

# ARTEFACTS

Reports covering the period February to June 2009

## EVENING LECTURES

### February: DNA is at the heart of evolution

**Professor Himla Soodyall is Director of the Human Genomic Diversity and Disease Research Unit, National Health Laboratory Service, SA Medical Research Council.**

The day of the lecture, 12 February 2009, was the 200<sup>th</sup> anniversary of the birth of Charles Darwin. Prof. Himla Soodyall introduced her lecture by saying that this date was being celebrated worldwide as it marked the enormous contribution that human curiosity and ingenuity had made to scientific knowledge. The year would also be the 150<sup>th</sup> anniversary of the publication of Darwin's *On the Origin of Species* in 1859. For more than 20 years Darwin had collected vast quantities of scientific data and pondered the issue of how animals and plants changed their morphology over long periods. Eventually he realised that the mechanism underlying the process of evolution was that of natural selection. This idea led to him publishing *On the Origin of Species*. Darwin's work provided the foundation for the now convincing evidence that modern-day genetic studies have unravelled concerning human origins. Mitochondrial DNA (mtDNA) and Y-chromosome DNA data have provided insights into how females and males, respectively, have contributed to shaping our evolutionary history. In addition, data from the completed human genome sequencing project, coupled with genome comparisons, have provided deeper insights into what makes us human. Through time, species adapted to the environment, but you could not change your DNA, your blueprint of life.

Prof. Soodyall's research focuses on the evolutionary history of the peoples of Africa and she is currently the principal investigator representing sub-Saharan African on the Genographic Project, which is supported by the National Geographic Society in partnership with IBM and the Waitt Family Foundation. In her lecture, Prof. Soodyall introduced the principles of genetic research and elucidated the mechanisms underlying the formation and evolution of human traits. She elaborated on the two types of DNA that were used to trace ancestry: mtDNA, which lies outside the cell nucleus and is inherited from the maternal side, and Y-chromosome DNA, which

is passed on only through the male line. The only source of variation among mtDNA types is mutation, and the number of mutations separating two mtDNA types is a direct measure of the length of time since they shared a common ancestor.

Since women do not carry Y-chromosomes, they can only be tested for mtDNA, but men can be tested for both types. Occasionally some of the genes carried by the DNA types mutate and the resultant genetic changes are passed on to future generations. The mapping of these mutations allows geneticists to track the history of various population groups. This has enabled researchers to determine that the most recent common ancestor of all modern humans on the maternal side lived some 150 000 years ago, while that on the paternal side dates to somewhere between 60 000 and 80 000 years ago.

Prof. Soodyall then provided information on three facets of her work. The first is of a scientific nature and involves mapping the genetic codes of populations around the globe, but in particular in sub-Saharan Africa and the Indian Ocean islands, and especially those groups that have lived in relative isolation in a particular region over a long period of time. The second aspect of her studies revolves around three burning questions:

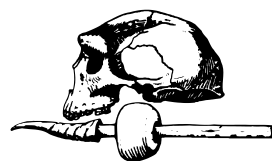
1. Is it possible to localise the most likely regions for the origins of various lineages?
2. What impact did trade, which had occurred for well over 2 000 years in the Indian Ocean, have on population groups?
3. If the African continent is divided by region and language, do the results mesh with the genetic data?

She explained that her work covered population genetic studies in coordination with a worldwide study undertaken by the National Geographic Society. She related how the knowledge gained through DNA studies had been used to demonstrate that *Homo sapiens sapiens* evolved in Africa and then about 60 000 years ago began migrating to the rest of the world. She pointed out that excavations at early human sites, such as Border Cave, could provide supporting evidence to demonstrate that this migration had started from southern Africa. In this respect it is important to note that the oldest branches of Y-chromosome DNA are found in San populations in southern Africa, although also in population groups in the Sudan and Ethiopia.

She elaborated on some other research projects, including research concerning the origin of the Karretjie people living near Colesberg. Their ancestry had been unclear since they were nomadic sheep shearers and fence menders. Samples taken from 36 individuals had demonstrated that their lineage can be traced back to an origin that is common in Khoisan populations and is confined to southern Africa.

Another of her projects had examined the population of Buysdorp, a small town situated north of Makhado (Louis Trichardt), which was founded by the son of the renegade Coenraad de Buys from whom the inhabitants are reputedly considered to have descended. If this were indeed the case, the men would all carry the same Y-chromosome, yet tests showed that it occurred in only eight of the eleven men tested.

Prof. Soodyall also referred to her research project related to the ancestry of people living in



**A publication of the Trans-Vaal Branch**

**South African Archaeological Society**

**PO Box 41050 Craighall 2024**

**Editor: Reinoud Boers**

**Production: Marion Boers**

the Maldives. This string of islands had been occupied for over 2 000 years and had been a stopping point for Indian Ocean traffic over a long period of time. The ancestry of the original inhabitants was not clear, yet many inhabitants displayed physical traits reminiscent of southern Indians and their language was related to Dravidian. Results from mtDNA tests showed that 58 per cent belong to the M-Haplotype, which is common in southern India and Sri Lanka, 25 per cent to the U-Haplotype, which is common in Eurasia, and 2,7 per cent to the D-Haplotype, which is common in East Asia. Y-chromosome tests revealed that over 50 per cent of men belonged to the Indian Haplotype, while 20 per cent were part of the J-Haplotype prevalent in the Middle East.

Himla Soodyall acknowledged the significant role of fellow researchers in the Human Genome Project, for example James Watson and Craig Venter, referring to an article published in *Science and Nature* in 2003. She mentioned significant biology informatics initiatives such as the research of Francis Collins and the important research being done at Wonderwerk Cave and Pinnacle Point. She also referred to the Genographic Project, a five-year genetic anthropology study that aims to map historical human patterns, and to research that has a close bearing on contemporary societies. This included research on cultural and physical changes that followed the domestication of cattle some 7 700 years ago, the development of lactose intolerance and lactose persistence. She also touched on adaptations related to carbohydrate and alcohol metabolism, and to projects that focus on the split of the south-eastern and southern Bantu-speaking peoples. Prof. Soodyall highlighted the HapMap project collaboration that identifies single-nucleotide polymorph (SNP) base changes and that has collected 3,1 million SNPs over three years, and the development of a map of recent positive selection in the human genome, such as for example the selection of genes for skin colour.

The audience appreciated the ease with which Prof. Soodyall guided them through the intricacies of genetic research and demonstrated, in an accessible way, how information could be used to trace the origins, migrations and relatedness of modern human populations. Her enthusiasm inspired quite a few members to have a DNA test done. Her Human Genetics Laboratory provides an open facility for DNA testing and analyses (funds raised from these tests are returned to the communities involved in the larger project). Anyone interested in having their DNA tested can phone 011 489 9237.

**Report by Anna Steyn**

## **March: Darwin and supernatural selection**

**Andre Croucamp has a degree in theology from Rhodes and a Masters in cognitive archaeology from Wits. His particular passion is making science available to the layman.**

‘The epic of evolution is the sprawling interdisciplinary narrative of evolutionary events that brought the Universe from its ultimate origin to its present state of astonishing diversity and organisation. Matter was distilled out of radiant energy, segregated into galaxies, collapsed into stars, fused into atoms, swirled into planets, spliced into molecules, captured into cells, mutated into species, compromised into ecosystems, provoked into thought, and cajoled into cultures. All of this (and much more) is what matter has done as systems upon systems of organisation have emerged over 14 billion years of creative natural history.’

*Loyal Rue, Everybody's Story: Wising Up to the Epic of Evolution*

Andre Croucamp said that in this quote the philosopher, Loyal Rue, focused on what unites us all and suggested that evolution was the basis for a contemporary myth that had the potential to unite, not only all human beings, but all beings on the planet. The year 2009 was the 150<sup>th</sup>

Anniversary of an extraordinary innovation, Charles Darwin's 1859 book *On the Origin of Species*. About the book, the philosopher, Daniel Dennett had said, ‘If I were to give an award for the single best idea anyone has ever had, I'd give it to Darwin.’ Darwin was intrigued by the wonderful diversity of species each with its own abilities to survive in a changing world, and the most important idea he had given us was that we are all connected to and had grown out of the great family tree of life. He wrote: ‘I should infer from analogy that probably all the organic beings which have ever lived on this earth have descended from one primordial form, into which life was first breathed’.

Recognising our interconnectedness to this family tree, according to Croucamp, can be a source of profound inspiration. We are not parachuted into the universe; we are grown out of it. We now know that we carry memories of the last 14 billion years in our bodies. An example is the carbon we carry in our bodies. Carbon is the most important ingredient of organic molecules. It was created inside stars in the early universe. We are literally made out of stardust. The more cynical amongst us might say that we are made out of the nuclear waste of burnt out stars.

We carry memories of that moment when single-celled organisms joined together to become multi-cellular organisms. This was the moment that fatty acids, those healthy Omega-3 oils one can buy in health shops, first appeared in the sea and combined with cell membranes to create semi-permeable membranes making inter-cellular communication possible for the first time. We even call parts of our brain reptilian because we share it in common with reptiles. We call other parts of our brain mammalian because we share it in common with mammals. There is even a bone in our ear that used to be the jaw of a fish. If fishy bits in our ear is a strange thought, consider that the proportion of DNA needed to build and run a human body is only about five per cent. A large proportion of the rest consists of sequences of genes called LINES and SINES that have nothing to do with reproducing or managing a human body. They are simply hitching a ride. Some scientists say that human beings, animals and plants are just different ways genes have found to reproduce themselves. An astonishing eight per cent of our genome consists of about 450 000 retroviruses, left over from infections our ancestors experienced somewhere in the last few million years. We are more like a small ecosystem or a colony of organisms than a single organism.

Croucamp gave another example: In each cell in our body there is an organelle called the mitochondria. This acts as an energy management system for the cell. Mitochondria were originally separate organisms that were incorporated into single cells billions of years ago as a more efficient way of managing energy. Single cells outsourced their energy management to this little organism that still lives in almost every cell of our body. We inherit our mitochondria from our mothers and by testing its DNA we can trace our ancestry through the female line. Using what we call the ‘molecular clock’ and ‘genetic marker studies’ it is estimated that all people on earth are related to a female ancestor who lived in Africa about 150 000 years ago. All mitochondrial DNA in living humans is connected to her, the Mitochondrial Eve.

Mitochondrial Eve is the female counterpart of the Y-chromosomal Adam. The X and Y-chromosomes carry the genes that determine sex. If one inherits an X-chromosome from one's mother's egg cell and an X-chromosome from one's father's sperm one becomes a woman. If one inherits an X-chromosome from one's mother and a Y-chromosome from one's father one becomes a male. The Y-chromosome is only passed from father to son. Y-chromosomal Adam, from whom all Y-chromosomes in living men are descended, probably lived in Africa between 60 000 and 90 000 years ago.

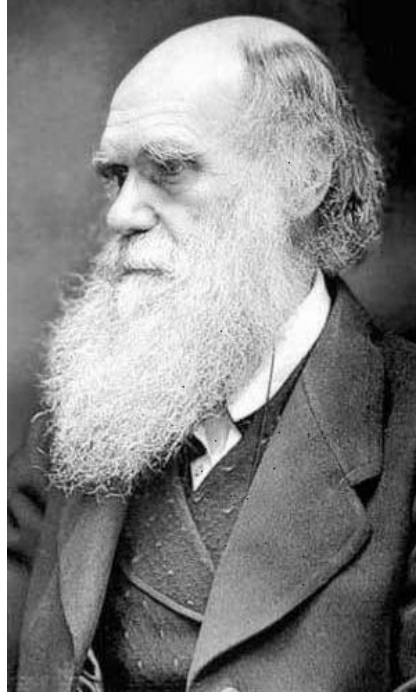
André Croucamp said that another example of a memory of evolution that we contain in our bodies are the metabolic processes, which first appeared and were rigorously tested in bacteria

about 3,2 billion years ago. Bacteria's other great contribution, according to Croucamp, are plants. The chloroplast with which plants make food for themselves is actually a cyanobacterium living within the plant's cells. More than 2,5 billion years ago they began to take up residence within certain cells, making food in return for a home. They also began producing oxygen. So the story of evolution is not just about the diversity of species, but has profound consequences for our understanding of our world.

We are all more interconnected than we think we are, he said. We share a common ancestor with all living beings on the planet. Our DNA carries traces or 'memories' of LUCA, the last universal common ancestor. LUCA lived about 3,5 billion years ago and all living organism on the planet have some of LUCA in them. We are also an integral part of a much bigger process. There is no point where we end and the universe begins. We are completely integrated into the dynamic processes of the universe. Our body has been replaced many times over by the bits of the universe that are flowing through the pattern of integrity that we are. If we were to speed up the movie of our life we would see the world flowing through us: food, water, gasses like oxygen and carbon monoxide, solar radiation and other forms of heat energy, sperm from another human being, drugs, infectious organisms, not to mention technologies like pace makers and false teeth. What about the languages we have learned, the cultural values we have embraced and the images from the media – all moving through the pattern of integrity that we are, sometimes maintaining and sometimes changing it.

Because the universe is so interconnected, to explain anything fully we have to go back to the beginning of the universe. Everything we know is linked by a series of causes and effects back to that first event. Obviously it is not useful to make every explanation a chain of cause and effect going all the way back to the big bang; we only go as far back as is useful for us to understand a phenomenon. In the case of understanding our physical bodies we go as far back as our DNA can take us, or we go further back with the fossil record. If we are trying to understand how life began we might have to go back 4 billion years. If we are trying to understand technology we may have to go back 2,5 million years to the manufacture of the first stone tools. If we are trying to understand the first physically modern humans we need to go back 100 000 years.

For an understanding of genetic engineering, according to Croucamp, one has to go back 10 000 years to when agriculture began. Here we already see humans manipulating genes: farmers replanting only the fatter, juicier grasses and throwing away the thin, dry ones. Over time the better grasses get bigger and bigger until we have the mielie, which does not even look like a grass anymore. Agriculture is an example of deliberate selection by humans. Natural selection works in a similar way. The origin of species by natural selection can simply be described as individuals with traits that are more adaptive in their environment being more successful at reproduction, and passing their adaptive traits onto their offspring. Three things are needed for



Charles Darwin [Picture from <http://media.Photobucket.com>]

natural selection to occur, namely:

- Reproduction: Information that can replicate itself.
- Mutation: Variations in the information each time it reproduces.
- Selection: Environmental factors that either increase or decrease the mutation's chances of reproducing again.

Strictly speaking, Croucamp said, evolution really began when the first units of reproduction appeared. These were not organisms, but large protein molecules. Mutation is essentially a copying error that happens when genes reproduce. A degree of genetic mutation occurs naturally at the moment of conception. It can also be caused by radiation, chemicals and viruses. Human beings have, of course, also invented the technology of genetic engineering for the deliberate manipulation of genes. But mutation is random. DNA mutates every time it reproduces. These mutations are 'new data' and can cause changes in physical form that may or may not add an advantage to an organism's survival. Organisms that survive are more likely to pass their genetic mutations onto their offspring. Evolution is essentially the juxtaposition of a change in a species with a change in an environment. A successful juxtaposition is a 'match' that continues to reproduce itself. This is what we refer to as selection.

The apparent increasing complexity of organisms throughout natural history is a result of all sorts of processes, not just genetics. Cells with a nucleus became possible after certain bacteria incorporated mitochondria into themselves. Multi-cellular organisms became possible when fatty-acids appeared in the ocean and made semi-permeable membranes possible. Large organisms only became possible when bone appeared about 500 million years ago. Human brains became more complex when genetic mutations allowed them to start metabolising fat in ways that were different to their hominid and primate cousins. Most scientists believe that evolution does not move in any direction. The process of evolution cannot see into the future. It simply matches changes in organisms with changes in the environment. Humans are the only species that are able to imagine the future with such clarity and then deliberately try and create it.

### How can religion and science build knowledge together?

André Croucamp said that what he found really interesting was how the theory of evolution was singled out by religious fundamentalists as somehow being different from other scientific theories that were based on the same methodology. Evolution was a product of scientific method. To doubt the theory of evolution was in a sense to doubt the methodology behind it, which was to doubt science as a whole. He posed three questions, as follows:

- If the theory of evolution is different to other scientific theories, what is this difference?
- If evolutionists are propagating a massive fraud and conspiracy, how has it survived scientific scrutiny and what is the aim of this conspiracy?
- If religion and science are going to have an open conversation to genuinely understand each other and build knowledge together, what criteria do we accept for the identification, accumulation and representation of knowledge?

Can one, for example, believe in evolution in the same way as one believes in God? The use of the word 'belief' in these two contexts is completely different. The difference has to do with the different ways in which science and religion build knowledge. Knowledge based on the subjective spiritual experience of individuals and the perceived authority of religious texts and traditions is very different from the kind of knowledge that science tries to accumulate. The kind of thinking used to understand drug-resistant TB is not the same kind of thinking we use to try and understand our relationship with God. The personal experience of being loved by God cannot be



expressed in any kind of rational scientific language. It is ultimately inexpressible in words and has to be hinted at through metaphor and poetry, and has to be performed through ritual and acts of compassion. It cannot be apprehended through reason.

This difference in ways of building knowledge was most clearly illustrated by the Dover Trial in the US in 2004. A school board wanted the school's science teachers to teach Intelligent Design (ID) as an equally valid scientific theory alongside evolution. They wanted teachers to read out a disclaimer that suggested that the theory of evolution was a disputed theory and that ID as represented by the book *Of Pandas and People* was a valid alternative. The book says: 'Intelligent Design means that various forms of life began abruptly through an intelligent agency, with their distinctive features already intact – fish with fins and scales, birds with feathers beaks, wings, etc'.

The science teachers did not accept ID as a credible scientific theory, resigned and took the school board to court. The court held that it was the school board's responsibility to prove that ID was a scientific theory according to the internationally accepted criteria. A team of the greatest ID experts in the US was put together for the trial, included the famous Michael Behe, whose book *Darwin's Black Box* is all about the idea of irreducible complexity, a major intellectual assertion of ID. Behe claims that the motor that drives the flagella on certain bacteria (the most effective motor that exists) is irreducibly complex, i.e. it can only function when all the parts are present. Therefore it had to be designed as a complete and irreducible whole. The prosecution produced biologists who showed that Behe's claims were false and that there are in fact simpler versions of this motor that serve other useful purposes and do point to the incremental changes evolution speaks of. The example they gave was that of the injections bubonic plague uses to inject toxins into cells. It looks exactly like the flagella with two pieces missing. Behe's Lehigh University issued a statement of non-support for his work.

During the trial the ID guys also presented their claim that evolutionists cannot present any examples of fossils that are intermediate species, like a half-fish half-land animal. This too was shown to be a fallacy. There are many living intermediate species like monotremes that are egg-laying mammals and fossils of intermediate species, like Tiktaalik. One of the greatest popular books that I have read on evolution is Neil Shubin's *Your Inner Fish*.

One of the favourite objections that ID brings against evolution is the issue of dating fossils. But radiocarbon dating techniques have improved over the years. There is also electron spin resonance (ESR) for the dating of tooth enamel; thermo-luminescence (TL) for the dating of burnt flint and stone; optically stimulated luminescence (OSL) for the dating of sediments; open system U-series for dating bones; paleogenetic analysis for extracting DNA from fossil specimens; and geo-chronological dating techniques. The scientific community is very critical of dating processes because they are always trying to catch each other out and present a better theory, so any dating of a fossil or rock stratum goes through incredibly rigorous scrutiny. The precise date of creation, still accepted by many creationists, was established by the Bishop of Ussher in 1658 as 22 October 4004 BC. The time from creation to the flood was calculated as 1656 years BC. If this were true, it would mean that the flood took place at about 2350 BCE, at a time just after Egyptians and Sumerians had already begun producing written history!

The judgement of the Dover Trial was that ID could not be considered a scientific theory and that there was nothing scientific about it. The judgement said that the ID proponents were misappropriating science to create religious propaganda. What struck André Croucamp about the trial are three things:

1. ID proponents insist that evolutionists must admit to the weaknesses and limits of the theory

of evolution, but are not prepared to admit to the weaknesses and limits of their own ID thinking. According to Karl Giberson in *Saving Darwin*, 'Biblical scholars and theologians from all but the most conservative Christian denominations were every bit opposed to creationism as the scientists from their ivory towers'.

2. When the trial was not going in favour of ID, the judge and the science teachers received death threats from local Christians in Dover.
3. When ID supporters enter the scientific debate and their ideas are disproved using universally accepted scientific criteria, they do not take that information back to their constituency, like a scientist would, and say: 'Hey guys, we were wrong, let's get back to the drawing board'. Instead they hide the information from their ignorant congregations and continue to present the disproved ideas.

Croucamp said that in his workshops on evolution he had found that most students are surprised to hear that the theory of evolution says nothing about the existence or work of God, as fundamentalists have convinced them it does. Many people of faith embrace the theory of evolution and see it as something that can enrich their faith. The question is then: What do the ID proponents really believe is at stake here? The answer must lie in literal interpretations of scripture, which was not always core to Christian spirituality. According to the reputable biblical scholar, Karen Armstrong, the obsession with literal interpretations is ironically a result of the way The Enlightenment from about the mid-17<sup>th</sup> century valued reason and scientific investigation. Many people of faith also have a problem with the idea that humans are animals and have an ancestry that ultimately includes millions of other species.

Darwin wrote: 'I should infer from analogy that probably all the organic beings which have ever lived on this earth have descended from one primordial form, into which life was first breathed'. We now know that there are about 500 genes that all living things share. These genes have survived essentially unchanged for over two billion years. By studying the genetics of a fly we have been able to solve the riddle of why certain birth defects occur in humans, because of their common genetic inheritance, their shared genetic ancestry. Such applications of the theory of evolution are key to helping us understand the importance of biodiversity, conservation and sustainable environments.

The term 'biodiversity' refers to the variety of all living things (plants and animals), ecosystems (rain forests, deserts, wetlands and coral reefs) and processes (ecological and evolutionary). Biodiversity also refers to the diversity within species that is caused by genes and also includes humans as a species within the environment. This diversity is necessary for healthy and sustainable environments. The more diverse systems are the more robust they tend to be. Systems in which there are very few species and habitats tend to be more fragile, and a change in just one variable can threaten the whole system.

About 99,9 per cent of all species that have ever existed on Earth are already extinct. Extinction is a common and natural process. It is not so much about 'the survival of the fittest' (a phrase from Herbert Spencer, not Charles Darwin). Darwin said: 'It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.'

The theory of evolution is not the first scientific theory to challenge literal interpretations of scripture. In 1610, Galileo's observations of the phases of Venus proved that it orbited the Sun as Earth must also. This shocked many Christians. An example of a Christian theologian who believed in evolution is Teilhard de Chardin, who was a theologian and a palaeontologist. When he tried to integrate the theory of evolution into Christian spirituality he was silenced by the Catholic Church. Not to believe that Adam appeared as a result of the pure force of God's will and

word not only threatened the idea of the separate creation of humans, but also threatened the idea of original sin. Teilhard joined a group of fellow Jesuits in China where, ironically, he was part of the team that discovered Peking Man. But what is really important about this man was the way he saw the theory of evolution enriching spirituality. He believed that history and evolution had a purpose – to draw all things towards conscious union with God. He said: ‘My starting point is the fundamental initial fact that each one of us is perforce linked by all the material, organic and psychic strands of his being to all that surrounds him ... If we look far enough back in the depths of time, the disordered anthill of living beings suddenly, for an informed observer, arranges itself in long files that make their way by various paths towards greater consciousness.’ He saw the whole of evolution as a creative process, and believed that there is an inherent compulsion in matter to arrange itself in more complex groupings, exhibiting higher levels of consciousness.

André Croucamp concluded his excellent talk by stressing that the theory of evolution itself did not claim to know of any purpose and did not propose any direction or ultimate goal for the whole process.

Summary of André Croucamp's paper by the editor

## April: Easter Island – Rapa Nui

**Lilith Wynne was twice chairman of the Trans-Vaal Branch and, in 1995, Vice President of the SA Archaeological Society. She received the society's President's Medal for Merit in 1992.**



Aerial view of Easter Island [from [www.yannarthusbertrand2.org](http://www.yannarthusbertrand2.org)]

Lilith Wynne presented a fascinating account of the successful SA Archaeological Society's tour to South America arranged by her in September 2008. The group travelled via Buenos Aires to the Iguassu Falls on the border of Argentina and Brazil, across the Andes to Chile and Santiago, the Chilean Lake District, Easter Island and back via Buenos Aires. Her talk started with the Iguassu Falls, which were awesome, with the group sailing literally under the amazing curtain of water. In Santiago, the group visited the fascinating museum and the Plaza de Armas, the main square, with its enormous palms, *Jubeae chilensis*. These trees are the closest species to the gigantic Easter Island palms that were felled to extinction. The travellers then followed the snow-capped Andes Mountains on a flight to southern Chile to visit the restored archaeological site of Monte Verde. It is one of the oldest settled sites in the Americas, dating back to 12 500 BC, 1 500 years earlier than the Clovis Settlement in New Mexico. Accommodation was in the charming village of Puerte Varas on the banks of Lake Llanquihue, which is flanked by the extinct snow-capped Osoro volcano. Chiloe Island in the lake was visited.

A five-and-a-half-hour flight from Santiago brought the group to the main attraction of the tour, Easter Island. In 1722, the island, which has the shape of an isosceles triangle formed by three volcanoes, was sighted by Dutch Admiral Roggeveen on Easter Sunday, who, with great

imagination, named it Easter Island. The locals call their island Rapa Nui. One arrives at Mataverí Airport, which has a massive runway donated by the USA as it serves as an emergency runway for the landing of NASA space shuttles. The airport lies on the outskirts of the only town on the island, Hanga Roa.

Lilith told her audience that it was not known why Hoto Matua, the legendary first ancestor, left his Polynesian home with his extended family between about 400 and 600 AD, and with excellent sailing skills and some luck reached distant Easter Island. An Ancestor cult developed on the island that erected and worshipped the enormous, mostly inland-facing *moai* (statues) on *ahu* (platforms) for which Easter Island is famous. Using basalt tools, the islanders carved the *moai* out of the soft tuff at Rano Raraku quarry. Here there are still see 397 statues at different stages of completion and two questions remain unanswered, namely: ‘Why were the *moai* abandoned in situ?’ and ‘How were they moved?’ The largest *moai* in the quarry is 21 m long, while the tallest erected statue has a height of 9,8 m.

The group's first introduction to *moai* was at the small harbour. Visitors are immediately impressed by their enormous size. Many *moai* are purported to have been toppled during clan warfare, at which time many heads were also deliberately broken off to destroy the *mana* (spirit) and demoralise rival clans. Many of the *moai* were adorned with *pukao* (top notches) carved out of red scoria and during ceremonial occasions the faces were enhanced with eyes carved from white coral with pupils fashioned from scoria or obsidian. At the harbour site the foundations of the boat-shaped houses of the chief and high priests are still visible and, much to the group's surprise, feral horses were lazily grazing nearby.

William Mulloy, who was part of Thor Heyerdahl archaeological expedition in 1955, re-erected and restored many of the toppled *moai*. The group was privileged to have his granddaughter, Josie, as their guide. With waves rolling in from the Antarctic, one gazes at the 15 *moai* restored by Mulloy at the Tongariki Ahu site, all of them with their arms at their sides and silhouetted against the sea – one could almost feel an ancient presence, Lilith said. Sadly, the *moai* are slowly being eroded by the elements.

The only ceremonial platform on the island where *moai* face the sea is at Ahu Akivi. The back walls of most of the *ahu* were used as religious areas where bodies were cremated and interred. The best preserved *moai* are found at the Nau Nau Ahu on Anakena beach. These statues are clearly decorated with ceremonial engravings that include tattoos and loin cloths. The Ancestor-worship cult came to an end when the island's last trees had been cut down. Clans fought for control of the depleted food resources, killing became rampant and eventually the people resorted to cannibalism.

Rano Kau is the largest water-filled caldera on Easter Island and served as the original water supply. It is situated above the Oronga site, which became the new main ceremonial centre with corbelled-roofed stone houses and stone-walled chicken coops. In about 1760 a democratic Birdman cult developed to restore order out of chaos and genocide. Each year a ceremony was held to elect the new leader for all the clans. Each clan elected a representative, and at a signal these representatives scrambled down the 300 m Orongo cliff face and swam 2 km with the aid of a *poka* (reed float) through shark-infested waters to the islet of Moto Nui to collect the first Sooty Tern egg of the season. The first to return with an egg became the Birdman ruler for that year, although the winner could nominate his chief in his place. The Birdman was shaved, painted red and lived in isolation. He controlled all activity on Rapa Nui during his rule. He also did not wash, nor cut his nails and hair during the year.

Lilith recounted that there are over 1 000 petroglyphs in the Oronga area. Birdmen are





Easter Island petroglyph birdmen at Orongo

represented in 471 of them, but vulvas also feature well, indicating the islanders' focus on fertility. The Birdman cult came to an end in 1865 when the first missionaries arrived. Caves with rock paintings of birds were also visited and the tour group took a boat trip to view the three islets nestled in the calm turquoise sea below Orongo.

Rongorongo, the written script found on Easter Island, which baffled archaeologists for decades, is now known to be a Mangarevan chant brought to the island in 1870 by Mangarevan Catholic missionaries. Appearing only on wood, even on an oar belonging to a European boat, the script is written in the fashion of Boustrophedon, which is writing from right to left and left to right in alternate lines, similar

to the pattern made by an ox ploughing a field. There are only 25 examples left in the world. In 1995 Steven Fischer claimed to have broken the Rongorongo code.

Lilith ended her colourful talk with a quote from the book, *The enigmas of Easter Island*, by Paul Bahn and John Flenley: 'Consider Easter Island a microcosm of our own world, and thus a cautionary tale relevant for the future of all humankind'.

Report by Marilyn Turner

## May: Chains of operation and ceramic technological analysis

**Professor Karim Sadr is Head of the School of Geography, Archaeology and Environmental Studies, University of the Witwatersrand. His current interests focus on the Neolithic of South Africa, transition from hunting to herding, complex hunter-gatherers, and ceramic and stone-tool technology.**

Prof. Sadr reported on a Ceramic Technology Workshop hosted by the Department of Archaeology at Wits University in December 2008. He acknowledged Prof. Tom Huffman as co-organiser of the workshop and the major contribution made by his recent publication, *Handbook to the Iron Age: The archaeology of pre-colonial farming societies of Southern Africa*, which had enabled archaeologists to identify the cultural association of ceramics encountered in the field. He also recognised the financial sponsorship of the Trans-Vaal Branch of the SA Archaeological Society, amongst others, that had made the workshop possible. The objective of the workshop, which was presented by colleagues from France, Belgium and Switzerland, was to introduce fresh ideas that would shed new light on southern African ceramic studies. The workshop was attended by 36 archaeologists and students.

Karim Sadr said that the analysis of archaeological ceramics in southern Africa, which extended back to the 1920s, had largely focused on ceramic style, decoration and placement on the pot as reflected, for example, in the work of Caton-Thompson. The technological approach, or an analysis of how the pots were made, a method generally applied by researchers in Europe, had been less popular in South Africa. He described how the sequence of actions or 'chains of operation' in ceramic manufacture could shed light on past social entities and their interactions.

Workshop sessions were presented by Prof. Balentine Roux of the University of Paris, Anne Mayer of Geneva University, Marie Agnes of Courty University Perignon, and Andre Living-

stone Smith and Olivier Gosselain of the Free University of Brussels. Karim Sadr indicated that the technological approach followed during the workshop was parallel to the style approach demonstrated in Huffman's publication and that the two methods were mutually informative.

The technological approach focuses on specific actions, or chains of operations, involved in the manufacture of ceramics. It looks at what material is used, what preliminary actions are involved in preparing the material, how the pottery is fashioned, finished and decorated, and how it is fired. It is the choices made along the way that tell the archaeologist about functionality choices and cultural restraints. For example, the start to fashioning a pot, i.e. whether it is begun from a lump of clay or whether a spiral coiling technique is used, reflects group specific preferences that provided comparable material for research. Choices of manufacture are reflected in marks and cross-sections in both surface features and microfabrics, and are visible macro and microscopically, as well as through the application of X-ray technology. The technological approach studies the choices involved in the manufacturing process, as well as the tools used, motions applied and the motor habits reflected in the final product. Prof. Sadr noted that this approach had already been used by Garth Sampson when he looked at some of the ceramics in Seacow Valley.

The workshop considered the African work of Olivier Gosselain, Andre Smith and Anne Mayer. Research in the Congo proved particularly useful where the ceramic traditions of living potters had been studied. It transpired that by looking at bottom sections alone one could tell quite a lot about how the pottery was made. This enabled researchers to distinguish different technological zones that correlated with groups, cultures and languages related to the Luba, Bemba, Songa and others.

Mayer had looked at the peopling of Mali. A reference library had been established that contained, among others, ceramic specimens of different attributes that reflected features of manufacture preferred by the Dogon, Fulani and others. It was by studying such detailed attributes that Mayer could recreate the history of the peoples.

The work of Gosselain in the southern region of Niger had also been particularly useful. He had been able to distinguish, for example, the temper used and the elements that were added, whether it was husk, dung, ash, clay or other. All of these features could be observed in the ceramic sections. It transpired that each ethnic group had its own recipe, yet they all produced the same kind of pots and one could not distinguish between them when looking at the ceramic surfaces. Gosselain could identify zones where similar recipes had been used, could draw conclusions on traffic between communities and could isolate areas where 'communities of practise' had been created.

The outcomes and subsequent application of knowledge gained from this workshop would depend upon the individual South African participants, yet it was clear that the technological approach held great potential, Prof. Sadr said. By identifying clay sources, the seasonal migrations could, for example, be tested along the West Coast between the Berg River and Cape Town, or the



Participants at the ceramic technology workshop

seasonal cycle of the Khoe-Khoe could be checked by determining the sources of origin of ceramic materials from, for example, Vredenburg, Wellington and Yzerfontein.

The value of the skills transferred during the workshop could not be overstressed, according to Karim Sadr. These skills could be applied to ceramics throughout the range of southern African ceramic manufacture and could be used to shed light on ceramics from recent periods through to the oldest pottery associated with the San from the central Karoo. **Report by Anna Steyn**

## **June: Exciting new ideas on the most distant evolutionary origins of mammals**

**Professor Bruce Rubidge is Director of the Bernard Price Institute of Palaeontological Research, University of the Witwatersrand. His research speciality is in therapsids, sedimentology and basin development in the Karoo.**

The rocks of the Karoo Supergroup represent an almost continuous depositional succession from 300 to 180 million years ago. Because these rocks are rich in fossils, the Karoo is an ideal place to study 'reptilian' biodiversity changes over this extended period. Prof. Bruce Rubidge emphasised the taxonomic diversity of tetrapods in the Karoo, pointing out that the ancestors of the three extant tetrapod lineages (anapsid, diapsid and synapsid) were represented in the Karoo. He stressed the unsurpassed wealth of fossils of therapsid mammal-like reptiles that chronicle the early evolutionary history of mammals. The most advanced therapsids and the transition to mammals has been reasonably well researched, but the most distant ancestry of therapsids from pelycosours has received less attention.

Rubidge's talk concentrated on research being undertaken on the rocks of the lowermost Beaufort Group. This biozone contains the oldest therapsids in the Karoo and has had relatively little recent attention. For the past two decades Rubidge and his team of collaborators and students have been systematically collecting fossils to understand the stratigraphic ranges of the different fossil species in the oldest rocks of the Beaufort Group. The purpose of this is to refine the biostratigraphy of the 'Tapinocephalus' Assemblage Zone in order to determine the biodiversity changes in the ancient Karoo. The aim is to determine early evolutionary radiations within the therapsid mammal-like reptiles and also to understand the distribution patterns of these distant ancestors of mammals. In the process Rubidge and his team have discovered and named several new types of therapsids that have proved to be important to understanding the early evolution of therapsids.

A major problem in understanding the early radiation of mammal-like reptiles is the evolutionary link between pelycosours and therapsids. The former group, known mainly from the northern hemisphere, predate the therapsids, are morphologically more primitive and are considered to be the ancestors of therapsid mammal-like reptiles. The evolutionary link between pelycosours and therapsids has not yet been discovered and recent research has considered that there is a gap in the continental stratigraphic record at this point, the so called 'Olson's Gap'.

Recent research by Liu, Li and Rubidge has led to the description of a new, very primitive therapsid from China that appears to fit within 'Olson's Gap'. Final resolution of this will depend on more accurate dating of the rocks in which the fossil was discovered. The recent discovery of datable volcanic ashes from the Lower Beaufort of South Africa by Rubidge and his team will greatly enhance this research and enable the dating of extinctions and evolutionary events affecting the earliest ancestors of mammals.

Prof. Rubidge concluded with the sobering speculation, in the context of the many mass extinctions of the past, that the earth could be 60 000 years into the sixth mass extinction, as evidenced by proven species loss currently taking place.

**Report by John McManus (with considerable input from Bruce Rubidge)**

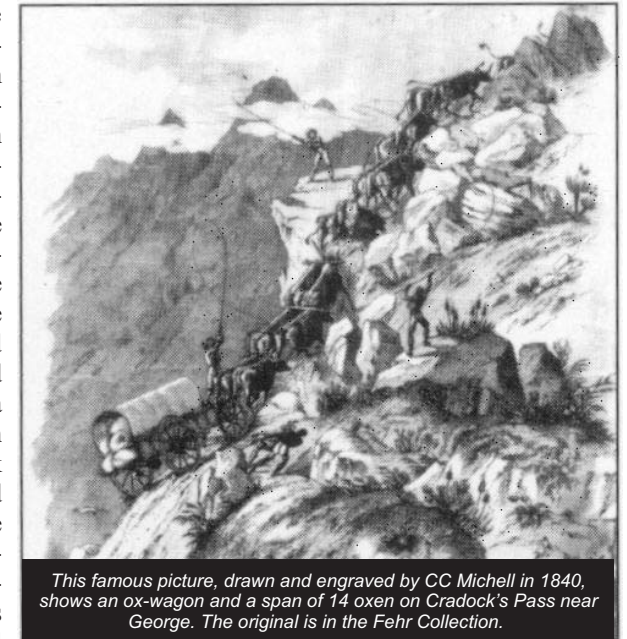
## **FIELD EXCURSIONS AND OUTINGS**

### **February: The history of wagon-making at The Ring, Preller House and Eugene Marais' cottage**

**Excursion with Professor Erik Holm, an entomologist formerly with the University of Pretoria and wagon builder, and scholar Dr Johann Marais.**

In the pleasant surroundings of The Ring Oxwagon Lodge near Hartbeestpoort Dam, Prof. Erik Holm spoke to us about the fascinating history of the ox-wagon, the 'ossewa', in South Africa. The ox-wagon developed out of the need for Jan van Riebeeck to provide transport at his Cape station. His superiors had not supplied him with enough horses for the needs of this community, but he observed the Khoe with their carts and the manner in which they managed their spans of oxen. Each ox had a name to which it responded when commands were given. Van Riebeeck involved his ships carpenters to build wagons and the terminology for the ox-wagon is thus that of the shipwright. (The naming of oxen reminded me of Prof. Adrian Koopman's fascinating lecture at our Annual School in 2006 entitled 'Unpacking Jamludi: Travelling with the names of oxen'.)

Thus began a proud tradition of ox-wagons, unique to South Africa, which were invaluable to the opening of the country for settlement, the development of the mines, the Anglo-Boer War and farming. The spans pulling the wagons could consist of as many as 16 oxen and the wagons could carry very heavy loads. Wagons in Europe were much smaller and lighter as they had the benefit of roads or cart tracks, and they were usually pulled by horses or donkeys, as can still be seen in Eastern Europe today. In the United States, donkeys were used to pull carts and horses to pull



*This famous picture, drawn and engraved by CC Michell in 1840, shows an ox-wagon and a span of 14 oxen on Cradock's Pass near George. The original is in the Fehr Collection.*



large wagons similar to those used here, especially when the West was opened up.

Ox-wagons became part of South African history and a way of life for country people and transporters. For the Vryburgers or Trekkers ox-wagons became a kind of 'mobile home' and were equipped for every eventuality. Everything had its place and order. A ladder was tied to the side, tools were suspended from underneath the wagon, the canvas cover had pockets for storage and even a chicken coop had a place at the back. While the Vryburgers often had a homestead, they spent many months of the year 'trekking' to hunt and 'gather'. Many of us envisage the Great Trek as one long journey, but in fact it was a journey of indeterminate length with many diversions and 'stopovers'. The women rode in the wagons, the men often rode on horseback and the 'touleier' (wagon leader) walked alongside.

South African wood types proved to be better than imported wood for wagon construction, with soft yellowwood ideal for the hub and assegai wood best for the spokes. Rough terrain caused the iron of the wheel rims to stretch and every Vryburger learnt to be accurate in what was known as 'shortening the rim'. Wagon-makers took pride in their workmanship and many wagons were painted by hand in what can be termed a type of 'Bauernmalerei' – earthy designs that made the ox-wagons not only functional but beautiful. The owners loved flower designs and hence the term 'blommewaens' (flower wagons). Advertisements by wagon painters appeared as late as 1932.

Design and construction of the wagons changed as the necessity arose. The 'kakebeenwa' ('jawbone' wagon) was developed to allow for a 40° twist between the front and back axels to make the wagons more flexible in difficult terrain. The word 'kakebeen' also referred to the ladder on the side of a wagon which, inspired by the shape of a jawbone, was wider at one end than the other. Another significant change came about with the greater use of steel, which altered the design slightly and enabled wagons to carry up to 10 t, which was useful during the Great Trek.

The downside of this industry, which even saw the export of South African-made ox-wagons, was that it resulted in the denuding of forests. Wagon factories on the streams in Paarl and Wellington and around Table Mountain moved to the Eastern Cape when they ran out of wood. In due course, the Anatole forests were also stripped bare. This all-Afrikaans industry then moved to Scotland where the wagons were built in steam-driven factories. More steel parts were incorporated in the design and the wagons were exported to South Africa in a semi knocked-down state.

The Gold Rush from 1886 onwards created a boom in wagon-making. There were now as many as 100 000 wagons on the road in the country, each with a span of 12 to 16 oxen. Farmers saw an opportunity in transport riding and left their farms. The story of a transport rider is told in the book, *Jock of the Bushveld*. Unhappily the Anglo-Boer War brought about the mass destruction of ox-wagons as both sides burnt wagons whenever they could to prevent mobility and storage. By the end of the war, only nine 'kakebeen' wagons had survived, but as late as the 1960s old wagons were still used on farms, being pulled by tractors. A wheel tax was paid and every town had a wheelwright. Although ox-wagons are today left to lie around and are succumbing to wood rot and are falling apart, the ox-wagon was immortalised when its wheel was incorporated in the ANC logo. The wagons have a proud history and a special place in Afrikaans culture as they were used over a wide area, even connecting South Africa to countries further to the north.

Prof. Holm inspired us with his enthusiasm for and knowledge of wagons. To restore the wagons in his collection, he enlisted the services of an old man he found in an old-age home in Brits. This man instructed him in the delicate art of rim-building and repair, declaring that what was required beyond knowledge was a gut feel. He also found two young boys to whom he was able to impart the knowledge of this dying art. Prof. Holm said that old wagons could sometimes

still be found on farms and told us he had an 'eye' for clumps of blue gums where an old wagon had often been abandoned. Some wagons were in the hands of private collectors and the Willem Prinsloo Museum east of Pretoria also housed some. The cost of a wagon today was around R35 000, the same as a span of oxen. Sadly, he said, the preservation of this heritage was not supported by the government. The Ring, which has a small museum, is a museum itself, with beautifully decorated and painted wagons arranged in a laager. It is possible to overnight in these wagons.

### **Preller House and Eugene Marais' cottage**

From The Ring we travelled the short distance to Preller House at Pelindaba where we picnicked in the verdant garden and were then given a talk by Dr Johann Marais, a scholar in the works of Eugene Marais and Gustav Preller. He, very thoughtfully, gave us a pamphlet on the family names of these two writers, which was most useful. Preller House is built in the 'Transvaal' style – a move away from Cape Dutch and English Georgian and more appropriate for the hot and dry climate of the Highveld. Much use was made of local stone, slate and wood. It has many verandas with overhangs to keep the rooms cool and there are several rondavels surrounding the homestead forming a sort of 'lapa', which further enhanced the 'African' feel. One of these rondavels, built by Preller in 1924 as a weekend cottage, was where Eugene Marais lived in his last months. Preller House was renovated in 1973 by the cultural historian Elizabeth Labuschagne and the architect Hannes Meiring. In the course of this renovation the cellar was filled in, but the attic, with its balcony overlooking the garden, remains. Preller had a telescope up here and Pierneeff painted a map of the world on the wall. This map was used to trace the journeys of Bob Preller, Gustav's pilot son. Rumour has it that the narrowness of the stairs was to prevent Mrs Preller from coming up!

During the Anglo-Boer War, Gustav Preller, a bitterreinder, was a POW in India and on repatriation wanted to immigrate, possibly to South America. His friend, Eugene Marais, dissuaded him, so he remained and went on to become a journalist and editor of *Die Vaderland*. He produced a great deal of work, was a historian, a literary critic and an activist in the promotion of Afrikaans. Lindsay Preller, his daughter-in-law, was a potter and some of her work can be seen in one of the rondavels. We visited the Preller graveyard, which was moved to a pleasant site on a hill when Hartebeestpoort Dam was built. Members of the Preller and Pretorius families are laid to rest here. One of the family 'characters' was Debora, who is remembered for painting her father, Piet Retief's name on a cliff at Kerkenberg in the Drakensberg.

Eugene Marais, a man of genius and many parts, was born in 1871. He was lawyer, journalist, amateur scientist, poet and writer but, sadly, was addicted to morphine and a depressive. He lived in the wild Northern Transvaal for three years in close proximity to the Chacma baboons (*Papio ursinus*) and wrote *The Soul of the Ape*. The manuscript was lost for 40 years, but was rediscovered by Robert Audrey who dedicated his *African Genesis* to him. Marais' great ten-year study of the termite colony led to the book, *The Soul of the White Ant*, which was plagiarised by the Belgian Nobel Prize winner, Maurice Maeterlinck in 1926. This man of rare genius shot himself in the rondavel of Preller's house in March 1936. Marais' son, an attorney in Brits, burnt all his father's papers and unpublished works after the publication of the biography, *Die Groot Verlange*, by Leon Rousseau.

The afternoon spent with our excellent guide and lecturer, Dr Johann Marais, brought us close to these two great men and their lives, families and homes, and reminded us of their great contribution to Afrikaans writing and heritage.

**Report by Gerry Gallow**



## March: Excursion to Lepalong refuge site

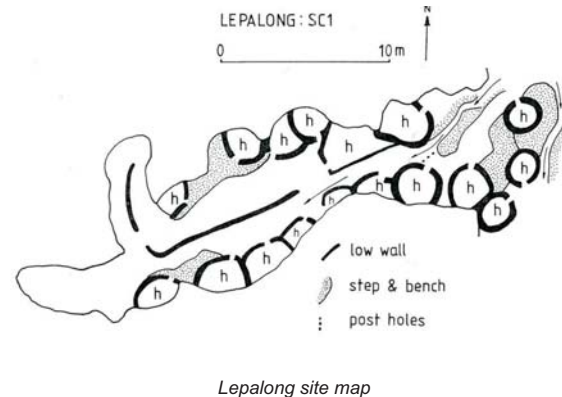
**Excursion with Professor Phillip Bonner, chairman of the Multidisciplinary History Workshop and head of the Department of History, Wits, and Dr Amanda Esterhuysen, senior lecturer, School of Geography, Archaeology and Environmental Studies, Wits, and director of the Archaeological Development Project.**

The Lepalong refuge site is an underground settlement that was occupied periodically by Tswana-speaking people during the *difaqane* (the ‘time of troubles’) between the mid-1820s and late 1830s. It stands at the cross-roads of history. Filled with curiosity, a group of ArchSoc members and friends assembled at Deelkraal Gold mine in the Carltonville area. The mine has closed down and the mine village and surrounding land is being redeveloped for recreation. The new owners provided hospitality in the recreation hall while Prof. Phil Bonner and Dr Amanda Esterhuysen addressed the group before leading the excursion to the site.

Phil Bonner began by explaining the history. According to him, the group that occupied Lepalong is believed to have originated from the large stonewalled megasite of Molokwane (Selonskraal) west of Rustenburg, having fled following social disruption. This megacity was part of a large kingdom that had seven sub-chiefs and included the megasites of Olifantspoort, Kaditshwene and Marothodi. These large aggregations of homesteads were flourishing by the end of the 18<sup>th</sup> century and were the largest urban centres in southern Africa at the time. Reports by early European travellers confirm this.

There are several reasons that explain the development of megacities. Trade by people producing goods surplus to their own needs had reached a peak and chiefs competed aggressively for resources, labour and trade routes. The study of stalactites has revealed evidence of a large drought in the early 1700s followed by a period of intense wet weather that boosted cereal cultivation and cattle herding. This resulted in increasing competition for resources, leading to people grouping together and the creation of considerable political power. Nevertheless, by the 1830s the towns were abandoned as the pressures resulting from the arrival of Mzilikazi, the expanding Cape frontier, and Griqua and Korana raiders equipped with horses and guns became too great. The *Difaqane* caused widespread uncertainty and the population broke up into smaller groups. Remnants of the BaKwena chiefdom fled and eventually took up refuge at Lepalong.

Mandy Esterhuysen then spoke about the archaeology of the site. She said that the remains of about 70 huts on a nearby hilltop were possibly built as a decoy to give the impression that the site was deserted. The main site was underground and consisted of 40 huts built with much time and effort. The huts faced inwards towards a goat or sheep kraal. Some huts were situated on higher ground than others, which also lay closer together, suggesting a social hierarchy. There was no formally defined court area or perimeter wall, indicating a loose, fragmented community. The cavern can only be entered by means of a ladder that can be withdrawn, indicating that Lepalong was probably a defensive position. Because of the structure of the caverns, fire could not be used



to flush out the occupants and there is a permanent flow of fresh air and fresh water in the cavern.

Mandy then led the group through the bush to the hillside and an almost unnoticeable opening in the ground. Equipped with hard hats and torches, kindly supplied by the property owners, participants climbed down a steep metal ladder and edged down a talus of loose stones to a flatter area. When our eyes became used to the dim light, walkways, steps, courtyards and hut floors and small stock enclosures became visible. There was a platform that could have housed grain bins. In the higher lying area occupied by the chief and his court it was not possible to stand upright. Huts clustered in walled areas indicate family households. Shelving for storage was visible and a rubbish midden containing pottery sherds was found at the back of the occupied area. The air in the cavern was fresh and it is estimated that 210 or more people could have lived there.

Lepalong refuge site is significant because of a direct relationship between the development of megasites and the subsequent *Difaqane*, which is thought to be the outcome of a multiple set of pressures. The cannoning effect caused by tribes fleeing from Zululand is considered to be only one of these.

**Report by Pamela Küstner**

## April: The Anglo-Boer War site at Greylingstad

**Excursion with Rob Milne, who has done extensive research on Anglo-Boer War sites and has a passionate interest in archaeology.**

Journeying south on the road to Standerton one is inclined to pass on along the road without a glance at Greylingstad, which makes itself known only by a couple of church spires and the trappings of a farming community. However, we turned left down Carnation Street and came across a couple of brick MOTH cottages and the Scottish Rifles Shellhole, a place for old soldiers to share a pint, play a bit of pool and enjoy reminiscences. Here Rob Milne gave us a most interesting and informative talk. Rob is an amateur historian and archaeologist who has researched the history of the war, the graves, the forts and the battlefields with painstaking dedication, and we look forward to the series of self-guiding books on the Transvaal battlefields he is writing.

According to Rob, the Anglo-Boer War was about gold. The war was ubiquitous and remembrances, both large and small, crop up in the most unusual places. Greylingstad's involvement mainly resulted from its strategic position on the Durban to Pretoria railway line, which played an important part in the movement of supplies and munitions.

Johannesburg fell to the British in May 1900 and the war became more guerrilla-like with the burning of farms and the establishment of concentration camps. A series of blockhouses were set up along the railway line. Colonel Rice devised a simple, easy-to-construct round blockhouse, 3,75 m in diameter, constructed of two layers of corrugated iron with a layer of pebbles between the sheets, which was called the Rice-type of blockhouse. After the war these blockhouses were sold off, but some of the foundations are still found. Ditches were also dug to prevent Boer movement. Near Balfour both ditches and block houses are found. In 2002, Lt Altham Browning Wilmer's grandson brought Rob a photo album of pictures taken by his grandfather and they were displayed for us to see. There is a record of the soldier's life in camp in the diary of Pvt Tucker, who was stationed at Greylingstad in 1900.

The Greylingstad site was most interesting as it is virtually intact. A large 'SR' is outlined on the hillside, while the camp is indicated by stones. Most of us ascended the hill in comfortable 4X4s, but an intrepid few undertook the steep climb over rough terrain by foot. On the southern side of the hill rock outlines indicate the positions of the soldiers' tents, the officers' quarters, the

two hospital sites, a cattle kraal and horse stables. On the town-side of the camp a path leads to the kitchens and the parade ground. The positions were joined by an extensive network of sentry paths outlined in whitewash to enable swifter movement in the dark of the night. We moved on in a northerly direction up a steep hill to the well-preserved artillery position built to accommodate the Royal Garrison Artillery, and then further on to the signaller's camp where the telegraph pole and the heliograph station were situated. We stopped here to enjoy our lunch and the panoramic views, and were able to take a good look at the extensive walling that covered the area.

Rob showed us two pieces from his collection of instruments that were used at the time. One was a heliograph. It has two mirrors that, when tilted, reflect the sun's rays. By using Morse code, the heliograph could transmit 80 words a minute for up to a distance of 100 miles. The heliograph was last used in World War II. Rob has a prized and beautiful heliograph safely stored at home. The more utilitarian model he showed us has been sold as shaving mirrors!

The other piece he showed us was a prismatic compass used for site recording. While the telegraph was also used during the war, it could be cut or tapped. When Sir Redvers Buller visited the site in July 1900 and witnessed what was described as a 'lucky shot' at a Boer Commando on the distant Van Holders Kop, the gun was named 'Bloody Mary'. The original issue of Lee Enfield rifles were shooting 18 inches to the right at 500 yards because of a faulty sighting mechanism. When the fault was discovered, all 25 000 rifles had to be re-sighted. Later the position's armoury was added to by 4.7 inch naval guns. The Boers had a gun that could fire a 94 lb shell 11 000 yards. One of these stands at the Union Buildings and another at the War Museum in Saxonwold.

Rob had many interesting anecdotes to tell us. One was the story of Sergeant Woodward who went out on patrol and didn't return. In time his remains were found and he was given a military funeral and buried in the Heidelberg Cemetery. In the course of time, some people came across another set of remains and eye-witnesses swore that they had seen some people beating the good sergeant to death. He was duly given a second funeral (unbeknownst of the first) with honours and laid to rest near the original grave. It later transpired that these were the bones of a Boer's pet baboon, which he had shot as the Brits advanced on him. Someone asked a priest about what would happen on the Final Judgment Day when the baboon appeared amongst the Scottish soldiers. 'Well', said the priest, 'if the baboon appears in full Scottish regalia with a bagpipe under his arm even the Angel in Charge won't be able to suppress a smile.' Another story was of two Boers who were thought to have stolen the British paymaster's gold from the guard's van of a train. One of them was killed, but the other apparently hid the gold under an ant-bear hole. On his return he could not find the hole and people searched for this treasure for a hundred years. About eight years ago a poor farmer in the district suddenly seemed to have become rich. Rumours spread, but the community have remained tight-lipped.

Rob, with his meticulous research and his gift as a raconteur, was able to make the desolate koppie come alive. We could visualise the soldiers, landed in this foreign field, moving around without the kindly shelter of nature, no overhanging rocks, caves or trees, with their chief enemy being boredom. A large portion of their day was spent moving large rocks through the ankle-twisting terrain to create the long defence walls and encampments that still remain intact today. They lived through the summers of unyielding heat and the icy winds of winter, and watched the mules dragging the water carts up twice a day from the stream below. Pvt Tucker describes that his highlight was to go down to the town to buy a jam tart on his day off. Blessed by a beautiful autumnal day, with wall-to-wall sky and a panoramic view, we felt ourselves deeply blessed in this great land.

**Report by Gerry Gallow**

## **May: Swartkrans hominid site**

**Outing with Morris Sutton, PhD student, University of the Witwatersrand**

From our comfortable shady vantage point overlooking the ancient palaeoriver valley and the extended Cradle of Humankind, Morris Sutton took us on an exciting journey back in time to 2,5 million years ago. He described how early hominins would have ambled through a riverine forest that was alive with the sound of canopy monkeys, and how they would have moved more alertly along the riverbed, on the lookout for lurking crocs and hippo. For them it would have been a relief to retreat away from the river, where it was dryer and where there were fewer trees.

He pointed out that little of what we know today would have become apparent to us had it not been for the discovery of gold and the gold extraction process of the time, which required a good supply of lime, for which miners went and destroyed dolomite caves. But at least they exposed the breccia that contained fossils of the denser parts of living organisms. Morris explained that hominin cognitive and behavioural patterns are reflected by stone tools and worked bone material that is retrieved from these breccia layers.

The items recovered at Swartkrans represent the earliest preserved human technologies in the Oldowan, followed by the slightly more advanced Acheulian and then younger Middle Stone Age (MSA) artefacts. Impact marks on the butchered bones of large mammals, as well as bone tools used for digging, possibly for edible roots and for retrieving termites, reflect cognitive ability and dietary variety, while burnt bone from a one-million-year-old deposit represent some of the world's oldest evidence for the controlled use of fire.

In geological terms, 'The history of the valley and the cave formation processes go back tens of millions of years. Geologically, the 800-million-year-old dolomites formed from sea-floor sediments when large parts of southern Africa were covered by shallow seas. This dolomite contains high levels of the chemical compound calcium carbonate. Around 30–50 million years ago, after the shallow seas had receded, groundwater percolating through cracks or joints in the dolomite rock caused the dissolution of calcium carbonate, widening the cracks and eventually causing breakdown of the rock. This began the process that would ultimately result in the formation of caverns tens of metres below the surface. Much later, approximately 5 million years ago, these closed caverns finally opened to the surface via narrow shafts. Over thousands of years the caverns became filled with eroded surface soils, rock and sometimes bones and artefacts. As rainwater seeped through the cave roof the dissolution process continued and calcium carbonate residue dripped onto the cave floor. After evaporation, the hardened calcite encased the cave floor debris into a cemented deposit called breccia. This deposition and erosion was repeated numerous times before the fossils came to light, mainly through the activities of lime miners.' (Morris Sutton, *Uncovering early human behaviour, Quest 5(2) 2009: 10.*)

Dr Bob Brain divided the episodes of deposition and erosion at Swartkrans into six infills. The oldest infill, Member 1, is composed of the Lower Bank decalcified sediment and the Hanging Remnant calcified breccias. Member 1 is followed successively by Members 2 and 3, which entered the cave system from about two million years ago until one million years ago and have yielded the amazing Swartkrans hominin and faunal assemblages. Member 4 is a younger infill containing MSA stone artefacts that are probably older than 80 000 years.

Morris also provided a framework of the research history and elaborated on some of the many finds that have increased our understanding of hominin anatomy, behaviour and interaction with the environment. He looked back at the time when Robert Broom initiated research at the site in



the 1930s, and elaborated on the extensive work, which extended into the 1990s, by Bob Brain and his team. The work was continued by the Swartkrans Palaeoanthropological Research Project (SPRP) that started in 2005, of which Morris is a member.

One of the focus areas of the SPRP multidisciplinary project, he explained, was the identification of markers of hominin behaviour in the oldest Member 1 deposits, which have yielded fossils of two different species, *Homo egaster (erectus)* and *Australopithecus robustus*, who shared the landscape for a million years. The SPRP team intends to extend the sample size of stone tools and to determine if the hominin species were making Oldowan or Early Acheulian tools. So far no evidence has been found of Early Acheulean production methods. Rather, the tools 'provide additional evidence that Oldowan toolmakers butchered large mammals'. Recovered along with the artefacts are cut and percussion-marked bones. It would appear therefore, Morris said, that at 1,8 to 1,7 million years ago *Homo egaster* at Swartkrans was still using the 'old-fashioned' Oldowan tools, and, importantly, using them for butchering large mammals (Op. cit., 12).

A further area of focus of the SPRP was to expand our understanding of hominin behaviour between two million and one million years ago, as well as during the MSA. He explained that only limited research had been conducted in this regard at the Cradle. At Swartkrans, surface excavations had produced over 4 000 MSA artefacts and a near-complete size range of flakes and blades. The absence of pointed flakes suggested that activities at the site were not focused on hunting, but possibly reflected post-hunting activities such as butchering.

He concluded the introductory talk by indicating that the renewed excavations had resulted in answers being provided to several questions regarding the artefacts and site-formation processes. The new material had presented novel questions that could be investigated using new methods to interpret the complex processes of cave formation, as well as the complex challenges of interpreting the fossil contents, and of understanding indicators of behavioural processes and cognitive development over the millions of years of hominin development at Swartkrans and the wider Cradle of Humankind.

**Report by Anna Steyn**

## **June: Iron Age sites in Limpopo: Thulemela, Thomo and Masorini**

***Long-weekend excursion with Sidney Miller who worked at Thulemela for four years and brought this major settlement site to life.***

### **Friday 12 June – Mashamba potters**

Those of us who were fortunate enough to be able to leave early on Friday morning met at the Tourist Information Bureau at Makhado. From there we progressed in convoy to the Mashamba potters, passing Elim Hospital, one of the most advanced hospitals in the treatment of tropical diseases and ophthalmology. The hospital was founded in 1899 by Swiss missionaries and many Swiss doctors still come to the hospital to be trained in this field of tropical medicine. We



*Some Mashamba pots at a homestead [photo: Noni Vardy]*

stopped at the late John Baloi's gallery en route to the potters. His sculptures are found in collections all over the world.

In 1979 the SA Defence Force mapped the roads in the area, enabling Sidney Miller to explore the area. He found the Mashamba potters and it was largely through Sidney's efforts that the potters' fame spread. All pots are shaped by hand, using neither the wheel nor the coil method. Sidney received a huge welcome from the village women, who were delighted to see him. The pots and figurines were irresistible merchandise, and many, if not all of us, ended up purchasing pots.

**Report by Noni Vardy**

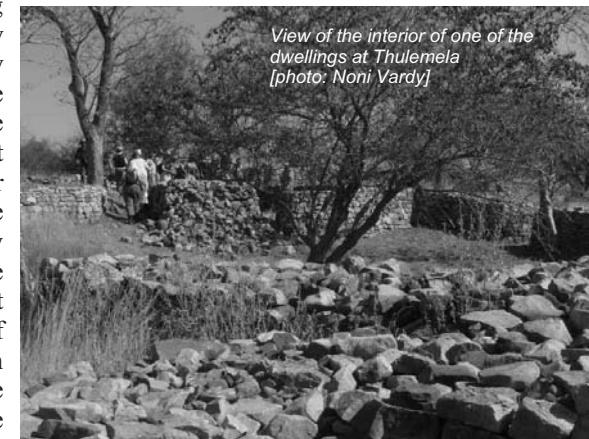
### **Saturday 13 June – Thulemela**

Thulemela is a Venda word meaning 'place of birth'. It lies in the Kruger National Park, close to the Pafuri car park, some 17 km from the confluence of the Luvuvhe and Limpopo Rivers. Not being allowed to walk on ones own in the park, we were accompanied on the short distance to Thulemela by several armed guides, who also remained with us until we returned to our cars. Thulemela was occupied between 1250 and 1700, and was at its most populated between the late 1500s and early 1600s when it is thought that some 1 000 people lived there. Most of the walling was built during this period.

Thulemela is an example of the king removing himself from his subjects by living on top of a hill, in the same way that occurred at Mapungubwe. The whole site is about 9 ha in size and the palace covers an area of about 0,5 ha. It was this area that Sidney excavated for three years. Much of the beautiful stone walling of the king's area was rebuilt by Sidney over an 18-month period. He and his assistants had to learn the craft of dry stone walling, which consists of dressed stone on the outside and filler in between. There is a possibility that, like Great Zimbabwe and Khami, the inside-facing walls may have been plastered. The monoliths at the base of the external wall represent the ancestors.

The Thulemela people were farmers. Grinding stones and hoes were found, as were remains of maize and wild cotton. A spindle whorl and other items unearthed indicate that cloth was woven. The dig brought to light bones of goats, sheep, dogs and chickens, as well as fish bones. A specialised spear thought to have been used for hunting hippo was also discovered. The first body to be found in 1996 was buried in a foetal position. It was a woman in her 40s, 1,73 m tall. She had had a good diet during her lifetime as her teeth were in good condition, but lines on her bones are indicative of a high fever, possibly malaria. She was right-handed, it was clear that she had done little hard work but had walked a lot. She was buried with her hand under her cheek and wore a twisted-wire gold bracelet with two gold beads. She has been nicknamed Queen Loshia because of the position in which she was buried.

A skeleton of a male about 70 per cent complete was found next. The body had fairly obviously been reburied in the shallow gave. He is thought to have been in his late 50s and had



*View of the interior of one of the dwellings at Thulemela [photo: Noni Vardy]*



died some 200 hundred years before 'Queen Losha'. He had suffered serious damage to his right leg and probably walked with a limp, and had three major osteoporotic growths, possibly resulting in headaches etc. In addition, cut marks were found on his vertebrae indicating that he could well have been murdered. The man, thought to have been a king, was buried with many ornaments, including 72 double or single-strand gold beads about 2 mm diameter, ostrich egg-shell beads and copper wire. No glass beads or ceramics were found in the graves. The chief or king was nicknamed King Ingwe, meaning leopard, as a leopard was seen close to the excavators' vehicle on the day the grave was discovered.

A double gong was found close to 'King Ingwe', which is regarded as being highly significant. Gongs originate from Ghana and Zaire and a similar gong was found at Great Zimbabwe. This establishes trade links with West Africa as the technique employed to make the gongs was not used in southern Africa. Other finds included a ceremonial spear head originally covered in gold foil, delicately worked copper and gold-foil ornaments, a copper ingot with a mass of 3 kg, ceramics typical of the Khami period and a potsherd with traces of molten gold. The gold was smelted close to the women's area and has been fingerprinted as being alluvial gold mined from several different sources. A total of 291 gold beads were found at Thulemela, which are now on display at the Cultural Museum in Pretoria.

The Gold Fields Foundation had sponsored the project and had stipulated that the local community be involved from the start. The steering committee included four Vendas, four Tsong-Sjangaan representatives, four scientists and four members of the National Parks Board. When the first body was found, a special meeting was arranged and it was decided to finish the medical reports and soon as possible and return the bodies to their original graves. There was some disagreement about whether the 'king' and 'queen' were Venda or Tsonga/Shangaan. It was eventually decided that the burials were Venda as the bodies faced a certain direction, but then a further complication arose about whether the burials should be in the Christian tradition or should be a traditional burial. In the end, both Venda and Shangaans were involved and both Christian and traditional burials were given.

It was a wonderful visit and Thulemela exuded the same spiritual quality that is found at Mapungubwe.

**Report by Noni Vardy**

### **Saturday 13 June – Crook's Corner**

After the visit to Thulemela we drove the short distance to Crook's Corner, where the Employment Bureau of Africa, known as TEBA, has its base for screening potential mine-workers. Nearby are an SAPS police station and a border control office. Crook's Corner lies at the confluence of the Limpopo and Luvuvu rivers and the name refers more specifically to an island in the river that is a piece of no-man's land between South Africa, Zimbabwe and Mozambique and has a colourful history as a refuge for felons, who in theory could not be apprehended on 'foreign' soil.

When the gold mines started up on the Witwatersrand in 1886 there was a chronic shortage of labour, so a recruiting organisation was established by the Chamber of Mines in areas such as the Transkei and neighbouring countries under the name of the Witwatersrand Native Labour Association (WENELA). Each mining house had a stake in WENELA, which ran a ruthless recruiting system that accounts for its demise in the 1970s for political as well as humanitarian reasons. Its labour recruiting responsibilities were assumed by TEBA, which still operates. Initially, local chieftains in Zimbabwe and Mozambique were bribed to produce volunteers, although in time there was a genuine flow of labour volunteers from as far away as Malawi and

even further north. TEBA at one time had over 170 recruitment and pension payout stations in Africa. Recruits would walk from their home to a WENELA base, receive a medical check and then again proceed on foot to the nearest rail point often many kilometres away. In later years a bus service was provided by the mines to and from the base, and an air service was used for the more distant points.

The infrastructure on a base comprised blocks of dormitory 'cells' for the recruits and on a cool hill site a managers house, the administration building, a doctor's house and a clinic. The cell blocks at Crook's Corner have been demolished, but the houses remain with well-tended gardens and are used by mine managers for recreation.

Beside the tar road on the approach to the Punda Maria Camp, a bronze plaque beneath a baobab tree on a hill commemorates the site of the first 'outspan' site for the mine recruits after they had left the WENELA base for the mines. The site was well chosen as the baobab is well silhouetted against the sky. In the early days the miners were paid £1 a day in 'mine paper', which was exchangeable in the mine store. After the typical one-year contract the worker would return on the same route, but carrying many new possessions. Interestingly, the base is sited on the ancient Limpopo riverbed as evidenced by a proliferation of pebbles. Evidence of stone tool making is also found at this site.

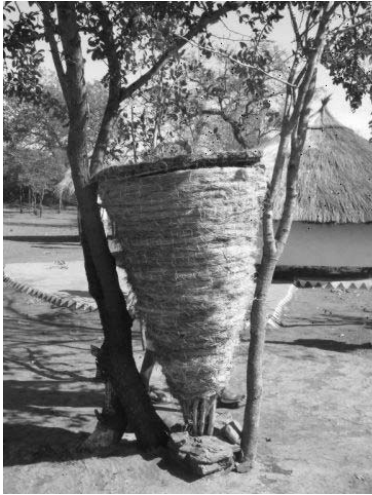
**Report by John McManus**

### **Sunday 14 June – Thomo Heritage Park**

After overnighting at Punda Maria, we exited the Kruger National Park and drove to Thomo Cultural Village, which is located on a small hill overlooking the Nsami Dam, a short drive from the town of Giyani. It is the site of some 30 ancient iron smelting furnaces, most of them buried by soil and vegetation. A project is in progress to turn the site into a cultural heritage destination. Led by Richard Mabunda of the Tingwazi Arts Amalgamation, ambitious plans have been made for a visitors' centre that would include a shop, restaurant, display/museum area and a conference centre. A rural museum village, which is to offer rustic accommodation, has been built under the guidance of Sidney Miller, but the visitors' centre stands unfinished and derelict because the funding has been exhausted.

Richard led us to the amphitheatre to be used for music, dance and performance storytelling. We sat on rocks of banded ironstone with a view of the hills of Baleni (a traditional salt producing centre) visible across the plain. Thomo is situated in an age-old iron-working area at the intersection of three ancient trade routes. Of the furnaces that have been found, one still had a blow pipe, and other artefacts that have come to light include assegais and spears. The Tsonga people specialised in different commodities and bartered their goods. Iron traders, agriculturalists, hunters, live-stock owners and tanners were all interacting and trading. Venda people came with clay pots and Baleni people brought their salt.

Richard told us that Thomo means 'I am blessed with fertile land' and that the area has always been known to be good for traditional agriculture. Old people would test the fertility of the soil by squeezing a marula tree. We walked to the village, which was protected by a wooden fence to keep out wild animals, crossing an expanse of bare earth used as a fire buffer. Then we entered the reception circle where old men would sit and do woodwork and leatherwork. This was the men's court and visitor reception area. Moving on to a peaceful collection of huts grouped round a central cattle kraal, we learned that the huts all faced east to welcome each new day and everything good. The huts had outside verandas, low-reaching thatch and low doorways to put an intruder at a disadvantage. Water-flow was also considered in their positioning. There were grain bins, a structure for storing marula nuts and food baskets for mopani worms. The food storage



A marula nut storage basket [photo: Pamela Küstner]

area, or rustic ‘fridge’, had thick straw walls that were kept wet to keep the contents cool. We thought that the village needed livestock and human activity to bring it to life. There were no goats or chickens, no voices calling. We saw an example of salt-making where silt dripped through sand into a clay bowl and evaporated to form crystals. This was the work of old women. We sat around a rather large unused show furnace and heard that iron production was the preserve of old men and was only carried out in winter because of the extreme heat. Banded ironstone smelts into iron slag at 1 100 °C and the process takes 24 hours. Traditionally, human parts were put in the central hole. The last official smelt took place in 1885 and we learned that Venda smelters, amazingly, went to the Crystal Palace exhibition.

Richard was an excellent story teller and we came to realise how Tsonga life is richly woven with superstition, ancient beliefs and protocol. He told of treasures buried under trees and how people would go to diviners for help in finding them. The treasures were protected by the spirit of the ancestors in the form of a snake. Wrong actions could lead to a chain of bad luck. Once, a very old hoe was found and picked up. After that, a vehicle got stuck in the sand until late at night, a huge thunderstorm blew up and three tractors were broken. Once the hoe had been replaced and the ancestors appeased with coins, the tractors worked again and the vehicle could be rescued.

We also heard of a beautiful girl who was forced to marry someone she didn’t love. She killed herself and became a water spirit, gradually turning into a water python. Her home, a sacred site, was in the path of a new dam. The construction workers cooperated by digging a special place for the water spirit. Sometimes they heard drums beating, saw clothes hanging in a tree. Two women collecting reeds were pulled into the water and saw grass mats with divination bones. Beliefs in the supernatural are strong.

There are so many stories and customs to be told and recorded, and Richard Mabunda is the person to do it. Thomo can provide a resource for schoolchildren and city dwellers wanting to process their own history, but it is off the beaten track and on a road to nowhere. If a new entrance to the Kruger Park is built, more visitors might pass by, but publicity and more funds would be needed. We were all very heart-sore that the project was incomplete and hoped that Richard might eventually fulfil his dreams.

**Report by Pamela Küstner**

### **Monday 15 June – Masorini**

Masorini, which is known for its Iron Age activities, lies just inside the Phalaborwa Gate of the Kruger National Park. We had spent the night at the Die Eiland Hot Springs resort on the Letaba River and re-entered the Park to visit the site, which consists of a number of rondavels and an iron smelter, which was in a sad state of disrepair. The veracity of the guide, Cephas, also left a lot to be desired (for example, he tried to tell us that a white quartz stone he picked up comes from the sea). The word Phalaborwa means ‘Better than the south’. Even in earlier times it was renowned for its copper and iron deposits. Cephas reckoned that not more than 100 people lived here at one time and that they had come from Botswana sometime in the late 19<sup>th</sup> century, which would make it in the Late Iron Age. And, he said, it was associated with the Mochela, a sub-group

of Sotho speaking people. They obtained their raw material from Phala-borwa for smelting iron. The guide told us that they made beer from mealies while they lived there. We were shown examples of sleeping huts, as well as a *kgoro* where old men would sit around and discuss their problems. Everything was very run down with the exception of an excellent little museum on the site. We had our lunch here and then drove on to Mopani where we spent the night.

**Report by Anita Arnott**

### **Tuesday 16 June – rock engravings**

An early morning walk to view unique rock engravings, escorted by armed guards, was offered as an optional extra to the excursion. As we looked out from the SANParks game drive vehicle across the endless extent of the flat mopani woodland around Mopani camp it seemed as though it would be impossible to identify any particular site, owing to the endless uniformity of the landscape. After driving for some distance, a low, flat hill came into view, gaining surprising visual prominence, quite out of context considering its slight elevation. One could imagine how, on a moonlit night, this hill would almost seem to float above its vastly extending surrounds.

As we approached the site, Sidney explained that all the hillocks in this area would have been inhabited in Iron Age times, and that part of this specific hill had also been occupied during Mapungubwe times. Ceramics from the site dating to the late 1700s and 1800s related to Venda, Pedi and Tsonga/Shangana people. He noted that this site was about 100 km from Masorini and that most of the sites formed part of an extended trade network related to iron working and distribution.

Sidney advised that the site had been discovered by Johan Oelofse and thanked SANParks for making special arrangements for us to visit the site, and especially Hennie Combrink and Amos Gazide who accompanied us. Sidney then provided a framework of South African rock art in the broader context before guiding our eyes over the rock face. We learnt to distinguish subtle engraved lines in slight shadows, including the image of a feline in among the intricate markings of a style that seemed unrelated to any familiar rock engravings. He then invited Anna Steyn to elaborate on her experience of the site. She pointed out that the placing of the site, huddled in between the curves of the low slung hills, facing the upcoming sun, reflected a symbolically significant orientation for this extensively worked and highly celebrated rock surface locality.

One could ponder, be it ‘creatively’, upon its contextual significance within the wider as well as the immediate surrounds. Most of the engravings seemed to belong to an extensive and intricately articulated design, almost as though it was done by a woodcarver or draughtsman who revelled in the rhythm of articulated wave-like movements, and then extended his design by in-filled parallel lines and meanders. The inner centre of parallel curves in a number of instances culminated in indented cupules. One could visualise how, after the rain, the cupules would hold water and would reflect the sky, and how little ‘rivers’ would meander down from this point. Possibly this small ‘design-landscape’ reflected, on a spiritual level, life’s extended experiential landscape. Should that have been so, then, what happened here was a replication of the wider field of experience.

Were this to have been an aggregation site, as had been documented among San communities elsewhere, then people would at certain times have gathered here from the wider surrounds to meet, to dance and to establish and strengthen relationships. One could visualise how the monotonous sound of the pecking out of the engravings would become almost trance-inducing, and how the wider site experience, including the highly scented herbs as well as the opulence of sweet red berries would enhance the experience.

We were certainly very privileged to have had another magical experience!

Report by Anna Steyn

**At the end of the tour**, Pamela Küstner, chairman of the Trans-Vaal Branch, commented that 'Black tourism has barely begun and in future it will be important for people to learn about their roots. It is very important to preserve the rural culture before it is lost so that it is recorded for the future. The stories we heard from Richard at Thomo showed the complicated belief systems of the Tsonga and made me realise how difficult it must be for black people to adapt to city life.'

## Trans-Vaal Branch chairman's report for 2008–2009

*Branch chairman, Pamela Küstner, presented the following report to the 64<sup>th</sup> Annual General Meeting of the Trans-Vaal Branch of the South African Archaeological Society on Thursday, 14 May 2008. As the national AGM of the Society was hosted by the Branch on the same evening, Professor Judith Sealy, representing the Council of the Society, was present at the AGMs.*

The period from June 2008 to May 2009 has been filled with activity and it has been an honour for me to serve as chairman. Our core business is bringing archaeology and its many related fields to the public, and in this I believe we have been successful. With about 450 members we are by far the largest branch of the SA Archaeological Society. Nevertheless, we have experienced a drop in numbers because of people relocating on retirement or declining health, so it remains important to market our activities and attract new members. With electronic publicity more people are becoming aware of the society and we are attracting people to our lectures and outings. New members are the life-blood of any society and in future guests will be asked to join on their third visit.

The quality of the branch is ensured by the strong support of our seven patrons and I thank them for their continued involvement. They are Dr Bob Brain and Professors Tom Huffman, David Lewis-Williams, Bruce Rubidge, Francis Thackeray, Lyn Wadley and Jan Boeyens. Thank you all for being available to us. Links with our national body are maintained through our representative on Council, Dr Janette Deacon, who is in regular contact with me. I thank her for looking after our interests.

Our full programme is only made possible by the support of all the specialists who generously give of their time to share their knowledge with us. I particularly acknowledge the participation of the academic communities of the universities of Witwatersrand, Pretoria and South Africa.

The evening lectures covered two recently published books, namely *Tracks in a Mountain Range* by John Wright and *A search for Origins* by Amanda Esterhuysen, a visit from the Canadian archaeologist Dr Gary Warrick speaking about the Iroquoians, an unusual story about Bishop Colenso from David Lewis-Williams and, for the arm-chair travellers, reports back on trips to Mali, Morocco and Easter Island by Reinoud Boers and Lilith Wynne. Earlier this year we honoured the anniversary of Darwin's birth with two lectures. Himla Soodyall spoke about DNA and enabled members to have their DNA tested, donating half the proceeds to the branch, while André Croucamp explored the controversial debate between evolution and intelligent design.

During the past year we have had Sunday outings to the Tswaing meteorite crater, the Bosworth rock engraving site, a historical geography bus tour of Johannesburg, which revived memories of the central CBD for many, Wonderboom, The Ring Ox-wagon Lodge for the history

and restoration of ox-wagons followed by a picnic with the ghosts of Gustav Preller and Eugène Marais, the Lepalong refuge site and the Anglo-Boer War site in Greylingstad.

More adventurous travel took members of the society to the enigmatic Easter Island under the leadership of Lilith Wynne and to mythical Mali with Reinoud Boers. Even those who cannot go on these ambitious explorations benefit in having their horizons extended and imaginations stimulated. Within South Africa, an excursion to Venda gave members the opportunity to visit Iron Age and rock art sites, meet local sculptors and potters, and purchase hand-crafted treasures.

Every October, the Trans-Vaal branch runs its Annual School at Delta Park. This year the theme was Medical Archaeology and about 150 people were fascinated to hear about the plague, malaria, medicinal plants, traditional healers, forensic pathology, medicine in Egypt, and San healing through trance. The day of lectures was followed by a sociable brunch held under flowering bougainvillea and jacaranda at the hospitable home of Reinoud and Marion Boers.

Such a full programme is only made possible by the teamwork of a dedicated committee. This seems the appropriate time to thank those who have worked behind the scenes to offer our members a year of education, friendship and adventure. **Reinoud Boers** has years of experience and contributes enormously by running an excellent book shop. In addition, he edits *The Digging Stick* and *Artefacts*, where branch activities are written up. **John McManus**, our treasurer, does a sterling job and we are very fortunate to have such an experienced man in this role. He makes sure we handle our money wisely. **Anna Steyn** runs the publicity portfolio and sees to it that we get exposure in events listings. **Anita Arnott** arrives early to put up banners and take the money and is involved on every front. **Noni Vardy** helps to arrange speakers and plan outings. **Gerry Gallow** is indispensable where food and drink are concerned. With her team she runs the T-table at meetings and the catering at the Annual School. **Felicity Egglestone** brings her business experience to minute-taking and letter writing. **Jo Earle** has continued as membership secretary until we could find a replacement and we thank her most sincerely for her dedication to duty. **David Pearce** has been our Wits representative and has kept us informed of events on the campus. **Judy Gierut** has not been well this past year but we hope she will be able to participate again. **Kelvin Esterhuizen** has offered ideas, but has stood down owing to time constraints.

An AGM is often a time for changes in the committee and this year we welcome new members. **David Pearce** stands down to concentrate on his academic career. We are looking for a new Wits representative. **Louise McKechnie** and **Peter Mimmack** have joined the committee to run the vital technical arena. **Marianne Miller**, an experienced tour guide, will be taking over the membership portfolio.

With these talented newcomers I predict that the committee will be invigorated and strengthened. Thank you all for doing a great job and for the friendship which we share.

The funding of annual grants for archaeological research and education continues to be a worthwhile initiative of this branch. The income derived from outings, the Annual School and book sales fund our grants. During the year under review, Prof. Karim Sadr was awarded a grant of R10 000 towards running a knowledge transfer workshop on ceramic technology. Yesterday the van Riet Lowe prizes were presented to Lynton Boshoff and Joanne Buitendach at a Science Faculty prize-giving held at Wits University. Awards to the top UNISA and UP students are still to be finalised.

As we conclude a busy and satisfying year with ArchSoc, I thank you all for your participation: the patrons, the lecturers, the excursion leaders, the committee and, of course, you the members, all of you who make up the ArchSoc family. Your participation and enjoyment make everything worthwhile.