collection. As the bones are often fragmented, it can be difficult to identify them, and the zooarchaeologist has to work down through the categories of order, family and genus. Many bones can often only be identified to family level. The Ditsong museum's department of archaeozoology houses one of the most extensive animal skeletal collections in Africa. Most mammals found in southern Africa are represented in the collection.

Faunal analysts provide information to archaeologists on many aspects of past human communities. These can be diet, the domestication and spread of animals, herd management and health, the size of a community, ritual practices, social relations between groups, the state of the environment, the relative dates of material, and agents of accumulation. For example, there can be evidence of the social practices of feasting, trade and meat provisioning and how the environment changed over time. Studies are divided into the broad categories of Early, Middle and Late Stone Age, and Early, Middle and Late Iron Age (IA), and the historical period. During the Stone Age, sheep were present in Namibia at 2300 years BP. During the IA, black migration patterns are characterised by the presence of cattle, sheep, goats and chickens, and during the historical period, settlers from Europe introduced pigs, horses, chickens and cats.

A site currently being studied, Shaw Badenhorst told us, is Bolt's Farm, an 1,3 km² area near Sterkfontein, where there are more than 30 fossil localities dating to between 4,0 and 4,5 million years ago. Extinct warthogs have been found and faunal correlations are being used to compare the material with that found at other sites, such as Makapansgat. Another site under investigation is Bushman Rock Shelter close to Ohrigstad in Mpumalanga. Here, 66 000 bones have been found, of which only 20 per cent have been identified to date. There are the remains of tortoise, land snails and microfauna. The shelter is complex and it seems that people did not live there continuously. During the gaps in habitation, other animals probably moved in and their remains became mixed in with human remains. It is hard to separate the two, which is done by looking for faunal signatures. These could be carnivore and raptor damage, or evidence of butchering and burning. Often many hyrax skulls are found, but different animals feed differently on dassies. Eagles would leave beak marks, whereas carnivore such as leopards would fracture the skull to remove the brain and tongue. Humans would butcher and then cook the animal in a fire. Long bones would be fragmented to remove the marrow and such bones could be scattered. Tortoise shells burned on the outside show evidence of having been cooked by humans. There can be natural intrusions such as frogs and small birds, or rodents brought in by owls. The challenge is to ascertain which species in a shelter belong to the human diet. In an open site it is more clear-cut. If snail shells are burned they are thought to have been eaten, but it must be kept in mind that snails also aestivate.

It is established that cattle and caprines (sheep and goats) appeared in southern Africa about 2000 years ago. Their role in IA farming communities has been the subject of debate for some time. Did their role change over time? The Central Cattle Pattern theory suggests that cattle have been the most important domestic animals since the EIA and that society was patrilineal from the time that the first farmers settled in southern Africa during the EIA in the first millennium AD. However, caprines, being timid and small, run in flocks controlled by women. In addition, horticulture is often practised by women. The opposing theory is that during the EIA the society was matrilineal and that it became patrilineal only later. Dr Badenhorst has developed an index to

measure the ratio between cattle and caprines, called the Cattle Index or CI, which can be used to measure the dominance of cattle. We were reminded that to this day, in Venda and Shona society, women play a powerful role.

We were left with the thought that the painstaking work of studying the bones of long dead fauna can reveal much about the past.

Report by Pamela Küstner



ArchSoc 2012 Annual Symposium presenters: (fltr) archaeozoologist Dr Shaw Badenhorst, bead specialist Rina Faria, archaeobotanist Chrissie Sievers, ceramics archaeologist Dr Ceri Ashley, maritime archaeologist Jaco Boshoff and archaeologist Prof. Karim Sadr. Missing from the photo is MSA archaeologist Professor Emeritus Lyn Wadley. (Photo: Graham Reeks)

Understanding archaeological ceramics: examples from eastern and southern Africa

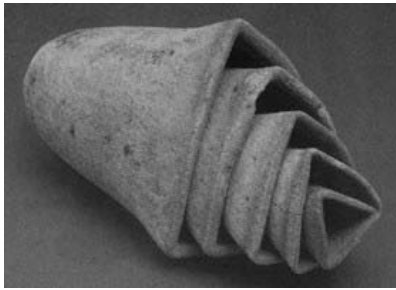
Dr Ceri Ashley, Senior Lecturer and Archaeological Programme Coordinator, Department of Anthropology and Archaeology, University of Pretoria

Dr Ceri Ashley addressed the questions of why ceramics are so useful in the archaeological record and how to extract information from them. According to her, the advantage of ceramics is that they are plentiful and they survive much longer than organic materials. Yet they are also fragile. So, while there is an abundance of sherds, there are fewer intact examples. Another advantage of ceramics is that clay, the raw material, is very versatile and can take on many forms from the ordinary and mundane like crockery, storage vessels and roof tiles to specialist objects like crucibles designed for high-temperature use by alchemists, the terracotta soldiers in China, and the Ganda beer pot. Ceramic go back 15 000 years and for archaeologist to tell a story based on ceramics they need to be able to rank them in terms of age. This was the system used to date sites prior to carbon dating and it was based on the premise that sophistication increased over time. If similar pottery was found across numerous sites then archaeologists assumed that the sites dated from similar periods.

Archaeologists use the shape of ceramics to provide explanations about their functions, which then informs them about the practices of the time. For example, a pot with a side spout was probably used to contain liquid, clay pipes were used for smoking, amphora were used for storing liquid. Decorations and embellishments on ceramics also provide meaning. The maker of the

ceramic often added embellishments to express a common identity and this may indicate aspects of the social interactions of the group. For example, raised bumps on a Zulu pot could mirror tribal markings (body scarification). Although some decorative variability of pots is expected within a group, other variability found on ceramics may be imported from different tribes. Archaeologists regard the presence of such variability as an indication of social interaction and are thus able to build up an idea of regional interactions.

Although pot sherds are plentiful and may appear to have no value, archaeologists can extract useful information from them using a number of modern analytical techniques. Firstly, petrology, which investigates the microscopic structure of the sherd, enables archaeologists to establish the composition of the raw material used to make the ceramic. From these investigations it has been found that a range of different clays are used and that each region and possibly even each potter uses unique combinations of clay, gravel and organic material. Recipes are as distinctive as the style and decoration of the ceramic itself. Petrology also enables archaeologists to track the movement of ceramics. For example, some hunter and gatherer societies have been found with pots made a distance from the clay source, which indicates trade between various group.



C15th Hessian crucibles for alchemy



Ganda Beer pot, British Museum (Barley 1994)



Zulu pottery (Barley 1994)

Second, ultra-violet light can be used to examine a thin section of a ceramic. This technique enables archaeologists to establish how a pot was constructed. Two techniques dominate in Africa: either pots are made by winding a coil of clay or they are made by manipulating a lump of clay. Although the embellishment on the pot can change, the construction technique usually remains unchanged and so a ceramic can be linked to a particular group. Firing conditions, such as the firing time or the furnace temperature, can also be established by investigating the microscopic structure of a ceramic as different crystals are formed at different temperatures and each reflects ultra-violet light uniquely. Finally, a sensitive chemical technique (LCMS – liquid chromatography mass spectroscopy) can be used to confirm the function of the ceramic as it enables the fats embedded in the ceramic to be identified.

Ceramics are an ubiquitous archaeological resource that provide information about the social practices of societies. New methodologies enable archaeologists to contribute an ever increasing range of information.

Report by Louise Mackechnie



Stories set in stone: what lithic tools tell about past behaviour

Lyn Wadley, Professor Emeritus, School of Geography, Archaeology and Environmental Studies, University of the Witwatersrand

Stone tools tells us how they were made and what they were used for, they provide a cultural sequence and demonstrate the cognitive complexity of the thinking of the people who made them. Prof. Lyn Wadley described the kinds of stone tools, how they were made and what they were used for.

Stone tools bear traces of the technical methods used to make them

Knapping was done with hard stone hammers. Stone axes, for example, have a clear point of impact and a bulbous scar. Knapping was also done using soft hammers like wood, bone or antler. Tools produced this way show a diffuse bulb and have a thin curved profile. The retouching of tools with robust or sharp hammers resulted in pressure flaking. Bone retouching hammers have been found at Sibudu.

The cultural sequence of lithic tools is linked to chronology. The Oldowan Early Stone Age industry, which produced choppers, is 2,6 million years old. The Acheulean hand-axe industry occurred from 1,6 to 300 000 years ago. Stone tools were used to butcher robust animals, to smash bones in order to get at the fatty marrow that helps with the metabolism of lean meat, and to remove hides to be used as coverings or blankets.

Stone tools provide a broad cultural sequence that is roughly linked to chronology

During the Middle Stone Age (MSA) from 300 000 to 25 000 years ago, flake technology provided spearheads and long, thin points with triangular dorsal scars. Points were hafted as spearheads. In the Late Stone Age – 25 000 years ago until the present – tools were smaller. Many tool types resulted. Bored stones were used for digging sticks. Inserts were made for arrowheads and barbs. Scrapers also appeared at this time.

Stone tools were used for many activities

Archaeologists conduct use-trace studies to find out what stone tools were used. This is established by looking at impact damage and residues. Animal residue found on a stone tool could be fat, collagen, tissue, blood, bone and hair. On the part of a point attached to a haft it could be gum, red ochre, quartz or grains making up compound adhesives. Howiesons Poort period tools from 60 000 years ago show ochre and plant gum, such as *Acacia* gum, as well as fat. More brittle adhesives were used for arrows so that they could break off, and more robust gum for spears to withstand repeated thrusts. Ochre was ground to a powder, added to *Acacia* gum and heated. This mixture was added to the point, which was then attached to the haft and bound onto it. The arrows or spears were placed near a fire and carefully heated to dry the adhesive. Evidence of this technique was found in Israel, dated to 9 000 years ago, and on Levallois points made by Neanderthals about 77 000 years ago.

Stone tools reveal the mental abilities of their makers

The cognitive complexity of the people who made the stone tools is indicated by the use of compounds because people had to plan over distance and time, engage in complex goal directed actions, develop the ability to multitask, demonstrate flexibility in problem solving, achieve task switching and understand the concept of transformation. Direct fire cannot be used for heat

treatment as it is destructive since rocks explode. Underground heating can be controlled, but this requires analogical reasoning since above-ground temperatures determine underground temperatures. Complex goal-directed actions are needed to manipulate fire temperatures. If the fuel is moist, resinous or too dry, flexibility in problem-solving is necessary. The condition of the topsoil must be taken into account too, since grain size and moisture affect underground temperatures.

Flexible hafting is indicated by the existence of adhesives on different parts of points. The points were hafted at different angles, either vertically or diagonally as barbs or tips. This is evidence for three-dimensional manipulation and indicates working memory capacity. Transformation of heat-treated ochre is irreversible. The heating of rocks at a controlled temperature makes them easier to knap and gives thinner flakes. Analogical reasoning is also indicated in the flexible use of fuel. Heat-treated silcrete has been found at Pinnacle Point.

Lyn Wadley's research on lithic tools has shown how human behaviour and reasoning developed since the MSA, and the complexity of making stone tools. **Report by Hilary Geber**

People, plants and the past

Chrissie Sievers, freelance archaeobotanist, Durban, who has done extensive research at Sibudu in KwaZulu-Natal

In a lecture well-illustrated with appropriate slides, Chrissie Sievers started off by saying that plants fulfil basic needs in our lives and were important in social and religious activities in the past. The study of archaeological plant remains and their role in people's lives (palaeoethnobotany), and the study of changing vegetation (archaeobotany) involve the recovery of botanical remains from archaeological sites. Using plant remains, researchers investigate changing vegetation patterns in the past and determine how climate has changed. Climate models for predicting the future may be validated and used with greater assurance if they are based on past occurrences.

The temporal and spatial resources available would have influenced people's settlement patterns and exploitation strategies. Human activities and plant exploitation, such as grass burns by herders, too frequent veld fires and the domestication of plants, can also alter the natural environment. Types of evidence available to palaeoethnobotanists and archaeobotanists are pollens (palynology), growth rings in wood for dating sequences (dendrochronology), climatic information (dendroclimatology) and the impact of humans on forests (dendroecology). Macro-remains studied under a microscope will identify wood, fruits, seeds, roots and tubers, and leaves. Some remains, like charcoal, can be seen with the naked eye, but others like phytoliths, which occur in grasses, are only revealed with a scanning electro-microscope. When plants take up water from the earth, the dissolved silica in the water is deposited in the plant cells and these remain after plants are burnt or decay.

In June this year, the University of the Witwatersrand made a groundbreaking announcement about the first direct proof of our ancestors' diet. By identifying the phytoliths appearing in dental plaque it was established that hominids were consuming bark, leaves, sedges, grasses, fruits, shrubs and herbs. Various underground storage organs, including the rhizomes of sedges, were cited as critical fallback foods for early hominids when the soft fruits of summer were no longer available. Aquatic plants in particular may have played a part in promoting habitual bipedalism when hominids had to harvest these in shallow water. A second important announcement from Wits concerned the earliest secure evidence for burning during the Acheulian period or the Early

Stone Age about 1 million years ago. Dr Marion Bamford working at Wonderwerk Cave near Kuruman found no evidence of charcoal, but discovered fragments of burnt grasses, sedges and leaves. Francesco Berna suggested that *Homo erectus* had possibly made a fire that produced these remains. The ability to control fire was a crucial turning point in human evolution. Cooking, which makes digestion easier, increases the amount of energy our bodies obtain from cooked food and our guts thus grew smaller. The energy formerly spent on digestion was freed up, enabling our brains to grow larger. The warmth provided by fire enabled us to shed our body hair, which allowed us to run faster and hunt more efficiently. And we learnt to socialise by gathering around a fire and our temperaments therefore also grew calmer.



Botanical remains from the Iron Age layers at Sibudu Cave. The scale (1 cm) lies upon the remains of a wild plum. Marula too, and a variety of fruits, seeds and other botanical remains are preserved in the dry shelter environment.

is really only accurate to about 40 000 years ago. Earlier than that, Optically Stimulated Luminescence (OSL) is used to obtain dates for plant material, such as the plant bedding found at Sibudu in KwaZulu-Natal.

Some 77 000 years ago at the Sibudu shelter sedge leaves and stems were laid on the floor and covered with the leaves of the Baster Camphor tree, known for its aromatic, insecticidal and anti-malarial properties. The leaf remains were extremely delicate, but Prof. Lyn Wadley managed to remove and examine them. Although the term bedding at Sibudu is used to define a place to sleep, fragments of bones etc. were also found, which suggests that people were eating on top of their bedding as well. Fruits of sedges, very tiny nutlets, were found in the bedding layer, which helped to identify the sedges as *Scleria Natalensis*. This identification was useful to determine the temperature and moisture tolerances of the plant, and establish climatic conditions at the time, which proved to be similar to those of today. The bedding was apparently burned by the ancient inhabitants. Drs Solveig Scheigl and Chris Miller from Tübingen University in Germany are conducting further research.

Ms Sievers said that now there is further evidence from residual analysis that plant material,

Just as fire was a seminal event in our evolution, it was difficult to overestimate the contribution of the radiocarbon dating that freed us from the preoccupation of dating, according to Chrissie. In the words of the great Desmond Clark, were it not for radiocarbon dating 'we would still be foundering in a sea of imprecision sometimes bred of inspired guesswork, but more often of imaginative speculation'. The method was developed on plant material, but since then has been extended to any material containing carbon. Whereas the radiocarbon dating remains arguably the most dependable and most widely used dating technique for the late Pleistocene and Holocene periods, it

resins mixed with ochre and heated to form glues, was used to fix stone points to shafts. Further evidence for this came from Border Cave in KwaZulu-Natal, where hafting methods 40 000 years ago have been shown to include the use of beeswax mixed with the resin of toxic Euphorbia and possibly egg, wrapped in vegetal fibres made from the inner bark of a woody plant. This is the oldest known evidence of the use of beeswax. Chemical analysis of residues on a wooden stick decorated with incisions and probably used by the San indicated that the stick was probably used to carry a poison found in castor beans. This represents the earliest evidence of the use of poison.

A statistical method was recently applied for the first time to fossil-plant data in South Africa to quantify rainfall and temperature variation in the past. This co-existence approach provides a quantitative evaluation of evidence to which proxy evidence from other sources can be added to build up a more complete picture, Chrissie Sievers concluded. **Report by Anita Arnott**

Every bead tells a story: the importance of glass beads to illuminate trade and cultural affiliations

Rina Faria, freelance bead specialist, Pretoria

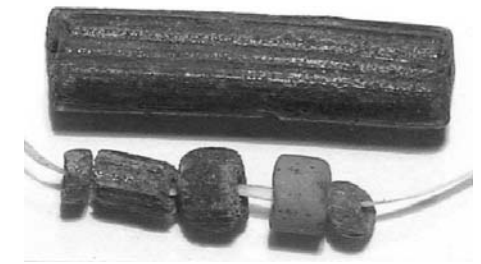
Rina Faria gave us a most interesting talk on beads and what we can learn from them. Regrettably, the full colour of the beads shown during her presentation was not able to be appreciated owing to a technical problem with the data projector. This was resolved eventually and we were able to appreciate the range of beads and the depth and variety of colour.

Beads have been traded throughout the world for millennia and in southern Africa for up to 1 000 years. Their size made them easy to transport and with time they acquired symbolic and cultural meanings. The dating and origin of glass beads can be traced through chemical analysis known as Raman spectroscopy, thereby establishing trade routes and intercultural relations, as well as providing a dating index. Another method used to analyse and characterise the composition of beads is known as laser-induced breakdown spectroscopy (LIBS).

Glass was first made in the Middle East some 4 500 years ago. Beads can be drawn or wound, and the method of manufacture can be established from the direction of the bubbles in the beads. Beads were brought to southern Africa by Indian and Arab traders who sailed with the trade winds from the north-east from December to January, returning home with ivory, skins of wild animals and gold later in the year when the winds reversed direction. Various categories of beads have been identified in Southern Africa:

- **Zhizo Series (AD800-AD1000):** Zhizo beads originated in Iran and were first found at Schroda near Mapungubwe. The beads are opaque and colours range from yellow, green, blue-green to dark blue. These beads are frequently made of a poor quality of glass.
- **K2 Series (AD1000-AD1200):** These hail from south Asia and have been found at Pont Drift, Skutwater and Schroda. The beads are translucent, green-blue to turquoise in colour, and small. These beads were drawn. Also found at K2 and Mapungubwe were garden-roller beads, the only beads ‘made’ in southern Africa. They are barrel-shaped and moulded from melted glass.
- **Mapungubwe Oblate Series (AD1240-AD1300):** This series of beads originated from south-east Asia and have been found at Skutwater and in Botswana. The beads are multi-coloured and range from yellow, orange, blue-green, light green, cobalt blue and plum to black. They can be either translucent and or opaque. Gold beads were also found in abundance at Mapungubwe.

- **Indo-Pacific Series (AD1000-AD1660):** Otherwise known as Trade Wind beads, these originated from south-east Asia, in particular India. They have been found in the Shashe-Limpopo region and are translucent to opaque. Colours include yellow, green, Indian red, blue-green, dark blue and black.
- **Zimbabwe Oblate Series (AD1300-AD1450):** Beads range from translucent to opaque and come from south-east Asia. Colours found are yellow, blue-green, light green, cobalt and black.
- **Khami Series (AD1450-AD1700):** These south-east Asian beads are larger, drawn, reheated, uneven cylinders. Colours range from off-white, yellow, Indian red, blue-green, olive and deep blue to black. Beads have been excavated in Kilwa.
- **Europe (AD1600):** Venetian bead makers tried to copy the distinctive Indian red beads some 2 000 years ago. They were unable to replicate the Indian reds exactly and covered green glass beads with red. These Indian-red-on-green beads became very valuable.
- **European beads (AD1800+):** These included the well-known white hearts from Venice, hexagonal royal blue beads from Bohemia, blue doughnuts from Germany, millefiori trade beads, etc.



Zhizo beads. Origin: Middle East (Iran), 8th to mid-10th century



Cobalt blue hexagonal beads. Origin: Bohemia (Czechoslovakia), ca 1820 to 1900.

Different tribes in southern Africa preferred different bead designs, and the designs and ‘messages’ conveyed by their beadwork varied. Zulu, Venda and Pedi beadwork was recognisable not only by the choice of bead but also by the design. Rina went on to describe the various beads found at different sites, giving examples of the type of beadwork worn by various chiefs or kings, and how sites can be dated by means of the types of beads found.

Report by Noni Vardy

Interpreting shipwrecks – a brief look at the dating and preservation of underwater cultural heritage

Jaco Boshoff, Curator, Historical and Maritime Archaeology Collection, SA Iziko Museums, Cape Town

Jaco Boshoff has a BA Honours and a postgraduate diploma in Museology from Stellenbosch University and is chairperson of the South African Heritage Resources Agency (SAHRA) Committee for Archaeological, Palaeontological and Heritage Objects.

Boshoff told us that the locations of study are either inland lakes and rivers or the oceans. In South Africa, because of its extensive coastline, the focus of investigations is of maritime nature. The study of shipwreck archaeology can be broadly divided into three areas, namely content, vessel structure and context. The forensic investigation of these aspects on a shipwreck guides the archaeologist on the origin of the vessel.

Content

Because of the lack of oxygen, underwater organic material is relatively well-preserved, which enhances the opportunity for establishing accurate provenance and dating. Jaco used anecdotes from his personal diving experiences locally and internationally to illustrate this aspect. For instance, he described a vessel discovered off the south-eastern seaboard of the USA, the contents of which consisted only of a huge pile of bricks. It was later found to be linked to the construction of a large brick-built fort erected during the American Civil War. Ironically, the fort was never involved in battle. He cited another American example in which the contents of the wreck were cheap, salt-glazed stoneware made in Staffordshire, England. As this product had been made in a tight time-framed late 1770s period, the time of the American war of independence, the ship was either breaking a naval blockade or dumping cheap product on to the colony!



Copper finger ingots found on the wreck of the *Colebrooke* (photo: Charles Shapiro)

One of the significant advantages of maritime archaeology compared to land-equivalent research is that material is often found in large quantities. For example, sailing ships needed ballast and frequently this would comprise saleable product. Another example is coins, which are a valuable tool for dating. A coin dated to 1792 was found under a pile of timber when developers were working on the Cape Town Waterfront. It was the custom by many shipbuilders to place a coin beneath the main mast when constructing a ship and the position of the coin in the pile of timber gave the clue to the construction date of the wreck and its source. Developments in the Cape Town Waterfront have been a rich source of artefacts. Often the personal goods of sailors and

passengers discovered are of no apparent interest until closer examination is made. Jaco showed a picture of a crushed lump of pewter recovered from a wreck, which appeared useless when found, but once opened up the initials of the owner were seen. A knee-length boot recovered from the USS Monitor, an American Civil War warship sunk off the US coast, seemed to be just that, a boot. However, when the boot was subjected to X-ray examination, the remains of a human foot were clearly visible.

Structure

The remains of a vessel itself provide the maritime archaeologist with many clues as to when and where it was built. Research in the relevant national archives may lead to identification of the actual ship and the event that caused its demise. For example, copper sheathing was adopted only in the late 18th century when it was discovered that the chemical reaction between seawater and copper was effective in discouraging vermin from eating a ship's timbers. An example of a forensic clue to identification relating to copper was the special sheeting known as Muntz metal made by a particular English coppersmith who added a signature stamp to the sheeting.

The shape and type of certain timbers in the frame also guide the investigator to the country of origin and the date. Ships that rounded the South African coast were built mainly in Portugal, France, Holland and England. Each country had its own building method, which changed over the years. Knowledge of these techniques is essential for the maritime detective. The analysis of timber under a microscope will provide further information for building a total archaeological picture. Early shipbuilders used wooden 'knees' as supports for decking. These were not manufactured but cut from trees in the shape required. However, the English began using iron knees in the late 1700s when timber was getting scarce – a further clue! Wrought iron for anchors started to be used in the 1700s. The shape of anchors also changed over the years. In more recent years, knowledge of propeller shapes became useful. Post-World War Two ship plates were welded instead of being riveted, engines evolved, and so on.

Context

The context of the shipwreck in relation to geography and social/political developments is of interest to the maritime archaeologist. A major consideration is the location of a wreck. The South African coastline is subject to major currents, sand movements and heavy storms that can often move a wreck and its artefacts some distance from the original sinking site. The location can be made difficult by place-name changes. For example, although historical records indicate that a ship sank off 'Camps Bay', no wreck could be found in the present Camps Bay area. However, a wreck was later found off Clifton, which had changed its name in the intervening period from 'Camps Bay'.

In the socio/political context Jaco Boshoff raised the interesting question of what the effect would have been on the Eastern Cape wars between the British and the Xhosa had the *Birkenhead* not sunk in False Bay. Also, what impact might there have been on military culture following the behaviour of the British soldiers who stood to attention as the ship sank in order to allow women and children to evacuate in the few rescue boats available. He pointed out that while coastal shipwrecks were generally protected world-wide, regrettably very little had been done to protect deep-water shipwrecks from exploitation.

Boshoff's brief outline of maritime archaeology gave an indication of the numerous areas of study available to provide clues to a shipwreck's provenance, the people who sailed in it, its builders and the context in which it sailed and sank.

Report by John McManus

A holistic look at the artefacts – conclusions from presentations

Professor Karim Sadr, Head, School of geography, Archaeology and Environmental Studies, University of the Witwatersrand

The study of material culture is the prime task of archaeologists. This often consists of three stages, namely obtaining the material culture (usually through fieldwork), identifying the material culture (which usually involves laboratory work to classify and sort), and analysing and interpreting the results to reconstruct human behaviour in the past. The middle part of an archaeologist's work, namely identification, classification and typology, had been the theme of the day's symposium. The variety within classes of material culture is great and archaeologists have to break up this variety into understandable bits or types. Once objects have been classified into understandable bits one can look at the interrelationship between the bits to understand the whole picture, Prof. Sadr said.

In the 1940s and 1950s there was a debate in American archaeology between James Ford and Albert Spaulding concerning the question of whether archaeological types of material culture were real, i.e. were the types recognised by archaeologists intended to be seen as different types by the makers and users of the artefacts. Ford maintained that archaeological types were not 'real', for how could one know what the ancient craftsmen intended. The process of classification and the creation of types was in his view an inherently arbitrary activity of the researcher. But Spaulding believed the task of an archaeologist was to get into the maker's mind and recognize the types as originally intended. The debate goes on and both sides have proponents. In South Africa both Professors David Lewis-Williams and Thomas Huffman would probably argue that the types of rock art images and pots they identify are 'real' types.

Ford held that typology was just a way to organise artefacts, with a view to helping to identify the age and cultural context of objects. Many typologies could be created. The chosen typology should be the one that helped answer the researcher's question. According to Sadr, if one could get to the real, intended type, and if it suited the question, so much the better, but one need not shy away from creating other typologies, ones that the maker may not have had in mind. It all depends on the research question to be answered. Dr Sadr used as an analogy the classification of modern writing implements. If a cache of such implements were found and the future archaeologist wondered what they were used for, it would make sense to classify them by their business end, as pencils, ballpoint pens, fountain pens, markers, etc. But if one's question was about where the writing implements came from and what they might, for example, have to say about trade routes and exchange, then it would make more sense to type the implements by their labels: stabilo, bics, staedlers and so on. An underappreciated problem is how to get different analysts to identify the same types. Different researchers tend to see things differently, and not all will agree on a stone tool being a carinated core or a scraper, whether a stone-walled ruin is a class 1 or a class 3 ruin. Such inter-analyst variability needs to be better studied as it can have profound effects on how we reconstruct the past.

Typology is a changing scene as new technology allows one to look at aspects of material culture not previously accessible. In the past, Prof. Sadr said, the emphasis had been on an objective assessment of style and shape, but now new technology means objects can be more objectively measured for size and composition. But the typological debate will probably remain with us for a while yet.

Report by Prof. Karim Sadr and Reinoud Boers

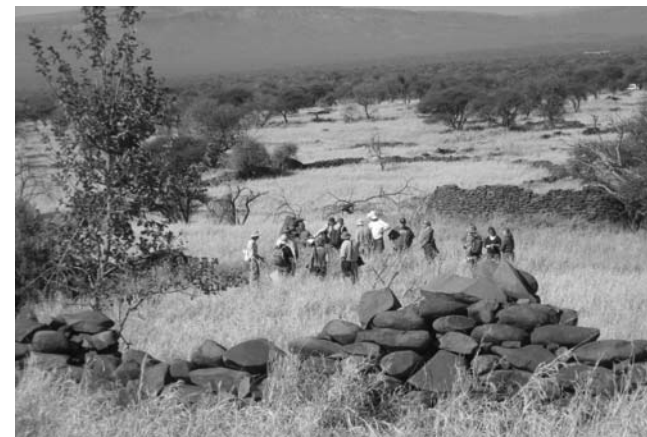
EXCURSIONS AND OUTINGS

Molokwane: perhaps the largest Tswana capital of the early 19th century (1 July 2012)

Led by Francois Coetzee and Professor Jan Boeyens of Unisa

The Iron Age encompasses the last 2 000 years with two or three phases – the Early, Middle and Late Iron Age. Molokwane at Selonskraal, west of Rustenburg, is a late Moloko, Late Iron Age (LIA) site post-AD 1600. It was the capital of a large Tswana-speaking chiefdom

during the late 18th to early 19th centuries and was inhabited by the mighty Kwena-Modimosana-Mmatau ethnic group. Oral traditions pinpoint Molokwane, at its height, as being closely associated with the rise to power of the Kwena-Mmatau ruler, Kgaswane, who ruled between 1770 and 1828. This massive IA settlement, stretching over 3 km, was excavated in the 1980s and early 1990s by Julius Pistorius. Francois Coetzee and Jan Boeyens gave us a review of Pistorius' findings and conveyed how he interpreted them.



ArchSoc members at Molokwane

Early Moloko sites from before 1600 are difficult to find and the density of archaeological remains are low. Poles and reeds were used as housing materials and huts had dung floors. Huts were small and thinly scattered, and were not surrounded by stone walling. As the population grew over time, a better solution was found and stone was used. The stone-walling tradition started in the Free State and spread to the North West Province. The height of the surrounding walls was relatively low and reeds were placed on top of them to protect against predators, such as lion. Within the walls would have been rondavels, daga-walled with conical thatch roofs. An interesting architectural feature of these houses is the use of sliding doors. Francois showed us how wooden doors sliding on stone produced distinctive grooves on the flat stones at the entrance to rondavels.

Molokwane housed thousands of people. According to travellers' accounts in the 1750s, the city had a population of between 10 000 and 15 000 people, which at the time was as dense a population as that of Cape Town. In addition, a thousand head of cattle was kept in the main settlement, while several cattle kraals and other settlements had cattle as well. Molokwane was organised on the Central Cattle Pattern and cattle served as the economic base of the community, being used for the payment of lobolla and indicating social status. The central cattle kraal was the area associated with court activities and the burial of important men. The scallops or bays demarcating family units situated around the kraal were female spaces. Children and women were buried in or around these bays, depending on the cause of death.

This concentrated settlement pattern at Molokwane has been attributed to the comparatively dry environment. However, archaeological data shows that the climate was wetter and warmer than it is today. The Selons River water table was higher and there were more streams. Under these favourable conditions, large towns such as Molokwane were formed by the aggregation of small settlements around the chief's settlement for mutual protection during the period of unprecedented military stresses in the 18th and 19th centuries. The chief lent out cattle to help other settlements build up their herds and to maintain allegiances. Tribute was paid to the chief in the form of gifts and court payments.

Francois and Jan stated that stone walling at Molokwane was used to demarcate physical and social space. They illustrated this by showing us a number of archaeological features. The lekgotla (the court and courtyard) reflected the hierarchical system. The lekgotla was always

under shaded trees. The holy fire was a major feature of the legotla, being kept burning at all times by someone appointed to clean and stoke the fire. Major disputes were taken to court. The highest crime was murder. Andrew Smith in his journal tells of trials of alleged sorcerers and their execution by decapitation. A private chamber on higher ground with access through a single low entrance was a secret area used by elite counsellors under the cover of darkness to discuss the inner business of the leading elites.



A low lintel over the entrance to a secret area where elite counsellors met under the cover of darkness

In the midden at the back of the senior wives' enclosure, faunal remains were found. Two thirds of the remains represented cattle, goat and sheep, with a wide range of animals including kudu, black rhino elephant (ivory), zebra and antelope making up the remainder. Interestingly, no glass beads were found at Molokwane. According to Boeyens and Coetzee, this could be because of the size of the sieve mesh used by Pistorius. The use of a smaller mesh and more thorough sieving could produce different results. Research at the site is ongoing. Jackie de Souza, winner of the Trans-Vaal Branch's Hanisch prize for 2011, is researching a smaller settlement nearby as part of her Masters research at the University of Pretoria. It is hoped that her results will shed light on the role played by smaller settlements under in Molokwane society.

Report by Law Pinto

Outing to Freedom Park, Pretoria (26 August 2012)

Freedom Park evolved from an idea of Nelson Mandela in 1999 for the creation of a memorial for people who died in pursuit of freedom during eight conflicts that have shaped South Africa. Like the Truth and Reconciliation Commission, it intends to engage actively in nation-building, and this concept is reflected in its design. The 52 ha site is panoramically situated atop one of the hills outside Pretoria and is covered by virgin indigenous bush. It has attracted visitors from landscaping and architectural fraternities and a great deal of thought has gone into its design and construction. To one side lies the Voortrekker Monument and the Schanskop Fort and to the other the Unisa complex. Below, like in a Scaletric model, run the busy NI freeway and the Gautrain. Whether the billion rand cost, which includes a yet-to-be completed museum, is justified and whether the concept and execution of this project leads to reconciliation and the building of a unified nation is a matter of debate.

Freedom Park is marked for its architecture. Its distinctive packed-stone walling reflects early Sotho structures as seen at many historic sites, including that of Great Zimbabwe. A design competition drew considerable local and international interest and was won by Obra Architects of New York. However, its submission was not used in the construction, the contract being awarded to a joint venture of GAPP and Mashabane Rose & MMA Architects. In the design, consideration was given to African cosmology embracing the elements of fire, water and stone. There are wide spaces with long paths for contemplation.

At the entrance office we collected our most articulate and knowledgeable guide, Badresh Kara. A brick path led us to our first stop, the S'khumbuto, which is the main memorial. This beautiful hall is not only a place to remember the people who have died, but also a place to celebrate the human spirit and the building of the nation. The hall looks out onto the amphitheatre with a backdrop of a semicircle of poles that could be mistaken for flagpoles, but in fact symbolise reeds. After the darkness, from seeds, arose reeds that symbolise rebirth and regrowth as a democracy. From the 'reeds' a terraced lawn moves down to a large pool with continuous fountains that almost reach the windows of the hall. This area symbolises the unknown soldiers and the unsung heroes of the struggle. The hall, which is used for various events, including the occasional wedding, is a sanctuary where one can commune with the spirits of one's loved ones.

From the hall we walked to the Wall of Names. This circular wall consists of half-brick-size stones that can be pulled out to be inscribed with names. There is space for 150 000 names, but at this time only 75 000 stones have been inscribed with the names of fallen in eight major South African conflicts. The names to be inscribed are selected by means of public participation processes following internal research and are confirmed by a verification council. This process is ongoing. While the names have not been placed in alphabetic order, a number at the bottom of each block allows names to be found on a database. At the start of the wall there are the names of Cuban, SWAPO and MPLA soldiers who are considered to have been part of the struggle for South Africa's liberation, thereby indicating international solidarity and reconciliation with neighbouring states. The next curve of the wall bears the names of those who died in detention. There are some omissions and incorrect inscriptions, as well as blank spaces for those whose bodies have not been able to be identified, were unrecognised members of guerrilla forces, or other reasons. For example, Steve Biko's name is not there as his family did not want it to be included since he is identified with the Black Consciousness Movement.

The wall identifies those who were executed by the state and were active in the armed struggle and underground movements. The intention is to add the names of people involved in the Sharpeville massacre. Further round the wall and on adjoining walls are the names of Indian stretcher bearers and participants in Rhodesian regiments, the Zulu wars and the Anglo-Boer War, the latter because black people were also held in British concentration camps. Looking at the walls, ArchSoc members indulged in lively debate about the heroes and villains who should or should not be reflected. Badresh, our guide, with his legal background, said that he loved critical analysis and discussion and found passive groups uninteresting. However, he also said with a wry



Just a few of the 75 000 names on the Wall of Names, in this case the names of Indian stretcher bearers

smile: 'you lot are something else!' He conceded that conscripts and others involved in the SADF and the SAP during the apartheid years were not included in the wall. However, as an act of reconciliation, a road had been built linking Freedom Park with the Voortrekker Monument, where a plaque could be found to apartheid forces killed during this period.

Part of this area houses the Sanctuary, which is a serene environment conducive to the outpourings of emotion and where candles can be lit. The Eternal Flame in the Sanctuary provides an opportunity to remember unsung or unknown heroes who lost their lives but are not recorded. We then moved from the commemorative area to the spiritual one. The path has been designed to be wide, long and curved to enhance spiritual contemplation. Along the path are beautiful indigenous trees, grasses and shrubs. The President's Tree was planted by Thabo Mbeki in 2002. The African Olive was chosen as representing peace. We then reached Isivivane – a sacred space that is considered to be a spiritual resting place for those who played a part in the freedom and liberation of South Africa. This area was designed to embrace all creeds, cultures and races, and many groups were consulted during its construction. As a mark of spiritual respect visitors must remove their shoes, men their hats and hands must be dipped in the cleansing water when leaving the area. Encircling the area are nine Buffalo trees representing the nine provinces. These trees, with thorns facing forward and back, are part of traditional burial rituals. If a person dies away from home, a branch is cut and taken to the person's final resting place as indicated by the forward-pointing thorn. A circle of steam is surrounded by nine distinct boulders, each of which represents one of the provinces. Around this is a semi-circular seating structure suggesting the African tradition of meeting visitors and holding important discussions – a Lekgotla, in fact.



Isivivane – a sacred space that is considered to be a spiritual resting place for those who played a part in the freedom and liberation of South Africa (photos: Freedom Park)

Leaving Isivivane one can take a path to the north along a boardwalk with statues by Dumile Feni, while a southern path leads to Tiva Origen, a circular wall enclosing an attractive clear pond. This is another meditative space with rocks and a thorn tree in the middle. Our tour officially ended here but we wandered back through some other buildings housing the Gallery of Leaders and Moshate, a high-level hospitality suite for presidential and diplomatic functions, and a retreat for VIP discussions, negotiations and the signing of agreements. From here we walked back to the Uitspanplek where we picnicked under young fever trees – very pleasant on a warm spring day. [For further information on Freedom Park, see www.freedompark.co.za] **Report by Gerry Gallow**



History of wagon-making at the Askari Game Lodge, Magaliesberg (18 November 2012)

With a talk by Professor Erik Holm and a visit to the museum

Professor Holm is an entomologist by profession and has published books and made films in this field, but is also a man of many parts, which he skilfully weaves together both in his life and lectures. He met us at the Askari Game Lodge in the Plumari Africa Game Reserve to give us a talk on the history of wagon-making and show us around the wagons exhibited there.



Trans-Vaal Branch members listen intently to Erik Holm in the museum (photo Graham Reeks)

With everybody seated in the lodge's museum, he told us that wagon-building began out of necessity. When Jan van Riebeeck arrived in the Cape in 1652, the idea was to start a refreshment station for passing ships. He laid out a vegetable garden but lacked transport for the produce and other needs. The VOC had not considered it necessary to send horses. The only solution was to follow the example of the indigenous people, the Khoekhoen, who managed their transport on carts using oxen – Nguni cattle with big humps – that made *inspanning* easy. Ships' crews were made up largely of sailors from Holland, Germany and the Scandinavian countries and among them were skilled craftsman and shipwrights. These men became the original masters in the construction of the wagons and their large wheels, and their patois of northern languages became the foundation, according to Prof. Holm, of the Afrikaans language. Ship terminology was incorporated into 'wagon language'.

Van Riebeck also absorbed the Khoekhoen's skill in the management of the oxen, of which up to 16 oxen were used in a span. Each one was given a name and a fixed position in the team. The slow ones were *inspanned* nearest to the wagon where their slowness could help in the braking process. The smart ones were placed near the front and followed instructions shouted by the driver who knew and understood each one's personality. He could shout from the back: '*Rooi – links!*' and the ox would duly turn left and the others would follow him. Understanding the oxen, knowing their names and keeping 'in tune' with them was essential. This lore was the subject of an excellent talk, *Unpacking Jamludi: Travelling with the names of oxen*, by Prof. Adrian Koopman at the Trans-Vaal Branch's 2006 Annual School.

The building of heavy, solid ox-wagons was largely unique to South Africa because carts and wagons in other parts of the world were generally much lighter. In those areas there was a

semblance of roads or cart tracks and the wagons were drawn by horses, donkeys or mules. The *ossewa* became part of South African life. For the Vryburgers and the Trekkers they provided a sort of mobile home where everything had a place: a ladder on the side, tools underneath, a canvas cover to protect the people or cargo, and often a chicken coop right at the back. While the woman and children jolted along on the ox-wagon, the men rode or walked, like the *touleier* (wagon leader) alongside. The use of wagons grew as the country developed and supplies were needed for the rapidly expanding mining industry all over the country. The demise of the great wagon era, which built up to some 100 000 ox-wagons before the Anglo-Boer War, resulted from that selfsame war in which both sides realised that the road to victory lay in the destruction of supply transports. Any wagon found in 'enemy' hands was duly burnt as a result.



Close inspection of an ox-wagon by ArchSoc members (photo Graham Reeks)

The construction of the wheels was an art with the right degree of 'taut' being essential. Prof. Holm, who has restored many ox-wagons, discovered an old wagon-maker at an old-age home in Brits and tried to enlist his help in obtaining the fine art of the tautness of the steel rim on the wheels. The old man gave some instructions and then said that the final degree of rim-building was a gut-feel – if you did not have this feel, you could forget it! Wagons were changed over the years to adapt to changing situations. When the old heavy wagons proved to be unwieldy they were redesigned to the '*kakebeen*' design, which allowed a 'twist' of up to 40 degrees between the front and back axles. This made the wagons more flexible over tough terrain. The name derives from the similarity of the design to the jawbone. Many wagons were exported to other parts of the world.

The downside of the wagon construction was the destruction of South Africa's indigenous forests. When the forests around Paarl were denuded, wagon-building moved to the Eastern Cape, largely under the aegis of excellent Scottish craftsmen. In due course, the forests of Amatole Mountains were also stripped bare. Today's more ecologically-sensitive people view this era with horror! While wagons changed and their use was adapted, lack of care such as oiling and greasing caused them to rot away. Wagons were still used on farms behind a tractor as late as the 1940s. By this time and even for this use they needed to be licensed. Today a few are still to be found in museums where they receive various degrees of care, and sometimes a clump of bluegums on a farm will reveal a long-forgotten, rotting carcass of an ox-wagon. Erik Holm's fascination with this innovative piece of technology was evident throughout his talk. The solid ox-wagon proved to be the forerunner of many innovations that were produced by South Africans from a unique

pool of talent and a sense of adventure.

At the conclusion of Erik Holm's talk he took us to see a number of well-maintained ox-wagons outside the museum and so many questions were asked that a second lecture virtually ensued. We also wandered round the Askari museum which houses a large collection of carts and related artefacts. While they ox-wagon were interesting, the collection was not as impressive as the ones we had seen at The Ring Oxwagon Lodge some years ago, where the wagons were arranged in a laager and were often furnished inside. But it was nice to be able to see the construction close up and learn about the construction methods and purpose. The wagon that had been used as an ambulance looked scarily uncomfortable!

We had an excellent lunch at the Askari Lodge with its panoramic backdrop of verdant Magaliesberg hills. Entertainment was provided by two elephants at the dam adjoining the restaurant area, who played games with each other and generally showed off. While they were separated from us by an alarmingly thin wire fence, they were under the watchful eyes of a couple of guards. After a while one of the elephants 'lost it' and roared off to the trees, ears flapping, trunk waving and tail twitching, and trumpeting loudly and angrily. The guard assured us that his rage was because he did not like the wind. This delightful day was a fitting end to another successful year of Archaeological Society activities.

Report by Gerry Gallow

TRANS-VAAL BRANCH CHAIRMAN'S REPORT

Annual General Meeting, 17 May 2012

The chairman's report for the June 2011 to May 2012 year was delivered by Reinoud Boers. A summary follows.

I believe that our branch has had another successful year in bringing together lay persons and professionals in the promotion of South African archaeology. Our branch has now been in existence for 67 years and we continue to be an active and stimulating branch of the Society. Branch membership stands at around 500. This number is about 100 persons more than reported a year ago because of a correction in the counting of joint memberships by the Society's secretariat in Cape Town. ArchSoc now has a total membership of about 1 050 individuals and institutions, including 180 African and overseas members.

As in every year, we are currently concerned by the number of members that have not yet renewed their memberships for 2012. In the past year the branches made a determined effort to stop the decline in membership, with some measure of success. Trans-Vaal Branch committee members worked hard to retain existing members and attract new ones. The publicity we generate in the media for our lectures is important in this regard. Our university representatives are also trying hard to enrol more student members. Our full programme of excellent lectures, interesting outings and longer excursions, our tours beyond South Africa's borders, and the Society's excellent publications should make membership of ArchSoc worthwhile for many.

Once again in the past year your committee very ably managed an excellent programme. As always, these activities received the unstinting support of the academic communities of the universities of the Witwatersrand, Pretoria, South Africa and Johannesburg, as well as of independent professionals. I would like to thank all of these, as well as our patrons, for their commitment, enthusiasm and assistance. Our patrons are Dr Bob Brain, Prof. Tom Huffman, Prof. David Lewis-Williams, Prof. Bruce Rubidge, Dr Francis Thackeray, Prof. Lyn Wadley, Prof. Jan Boeyens, Prof. Karim Sadr and Prof. Innocent Pikirayi. Dr Janette Deacon continues to represent us ably on Council in the Cape.

Nine evening lectures were arranged in the last 12 months. The speakers and topics were Dr Alex Schoeman of Wits on Bokoni settlement patterns and agriculture, Prof. Jan Kramers of UJ on the dating of hominin fossils, Jill Weintraub on Dorothea Bleek, Dr Helen Anderson of RARI on the origin and development of art, Leanne George, also of RARI, on body symbolism in rock art, Graham Reeks on silver mining around Pretoria, Prof. Neil Price of the University of Aberdeen on World War Two archaeological and heritage research on the Micronesian island of Peleliu, and Prof. Frank Jolles of the University of KwaZulu-Natal on Zulu ceramics in transition. Tonight Paul Hubbard from Bulawayo will be talking to us on the state of archaeology in Zimbabwe.

Our day outings were no less varied. The sites visited included the Bergendal Anglo-Boer War battle site with Huffy Pottt, the Holkrans excavation and the geology of the Vredefort Dome with Prof. Sadr, Patrick Byrne and Prof. Frans Waanders, Melville Koppies with Prof. Revil Mason, Jan Smuts House in Irene, Liliesleaf Farm in Rivonia with Jo Buitendach, and the Swartkrans hominid site with Dr Morris Sutton. Three longer outings were or are fully booked. In September, committee member Anna Steyn and Alkis Doucakis took us to the Suikerbosrand around Balfour, at the end of March this year Marlies Liebenberg immersed us in the history of Barberton, and later this month we will see archaeological sites with Lyn and Richard Wadley and Sam van Coller in the Waterberg, an excursion ably arranged by Lilith Wynne, our former chairman.

A highlight of 2011 was the Annual School in October on interaction between South Africa's peoples in the last 500 years. Prof. Sadr of Wits looked at the end of the Stone Age, Prof. Fred Morton of the University of Botswana spoke on the nature of Tswana entities in the 18th century, Gavin Whitelaw of the KwaZulu-Natal Museum covered aspects of the Late Iron Age in KZN, Prof. Hufmann introduced us to the archaeology of Venda origins, Dr Antonia Malan of the University of Cape Town addressed land and cattle, Prof. John Lambert of Unisa told us about the British in the Cape, Prof. Karen Harris of Pretoria University discussed the life of mining migrants, and Dr Alex Schoeman of Wits summed up the day in a most professional manner. The weekend was concluded by another enjoyable Sunday brunch open to all branch members.

Following the forced cancellation of the planned tour to Libya in 2011, I arranged an ArchSoc tour to Southern Ethiopia in November. Twenty-seven of us travelled along and through the Great Rift Valley and visited the Bale Mountains, enjoying the wonderful scenery and meeting a range of fascinating tribes whose dress and personal decoration has not yet been affected by mass tourism. A few archaeological sites were also visited, including a fascinating stellar field and the little-known, up to 4 000-year-old Machiti rock art site featuring 50 engravings of cows with huge udders.

Issues of *Artefacts* appeared in August and January, while the Society's popular magazine, *The Digging Stick*, now includes colour in every issue following an additional budget being voted by Council. Advertising income does, however, make the magazine virtually self-funded. Our branch continues to plough back excess funds into archaeological research and education. Grant

winners Leanne George and Aurore Val, both of Wits, completed their 2011 projects, namely research into dance postures in rock art and a study tour for Wits and UCT Masters and PhD students to France. We declined an application to fund part of the cost of a Goodwin Series publication on transformation in archaeology and did thus not make an award in 2012. Annual prizes for academic excellence were made to Wits students Tasneem Essop and Matt Lotter, who received Van Riet Lowe Awards, and to Unisa student Siegwalt Kuessel.

Your committee continued its discussions on a new name for the branch in view of the opinion of some members that the name 'Trans-Vaal', despite the hyphen giving it the meaning of 'across the Vaal', is politically unsuitable. We have considered names ranging from Northern Provinces and Northern Region to Overvaal, Capricorn, Leboya or 'Northern' to Trans-Tshetlha or Tshela, meaning 'Yellow River'. None of these found favour with the committee and no suggestions were received from members. Your committee has therefore decided not to pursue this matter.

During the year we raised a number of issues with Council. One was a concern about some top international archaeologists working on important sites in South Africa favouring international rather than South African audiences when it comes to announcements. We were also involved in an ongoing debate about the Trans-Vaal Branch website, now live for more than ten years, versus the Society's new national website. The fact that our site comes up first when archaeology in South Africa is Googled is a bone of contention, but we are not ready to let our well-used site go. We have also established the principle that each branch chairman will attend at least one Council meeting in Cape Town during his or her term of office.

Your committee made a significant gesture at the end of last year when it advised Council that the Trans-Vaal Branch would forego receiving the Society's annual subvention since branch finances are strong. Currently amounting to about R10 000 a year, your committee considered that this money could be better used to reduce future membership subscriptions. We will review this decision annually. Another important decision taken by us was to repeat one of our Johannesburg lectures in Pretoria on an annual basis. We have almost 70 members in that city and it is becoming increasingly costly and inconvenient for them to come to Johannesburg on a regular basis. Our first lecture at Pretoria University will be in August.

The success of our branch is largely ascribable to our committed, enthusiastic and hard-working committee. Anna Batchelor-Steyn took leave of absence in December to further her studies, but apart from this there have been no changes and all committee members are standing for re-election. These are Graham Reeks, vice-chairman and Unisa representative, our able treasurer John McManus, membership secretary Pamela Küstner who is also responsible for producing *ArchSoc News*, outings coordinator Anita Arnott, lectures coordinator Noni Vardy, minutes secretary Hilary Geber, catering organiser Gerry Gallow, Louise Mckechnie and Peter Mimmack who attend to technical aspects, and Law Pinto, who now looks after publicity and represents us at Wits and Pretoria universities. Many thanks to you for your dedication and hard work over the past year. Of course, there would not be need for a committee if you, the members, did not support the activities of the branch to the extent that you do. You are a great group of people and we thank you for making our efforts worthwhile.

The next committee meeting signals the end of my third two-year term as chairman of the Trans-Vaal Branch. It is a real pleasure to be so intimately involved in the affairs of the branch and the society.

