

Alberta Foothills Desk and Derrick Club

2013 South Africa Energy Excursion



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SANEDI: An Overview of South Africa's Energy Industry

Daphne Bennett



Thirty-six South African excursion travelers were in attendance for Mr. Kadri Nassiep, Chief Executive Officer of SANEDI's presentation in Sandton held at the DaVinci hotel. Lorna Myers presented a certificate of appreciation to Kadri on his overview and resilience to appear through one of the worst storms incorporating wind, lightening, thunder and his air delay. His motto: the show must go on!

The primary focus of SANEDI (South African National Energy Development Institute) is to address the country's rising energy demands, through the acceleration of green energy projects in South Africa. SANEDI is setting up specialized research centers with the objective of optimizing the research infrastructure, accelerating the research path and growing the pool of energy scientists.

SANEDI funds and supports research as well as conducts its own research where gaps exist. It was established July 19, 2012, through the merger of SANERI (South African National Energy Research Institute) and NEEA, (National Energy Efficiency Agency).

The research institute, Nassiep said, had as an objective a wish to be recognized as the foremost institution for renewable energy research coordination and collaboration.

The planned research centers are RECORD (Renewable Energy Centre of Research and Development), to serve as a catalyst for sustainable energy innovation, transformation and technology diffusion in support of South Africa's sustainable development, and SACCCS (South African Center for Carbon Capture and Storage). Each research centre will have its own Executive Committee and Technical Advisory Group. It will be managed by SANEDI but hosted at different universities to minimize duplication and reduce overheads.

SANEDI directs and supports research in the public interest and the company solicits work from reputable service providers, either academic institutions or the private sector. A significant focus is placed on cooperation and the development of a collaborative environment.

The main objective of a research centre is to organize research efforts among academic institutions, specifically driving research towards commercialization, reducing potential duplication and ensuring synergies. The focus areas of these research and development centers are education, promotion of technologies, product research and development and consultancy.

The capture of carbon dioxide at the point of release and the deep underground storage thereof will help to decrease carbon dioxide emissions. CCS technology is a way of bridging the gap from today until the existing energy infrastructure is replaced with non-fossil fuel based power generation. More than ninety percent of South Africa's power is generated from coal. Other industries like the synfuel industry also use large quantities of coal. This is resulting in the release of over 400 million tonnes of carbon dioxide annually. The South African government has committed the country to reduce carbon dioxide emissions and has established the SACCCS to investigate the feasibility of CCS in South Africa.

The following are SANEDI's vision, mission statement, and critical path moving forward:

Vision:

To serve as a catalyst for sustainable energy innovation, transformation and technology diffusion in support of South Africa's sustainable development that benefits our nation.

Mission statement:

Advance innovation of clean energy solutions and rational energy use that effectively supports South Africa's national energy objectives and the transition towards a sustainable, low carbon energy future.

Critical Path for 2013 / 2014:

- appoint Project International Advisory Committee
- develop basin exploration execution plan including contracting strategy
- appoint Engineering / Procurement / Construction contractor
- commence public engagement in Zululand and Algoa basins
- apply for basin exploration and characterization in Zululand and Algoa basins
- design Zululand and Algoa basin exploration plan
- commence seismic exploration of Zululand and Algoa basins

SANEDI is now clearly establishing itself as a research, evaluation and monitoring body, shedding its developmental nature at the request of the department of energy (DOE). Its main mission currently is to assist in the transition of South Africa towards a sustainable and low carbon energy future. SANEDI says it plans to become the major energy research body in South Africa.

In answer to a question on grids, Kadri said "smart grid" involved disciplines where the national transmission grid became more reliable; more secure; more economic and more efficient by applying more modern and advanced technologies to energy distribution, and would involve the technology of such groups as Siemens.

In addition, Kadri commented on shifting to lower carbon generations options, significant up-scaling of energy efficiency applications, promoting transport related interventions, carbon capture and storage in the synthetic fuels industry, mitigating non-energy emissions in agriculture and land use, and transitioning society and the economy to more sustainable consumption and production patterns. Kadri's closing statement noted unemployment in South Africa is high and job creation is the top priority of government. The availability of energy and electricity is a major component of economic stability and growth. It will have the ability to absorb employment and preserve existing jobs.



Cradle of Humankind World Heritage Site

Lucy Mulgrew



On October 7 our group headed out to the Cradle of Humankind World Heritage Site. We arrived at the same time as a bus load of school children. We were treated by them singing us their national song. We passed out Canada pins and sang "O Canada" to them. What a way to start our day!



This site is one of eight South African World Heritage Sites. It is the world's richest hominin site, home to around 40 per cent of the world's human ancestor fossils. The 53,000-hectare area is also home to a diversity of birds, animals and plants, some of which are rare or endangered.



The primary objective of the site is to balance the conservation of the remarkable scientific evidence of human origins, and the near-pristine environment from which it arose, with the need for development of communities, scientific research, education, tourism and infrastructure.



All animals are divided into groups according to the characteristics they share. Humans belong to the order "primates", which means "first rank". This order includes apes, monkeys and prosimians.

We belong to the same group because we:

- have well-developed eyes that face forward, giving us binocular vision
- have flexible fingers that can grasp things, and opposable thumbs
- have fingers with nails, not claws
- normally give birth to one baby at a time, which requires high effort from the mother
- live together in organized societies

But humans are also different from apes because:

- we have flat faces, small teeth and large brains, while apes have projecting faces, large teeth and relatively small brains
- we have a bipedal posture, while apes walk on all fours, using the knuckles of their hands to walk on



How did human beings evolve? There will always be great interest in this story. This is the focus of paleoanthropology, which attempts to elucidate our own narrative. Our close genetic relationship to other modern apes has seen great interest in the work of primatologists.

What did *Paranthropus* look like?

Paranthropus was a relatively small, but powerfully built hominid that averaged 1.1 to 1.4 m (3' 7" to 4' 7") in height, weighed between 32 and 50 kg (70 to 110 lb), and had a brain size less than half that of the average modern human. The males were notably larger and heavier than the females.

Paranthropus' face and jaw were built for eating tough vegetation. Its large, thickly enamelled molars would have been able to grind the toughest berries and tubers.



Cradle of Humankind: Sterkfontein Caves

Lucy Mulgrew



The Sterkfontein Caves are one of the richest and most productive palaeo-anthropological sites in the world, and form part of the Cradle of Humankind World Heritage Site.

The scientific exhibition centre show-cases a reconstruction of a mined versus a pristine cave, cave formations and geologies, early life forms, mammals and homo-fossils, specific finds such as Mrs. Ples, the Taung child and Little Foot as well as details of fossilization, paleobotany and landscapes.

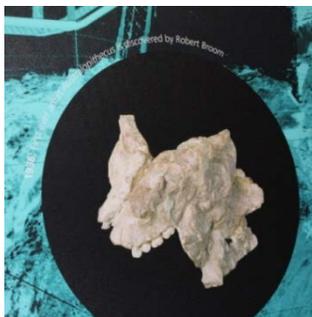


Among the most remarkable findings to have been made by numerous world famous scientists within the Cradle of Humankind is the famous Mrs. Ples, the first complete Australopithecus skull to be discovered, and more recently, "Little Foot", a 4.17 million year old, almost complete, ape-man skeleton was discovered in the same caves.



The first fossils at Sterkfontein came to light as early as 1936 and were the first adult Australopithecines, or more specifically, Australopithecus. Australopithecus africanus existed only in South Africa between 3.2 and 2.6 million years ago and was a very early hominid (i.e. a species that belongs in our family, the Hominidae).

The Sterkfontein Caves are owned by the University of the Witwatersrand, whose scientists have been responsible for the main excavations of the World Heritage Site. Sterkfontein has been excavated for more than 62 years in total but it is, amazingly, still yielding up its secrets.



It was the adult ape-men fossils from Sterkfontein that helped prove to the world that Africa was the cradle of humankind. Sterkfontein has fossil deposits dating from almost 3.5 million years ago all the way up to 1.5 million years ago, providing a wealth of information about the different hominid species that existed in this 2 million year interval.

The recent discovery of "Little Foot" bears ample testament to the wealth of information which is still to be gained from the cave deposits at Sterkfontein.

Fossils and artefacts are extracted from the cave site by drilling and breaking the breccias. Breccia is a rock composed of broken fragments of minerals or rock cemented together by a fine-grained matrix, which can be either similar to or different from the composition of the fragments. The breccias is then chipped away from the fossils using stone tools with small chisels and aircsribes (a power tool used to separate fossils from rock).

An hour's drive from Johannesburg and Pretoria, facilities include a top restaurant, conferencing facilities, access into the caves, walkways and a boardwalk past the excavation site where world-acclaimed fossils have been discovered.

Areas of decalcified breccias (i.e. where the lime has been dissolved away by groundwater and the breccias has broken up) are excavated with picks and shovels and all the earth is sieved, so even small bones of rodents, insectivores, bats, lizards, frogs and birds can be recovered. Fragmented and crushed fossils can be reconstructed after cleaning.



This tour was very interesting and we learned a little bit about excavations.



Cradle of Humankind: Maropeng Exhibition

Lucy Mulgrew



This third part of our day plummeted our group into the depths of the Maropeng Visitor Centre and started our journey with a boat ride through time. We entered the museum and interaction zone where we slowly made our way back towards present day. The displays highlight humanity's past and origins as well as the world's changing environment.

In addition to the fixed exhibitions at the museum and visitor centre, Maropeng also offers a number of other activities such as star-gazing and astronomy talks and exhibitions by a resident astronomer, as well as archeological tours and excursions.



Where do we come from? And where are we going? These questions are attempted to be answered at the world-class Maropeng Museum situated within the Cradle of Humankind Heritage Site in the Magaliesburg, north west of Johannesburg.

What a day, as these tours are not just for archeology buffs and school groups. As a tourist destination it informed at the least, and very possibly changed the way we think of ourselves and the world around us.

Though the exhibitions are based on the ground-breaking hominid fossil discoveries at the nearby Sterkfontein Caves and at the other archeological sites on the 47,000 hectare Cradle of Humankind in the Magaliesburg, the Maropeng Museum offers far more to satisfy not only those interested in the archeological finds.

A unique introductory feature takes you on a boat ride through the 'Elements' of Fire, Water (and Ice), Earth and Air. Further exhibitions display and detail various themes from and related to the birth of the planet and the development of DNA and life on Earth; to evolution, extinction, the evolution of mankind and fossils, the Gaia Principle (the theory of a living Earth), right through to modern society, how we function as a species, and on to our ecological footprint and future.



Cullinan Diamond Mine (above ground)

Tracy Fillmore



Our tour began with an introduction to our tour guide, Fran, who escorted us to the souvenir shop for an informational video on how diamonds are formed far below the earth's surface and then carried up to the surface by the lava flows, how the mining is currently done below ground, and a brief summary on the current owner of the mine – Petra Diamond Limited (PDL) – \$160.00 and climbing steadily. After the video presentation we were advised of safety rules and asked to pick up a hardhat and head out into the yard.

We walked to a museum-like building that housed more information on the history of the mine and diamonds, diamonds and more diamonds, of all shapes, sizes and colors.



The famous Cullinan Diamond was found just 12 meters below the surface on January 26, 1905, by F. C. S. Wells, the mine's Surface Manager. The original mass of the diamond was 3,106 metric carats. It was so large that a human hand couldn't wrap all the way around it. The diamond was named after the founder

of the mine, Sir Thomas Cullinan. In 1907 the diamonds cut from this stone were presented to King Edward VIII as a birthday gift from the people of the South African province of Transvaal.

Fran asked if we knew the five "C's" of diamonds, and when we couldn't come up with the last one she helped us out: Cut, Color, Clarity, Carats and Credit Card.

The Cut defines how well light is refracted through the diamond. If it is cut too short the light reflects out the bottom, but if it is cut too long it will reflect out the side. When it is cut ideally, the light will reflect back out the top of the diamond, making it sparkle.

The Color is graded from D to Z, with 'D' being clear and 'Z' being at the yellow end of the color spectrum.

The Clarity defines the absence or presence of flaws inside or on top of the diamond. The scale for Clarity is:

- IF (internally flawless): no internal flaws, slight external blemishes
- VVS1 and VVS2 (very, very slightly included): minute inclusions; difficult for even an experienced grader to detect
- VS1 and VS2 (very slightly included): minute inclusions, not easily seen by an experienced grader
- SI1 and SI2 (slightly included): inclusions that are noticeable to an experienced grader
- I1, I2 and I3 (included): obvious inclusions that may affect transparency and brilliance



Carats are the measure of the weight. It is popularly believed that the carat, the unit of weight for gemstones, is derived from the name of the carob tree (*Ceratonia siliqua* L., Fabaceae) via an ancient weighing system based on its seeds. Carob was reputedly selected because the mass of its seeds is unusually constant, about 200 milligrams.

Points are a smaller size weighing 100 milligrams. Seeds from five pods belonging to three different trees are shown here (place of origin or variety of tree differs, but not the size).



The Cullinan diamond, 3106.75 carats / 621.35 grams / 1.37 pounds rough weight, about 10.5 centimeters / 4.1 inches long in its largest dimension, was cut into 9 major diamonds and 96 smaller stones. Displayed are replicas of the rough Cullinan Diamond surrounded by the nine major diamonds:

- Cullinan I (Great Star of Africa) is 530.4 carats cut in a pear shape with 74 facets
- Cullinan II (Second Star of Africa) diamond is 317.4 carats cut in a rectangular cushion shape
- Cullinan III through Cullinan IX are also with the English monarchy and cut in a variety of shapes like pear, cushion, heart and marquise. These diamonds range in weight from 4.4 to 94.4 carats.

Diamonds are the hardest known substance on earth, and the most beautiful. Diamonds are a symbol of love and sovereignty because they are rare and hard to find in any quantity. They are usually found far below the surface in what is known as a "cone" from a several billion year old volcano (which is the heart of the mine). This mine's cone is made of kimberlite, which is able to be eroded away by water.

The mine's first name was Premier Diamond Mine, later changed to Cullinan Mine after the founder, Sir Thomas Cullinan. Because of labor unrest and the start of the Great War of Europe, mining operations were suspended in 1914. Operations re-started in 1916, and in 1917 De Beers acquired a controlling interest. The mine began as an open pit mine and continued that way until after the economic slowdown in 1932 that was brought on by the Great Depression in America. Once again the mining operations were suspended in 1932, and after a 12-year closure the mine reopened in 1948 as an underground operation. In 2008 De Beers sold the mine to Petra Diamonds as it was not profitable enough to support the other arms of their business (a worldwide network of sales outlets), with the mine only producing commercial grade diamonds. Petra Diamonds focuses on the commercial grade diamond niche to turn a profit, and they don't have to support a large distribution network like De Beers.



Next we headed out to tour the mine site. Jacaranda trees lined the streets of Cullinan, which has a very vibrant and thriving business district made up of shops, markets, restaurants and parks. We walked through the small and very Edwardian town to an 8-

foot fence across the roadway. We were guided through the fence and into the mine compound that has very tight security, as it is monitored continuously with security cameras. Descendants of the pioneer miners still live in Cullinan as a living working tribute to the miners who have worked there for over a century.



The mine runs three nine-hour shifts, usually two production and one maintenance. All employees are supplied with hard hats, coveralls and rubber boots. At the end of their shift the miners go through a process to recover any diamonds and remove the dirt stuck to their clothes or boots, which consists of a boot washing station and a shower station.



Continuing on the tour we walked past several large tanks of water and chemicals used for a cleaning process. We saw the tower structure that holds the very large buckets that bring the ore to the surface after it is crushed and broken apart with the crushers and rock breakers below surface. There are 417 kilometers of tunnels below the surface that the ore is carried through before reaching the surface.

We were guided to a lookout point for the open pit part of the mine. The open pit measures one kilometre by one-half kilometre. You can't see the bottom of the pit from the lookout point. In the last 50 years the mine has shifted to being an all underground mine. Mining is currently being done at 700 metres below surface, using the block method.



An ore car carries approximately a dump truck load of ore at a time to the surface. There are two cars running non-stop to keep up with the miners below. The car is about six feet wide.

Once the block is released from the wall the ore is taken to the rock crushers and breakers before being taken to the surface. On the surface the ore is washed to remove the fine materials. It is then carefully crushed again. The sorting process is started by the ore being bounced along a conveyer belt where the high density and reflectability of the diamonds helps with the sorting process. A diamond's high density property also allows it to adhere to grease, making it easier to find.

In 2004 the sorting process was dramatically enhanced with new technology. Petra built a highly secure Optical Sorting Plant for increased efficiency. The machine moves the ore at 3 metres per second, and values the ore by color, transparency, shape and size. One hundred tonnes of ore will produce about 40 carats or 10 grams of diamonds, of which only 2 grams are gem quality.

Once the diamonds are recovered another sorting and valuing is done at the Diamond Exchange in Johannesburg. The sorted diamonds are auctioned off to dealers in parcels; these parcels are bid on confidentially. Parcels are available for preview for five to six days before the auction. Diamonds are selected for different purposes based on their unique characteristics. Gem quality or commercial grade diamonds will be cut and polished for jewelry. Any diamonds not of gem quality, and industrial diamonds, are auctioned off for other uses such as diamond tipped saw blades or drill bits, or as abrasives for polishing.

Cutting and polishing is a very highly skilled job and is as much an art form as a science. Petra provides the highly specialized training needed to perform the work, which helps to build the Cullinan community.

Petra participates in a number of development programs to support and grow the community, which has a very diverse group of people. These programs include providing educational supplies, sports equipment and a community sports complex with activities and an illiteracy program. The illiteracy program is available for both above and below ground adults. At the lookout Fran did a draw for a door prize, which was won by Jodie, our travel agent. She received a replica of the raw Cullinan Diamond mounted on a block.



Nearing the end of our tour we saw a spare elevator car that is used to move the miners in and out of the mine. It is the size of a small cube van. Capacity is set at 102 people – wow! I hope no one is claustrophobic. The elevator can travel to the mine bottom, a depth of 700 metres, in about two minutes.

We concluded our tour back at the Diamond Gallery. Here we had an opportunity to see an employee cut and polish a diamond, watch the jeweler make adjustments to the settings on a purchase made by a fellow traveler, and browse for a diamond souvenir. We were pretty excited to see all of the diamonds available for sale. Assuming the prices indicated were in Rand, the African currency, we thought they were quite reasonable until we realized they were actually in US dollars.

Petra has set up the Cullinan Charity Fund to help with home based adult and orphan care in the area to help combat the spread of HIV and AIDS.

Cullinan Mine is the worlds' only reliable source of blue diamonds. These diamonds are very rare; the blue coloring comes from the element boron when the diamond is formed. In May of 2008 Cullinan produced a raw 26 carat blue diamond that was cut into a cushion shaped diamond of 7.03 carats and sold at auction for \$9.4 million, setting a new record for price per carat. It is rated vivid fancy and internally flawless, the highest rating for a blue diamond. It is named the Star of Josephine.

Fran was thanked for her amazing job with our above-ground tour.

Questions:

- Q: Are there any woman working in the mine?
 A: Yes, there are currently twelve women that work below ground.
- Q: Why are they working on the road on the far side of the open pit?
 A: They need to move the main road back from the edge of the pit. It is an environmental requirement (of a 60 metre minimum). In the last few years the pit wall has moved too close to the road from erosion.



Cullinan Diamond Mine (below ground)

Lucy Mulgrew

They say “Diamonds are a girl’s best friend”. Well today, October 8, 2013 we are going on a tour to see where these “friends” come from. Thirty-two excited travelers boarded the early bus to go underground, while the other half would come later to do the above ground tour. Once we arrived at the mine we were given a safety orientation and suited up (coveralls, socks, steel-toed rubber boots, hard hats with lights, safety glasses, and an emergency breathing machine).



The group getting safety orientated

Our group was split into two and then we climbed into the backs of trucks and were driven to the elevators on site, where we were going 740 meters underground.



Walking miles underground

We lined up with the miners and boarded the elevators. Once underground, we walked many miles while our guide explained the history of how this mine came to be and how it worked.

History

In 1903 an influential building contractor named Thomas Cullinan bought the Elandsfontein farm that now houses the Cullinan Diamond Mine. He was in Africa and a little boy wanted to trade him a bauble for something. It turned out to be a diamond and Thomas knew he had to buy the land. After much negotiation he paid \$500,000. The farmers never knew what was under the land.

Less than two years later a rough diamond was found nine meters down, protruding from the side wall of the pit. The diamond measured a staggering 3,106.75 carats. This Cullinan Diamond was established as the greatest diamond ever found.

The jewel was named after the mine’s owner and sold to the South African government, who presented it to King Edward VII on his 66th birthday. The largest diamond the world has ever known was cut into nine major stones and approximately 96 smaller diamonds.

Sir Thomas Major Cullinan remained involved with operations until 1923, when he resigned as Chairman and a prominent Board member, and sold his shares to move on to other ventures. Mr. Cullinan died in 1936 but his mine continued to unearth the largest and most famous gems ever known.

In 2003, in celebration of its centenary, the mine was officially renamed the Cullinan Diamond Mine. The mine remains a major diamond producer to this day, and is the only significant source of blue diamonds in the world.

Petra Diamonds purchased a 37% stake in the mine from De Beers in 2008. The company increased this to 74% in 2009 by purchasing Al Rajhi’s shares.

The Premier Mine is an underground diamond mine owned by Petra Diamonds. It is shaped like a pear and is situated on a level plateau at an elevation of about 200 feet, surrounded by hills and kopjes about 100 feet high. It is situated in the town of Cullinan, 40 kilometers east of Pretoria, Gauteng Province, South Africa.

Petra Diamonds has planned for the expansion of the Cullinan mine to increase the mine’s production from 920,000 carats to 2.6 million carats by 2019. The mine has a life of more than 50 years. The current mining plan is for 16 years.



Pear-shaped mine

Geology

Cullinan mine is located on a diamond-bearing kimberlite pipe. The carrot-shaped pipe, with a volcanic neck, is considered to be the largest kimberlite pipe of the region. It was first mined in 1871; the mining site is currently referred to as Kimberley’s big hole.

The surface area of the mine is 32 hectares. The big hole is 1,000 meters by 400 meters. At 500 meters below the ground it narrows down to 21 hectares. The depth of the mine is 190 meters from the surface. The Cullinan pipe has three types of kimberlite: brown, grey and black (hyperbyssal).

Diamond Reserves

The diamond mine has a reserve base of 203.7 million carats. The reserve estimates are based on block cave depletion modelling and external waste. The planned expansion will increase the reserve estimate.

Production

The Cullinan mine is one of the world's best known diamond producers. The acquisition of the mine led Petra Diamonds to discover world-class diamonds including a 39 carat blue diamond, a 26 carat blue diamond and a 507 carat white diamond.

The mine has produced more than 350 metric tons of ore, yielding nearly 120 million carats of diamonds. It has reprocessed more than 75 metric tons of coarse tailings material and yielded 20 million carats of diamonds.

Petra Diamond's Expansion Plans

Petra Diamonds has planned for a major expansion of the diamond mine. The C-Cut expansion plan includes the deepening of Shafts 1 and 3, related infrastructure to the shaft and planned level development to the Cullinan ore body.

The 350-meter deep existing Shaft 1 will be deepened to 920 meters. It will lift up the ore and waste from the new C-Cut phase 1 block once the process of deepening is completed.

The 60-meter deep existing Shaft 3 will be deepened to 904 meters. It will take workers and material to and from the new C-Cut phase 1 block.

A new block cave will be opened in the C-Cut phase 1 of the Cullinan Kimberlite pipe. The C-Cut phase 1 area is located 200 meters below the existing operations. The new block will receive the C-Cut reserves.

Murray & Robert Cementation will be responsible for all engineering requirements. ABB will take the charge to upgrade the winder and ropes.

Mining and Processing

Petra Diamonds uses the block cave mining method to develop the underground resources. In this method, a drilling level is built up, through which the ore body is cut by drilling and blasting.

Once a large area is undercut, caving is started. Mining works are also done at the undercut level. The mining work includes long hole drilling, blasting, charging and tramping of required ore.

The production level is located 15 meters below the undercut level and tunnels are bored into the ore body at the level. Draw points are developed on these tunnels and raise-bored.

A draw bell is built up to receive the caved ore. The caved ore then flows into the draw point. Load haul dump trucks load the ore and carry it out of the ore body. Nearly 43% of rocks are extracted to carry out the mining operation.

After walking for miles in our suits and equipment, we all agreed this was not a job for us. We were hot and dusty, and many of us had blisters. We salute the people who work underground every day. While we were waiting for the elevator, we were able to ask more questions.

Question: What percentage of mined material is good enough for diamonds, and what do they use the other percentage for?

Answer: About 38% of mined material qualifies for diamonds and the rest goes to other industries like oil and gas and construction.

We then visited the showroom, where we met up with the rest of our group. There is a glittering display of diamond jewelry, in settings that range from the contemporary to the nostalgic.

Shoppers can choose their own diamond from a selection of loose stones, and watch as it is expertly set in a design that is uniquely you. All diamonds purchased carry an international certification for their quality, veracity and value.

And guess what? A very nice man from our group purchased a pair of diamond earrings for his wife for their anniversary. Daphne Bennett had the pleasure of helping him choose the pair.

Yes, diamonds **are** a girl's Best Friend.



Daphne Bennett, Lucy Mulgrew and Kathi DesChene waiting for the elevator

SANEDI: Carbon Capture and Storage

Lucy Mulgrew



On October 8, 2013 our enthusiastic group was transported to the offices of the South African National Energy Research Institute (SANEDI). We were greeted by Dr. Tony Surridge, Senior Manager, and his staff, who treated us to an amazing African lunch before the presentation.

Dr. Surridge was born and educated in New Zealand. He was employed by the South African CSIR (Council for Scientific and Industrial Research) in the Atmospheric Research Group. From 1993 to 2006 Dr. Surridge worked for the Department of Minerals and Energy as a Deputy Director, and from 1995 as a Director responsible for electricity, renewable energy, energy efficiency, energy database, environment, coal and gas and petroleum matters. He drafted South Africa's first National Integrated Energy Plan, served on numerous committees, negotiated a number of international agreements and represented South Africa at numerous international gatherings including the Kyoto Protocol negotiations.

He currently holds a number of degrees including a Master's of Science and a Ph.D., and is an Honorary Professor at the University of Witwatersrand.

Since 2006 he has served as Senior Manager of Advanced Fossil Fuel Use at SANEDI and is currently the Head of the South Africa Centre for Carbon Capture and Storage.

South African Energy

South Africa has about 50 billion tons of coal reserves and they know how to use it. Ninety percent of their electricity is produced from coal and they have enough to last for about 30 years; 2020 will be a critical point for South Africa. The disadvantages are that coal has an environmental impact (climate change) and the reserves are limited.

What is Carbon Capture and Storage?

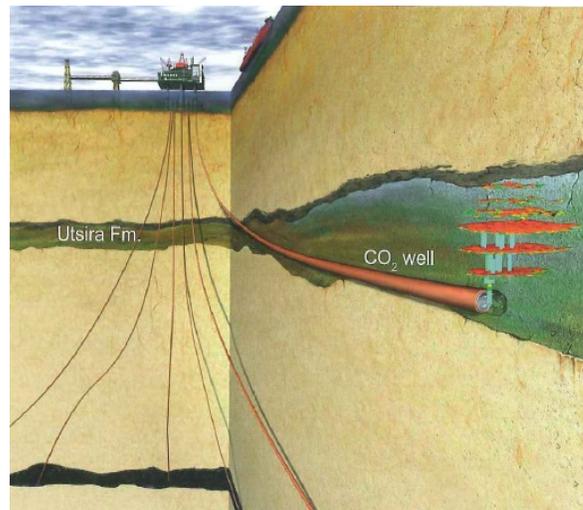
Human consumption of fossil fuels is a major source of carbon dioxide (CO₂) and greenhouse gas (GHG) emissions globally. In the largest economies of the world, such as the US and China, coal-burning power stations remain responsible for a large volume of electricity generated carbon emissions.

Other sources are found in industrial sites and other thermal power plants, such as natural gas fired. These emissions are increasing year on year, leading to concerns over permanent climate change, ocean acidification and air quality changes. A reduction in GHG emissions has been made essential at international, national and regional policy levels. Carbon capture and storage (CCS) has been proposed as a technology to aid in climate change mitigation strategies.

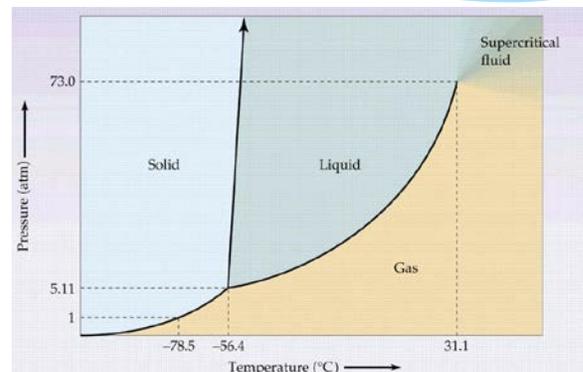
The market is still immature, with few large scale developments worldwide. Economic slowdowns, inefficient policies and problematic economics have led to slow growth in this market, despite initial enthusiasm for its development. However, with the growth of CO₂ Enhanced Oil Recovery techniques, and tightening of environmental legislation, there is hope for CCS growth worldwide.

There are 4 phases:

- Carbon capture: separate carbon dioxide from other effluent gases, e.g. nitrogen
- Transport: compress and transport from source to storage site
- Storage: inject CO₂ into geological formations (generally greater than a depth of 800 meters)
- Monitoring and verification: ensure the integrity of the store

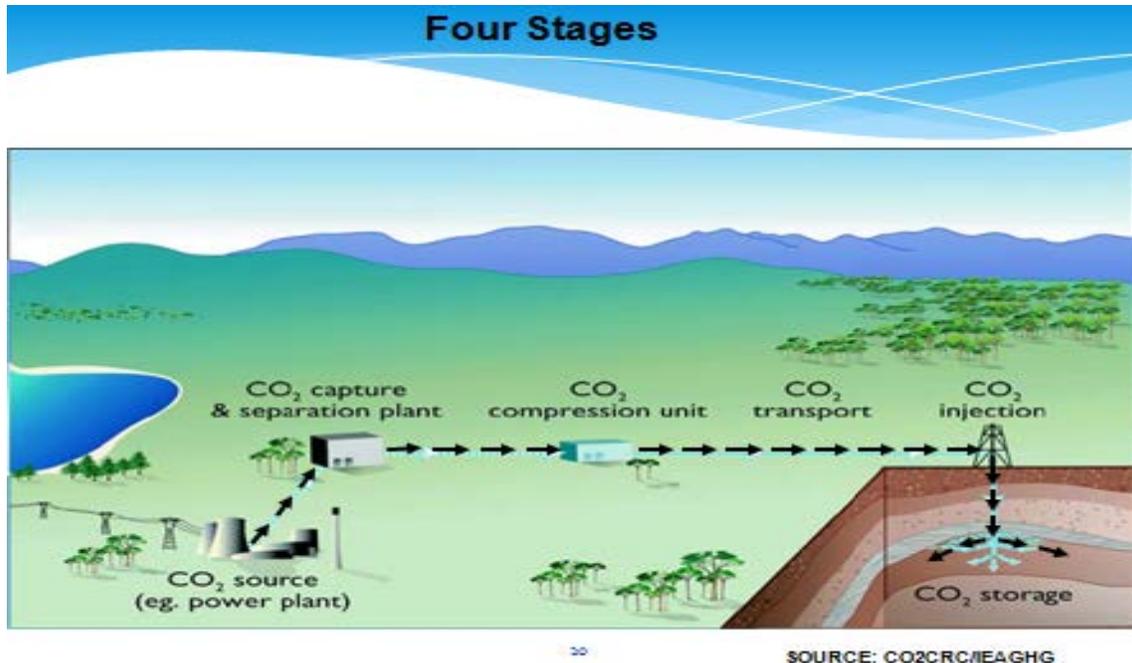


Stored Deep >800m



Although CCS may not be the only option for reducing global CO₂ emissions, it is one of the most direct options. In a world that still relies heavily on fossil fuel generated power, CCS offers the ability to capture CO₂ emissions without having to reinvest in completely alternative energy sources and technologies. With rapidly growing consumption of coal, particularly in developing nations such as China and India, but also in regions such as the US, CCS is a robust option for emissions mitigation.





South African CCS Program

Carbon capture and Storage is essential to South Africa's Greenhouse Gas Mitigation Program for the following reasons:

- transition from fossil fuels to nuclear and renewable energies (energy efficiency measures included)
- CCS is part of the Long Term Mitigation Scenario (Department of Environmental Affairs and Tourism)
- CCS is a flagship program of the White Paper on Climate Change Response Strategy (Department of Environmental Affairs)
- Cabinet endorsed the CCS Road map in May of 2012
- CCS is mentioned 3 times in the National Development Plan
- mitigation of greenhouse gas emissions will be more expensive without carbon capture and storage (International Energy Agency)

Summary

Carbon Capture and Storage (CCS) represents the single largest tool to reduce greenhouse gas (GHG) emissions. At the same time, CCS will enable domestic energy industry to continue to produce energy and generate significant economic benefits.

Successful development and implementation of CCS will enable countries to meet international and domestic commitments to reduce GHGs in a way that will also reduce the environmental impact, so they can continue to create jobs and wealth, and help establish a secure electricity supply by enabling the clean use of abundant coal resources.

Carbon Capture and Storage, typically referred to as CCS, is a process designed to:

- capture carbon dioxide emissions from large industrial facilities before the CO₂ is emitted to the atmosphere
- transport the CO₂ through pipelines, and permanently store the CO₂ in deep, secure underground formations.

Carbon Dioxide can be captured from large emission sources that burn fossil fuels, such as:

- coal-fired power plants
- oil and gas operation, including the oil sands
- other industrial activities such as chemical, fertilizer and cement manufacturing

There are several ways to capture CO₂:

- directly separating CO₂ from regular flu gas after the combustion process at the emission source (this is called post-combustion capture)
- modifying the fossil fuel combustion technology to make the CO₂ easier to capture. This can be done through pre-combustion capture (gasification) or oxyfuel combustion.

After the question and answer period Daphne Bennett presented Dr. Surridge with samples from the Fort McMurray Oil Sands, and an Energy Excursion Certificate of Appreciation.





SANEDI: Green Transport

Lucy Mulgrew

Mr. Carel Snyman has been involved in the energy industry since 1988, when he joined the South Africa National Energy Council (NEC) responsible for the Alternative Transport Energy portfolio. His activities include:

- managing the national transport energy research program
- chairing various industry task groups to address energy issues and problems
- planning strategies with respect to use of alternative sources for transport energy, and discussing strategic plans and energy policy with the petroleum producing and the vehicle manufacturing industries
- in 1989 he started the Electric Transport Program with Eskom as co-sponsor and development partner of the initial project

When the NEC closed its doors in 1992, he continued his career at Eskom where he was responsible for the Electric Transport Program. Various electric vehicle conversions were undertaken at Eskom to demonstrate their utility and practical use. These included electric bikes, light delivery trucks, shuttle buses, a Land Rover and a 20-seat game viewing vehicle.

In 2007 he was responsible for the establishment of a Green Transport Centre for SANEDI. All of the old Eskom vehicles, parts and components were relocated here for further research and demonstration projects.

In 2010 he was involved with the creation of GridCars and in 2012 moved the business into the Energy and Mobility Technology Centre where the conceptual and prototype development of light-weight shared electric commuters and service vehicles took shape and the Eskom vehicles and equipment found a new home.

He joined the South African National Energy Development Institute (SANEDI) in June 2013, where he is currently responsible for Green Transport.

The Green Transport vision is to be a one-stop facility for information sharing, technology development, and technology demonstration related to use and testing of alternate fuels and vehicles.

Their focus areas will be:

- Hybrid, conversions to electric vehicles and associated charging stations
- Compressed Natural Gas (CNG) conversions and refueling infrastructure
- Liquefied Petroleum Gas (LPG) conversions and refueling Infrastructure
- Biofuels and refueling infrastructure
- My Car, My Energy: 75% of the energy we put into a car is lost. We need to move people, not cars. We need to develop a solution that is cost effective and the best way to produce local industries.

Mr. Snyman was presented with Oil Sands samples and an Energy Excursion Certificate of Appreciation by Kathi DesChene.



Kendal Power Station

Lucy Mulgrew



On October 8 at the Da Vinci Hotel we enjoyed a dinner and presentation about the Kendal Power Station owned by Eskom, a South African public electricity utility company. Our speaker was Christopher Nani, the Power Station Manager at Kendal.



Mr. Nani provided some information about South Africa: the President is Jacob Zuma, South Africa covers 1.2 million square kilometers, and the population is 52.96 million. South Africa is bigger than Germany, France and Italy combined.

Eskom operates the only nuclear power plant in Africa and operates the biggest dry cooled power station in the world. One hundred and twenty three million tons of coal are burned per annum and there are 11,796 generation employees, which is one-quarter of Eskom.

Eskom has 23 operating power stations and, of these, 13 are coal fired, 1 is nuclear, 8 are peaking power stations and 1 is a wind energy facility. The nominal capacity of 41 919 MW power can be sent out onto the national grid and they import about 4 per cent (1500 MW from Hydro Cahora Bassa).

Construction of Kendal began in July 1982, with its last unit coming into operation in 1993. Kendal is currently the largest coal-fired power station in the world and holds several Eskom performance records. The station is 13 years old this year. Kendal is located 100 kilometers from Johannesburg.

Kendal has an indirect dry-cooling system, which means that it uses significantly less water in its cooling processes than the conventional wet cooled power stations. The station's cooling towers are the largest structures of their kind in the world with a height and base diameter of 165 meters.

Some of the technical details are:

- Six 686 MW units
- Installed capacity: 4 116 MW
- 2001 capacity: 3 840 MW
- Design efficiency at rated turbine MCR (%): 35.30%
- Ramp rate: 16.67% per hour
- Average availability over last 3 years: 93.69%
- Average production over last 3 years: 24 691 GWh
- Employs approximately 830 people

After the question and answer period, Mr. Nani was presented with samples from the Fort McMurray Oil Sands and an Energy Excursion Certificate of Appreciation from Kathi DesChene.





Hector Pieterse Museum and Apartheid Museum

Tracy Fillmore

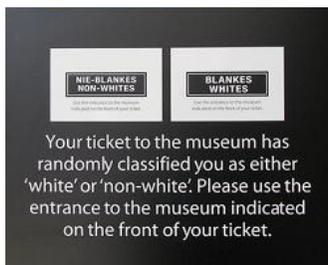
This was the day I was waiting for the most on my trip to South Africa, a visit to the Apartheid Museum. We had a native Sowetonian, Ali, join us as our tour guide.

Our first stop was at an amazing lookout point, with a rock wall surrounding the edge of the lookout. We could see the city for miles; in the foreground there was a temple of one of the many religions of South Africa. There was a large variety of plants on the hill behind us, from large cacti to small trees. We then headed on to drive through the rest of the sites in Soweto which included old neighbourhoods like Mount Royal with gorgeous old houses, ghettos, new communities for the low income people of South Africa, Winnie Mandela's house, a private school, Nelson Mandela's house and then on to the Hector Pieterse Museum.

As we disembarked the bus and walked towards the museum we discovered a noticeable 200-metre long trough in the pavement, sidewalk and roadway. Ali told us this trough, which follows the path the bullet travelled when Hector Pieterse was shot, was purposely created and that was the beginning of the riots in South Africa.

The museum was very interesting, as it was all about Apartheid and how children were treated / educated before and after Apartheid. Following the tour we had lunch at the home of an African lady who has a restaurant / catering business in her house. Lunch was an amazing spread of chicken, beef, fish, vegetables and a potato-like dish, topped off with cake and ice cream for dessert. The kitchen was tiny, long and narrow, but very efficient for the amount of delicious food they put out for our lunch.

As we were about to leave, 10 Zulu warriors arrived and entertained us with traditional drumming and dancing in their native attire. Although it was amazing, the dancing was very athletic and rhythmic, and the fur outfits worn would have been very hot.



When we arrived at the Apartheid Museum, the host handed out tickets to everyone before we were allowed to enter. Each ticket identified who you were defined as being, and how you would be treated on the tour. The tickets divided us into two very distinct groups of whites and non-whites. This meant that each group was to follow the appropriate rules for that group. Some entered through a white turnstile, while others were to use the non-white turnstile side. This was a very unusual way to enter but also allowed some of us to feel how the people in the minority groups were treated.

Inside the museum were several different sections divided up by periods of time, e.g. Childhood, Family, Education, Early Years, Trial, Jail, Release, Election, Presidential Time and Statesman.



We were not allowed to take pictures while inside the museum, so my photos are from the internet. The one thing that stood out for me was the list of over 150 rules printed on the wall from floor to ceiling.

Some of the rules imposed during Apartheid were:

- a curfew for all persons of a certain race
- Prevention of Illegal Squatting Act
- Laws Amendment Act
- Native Services Levy Act
- Public Safety Act
- Immigration Regulation Act
- Bantu Education Act
- Native Labour (Settlements of Disputes) Act
- Reservation of Separate Amenities Act
- Riotous Assemblies and Suppression of Communism Amendments Act
- Native Trust and Land Amendment Act
- Natives Resettlement Act
- Criminal Procedures and Evidence Amendment Act
- Criminal Procedures Act
- Motor Carrier Transportation Amendment Act
- General Law Amendment Act
- Group Area Development Act
- Natives (Urban Areas) Amendment Act

Some notes from within the museum:

- Born in 1918, Nelson got his Christian name from the school teacher who rejected having to use Rohilrahadra Madiba Mandela. Tata Khulu Dalibjunga were names added later. Tata, an isiXhosa word, means 'Father'; Khulu means 'Great One'. It is also a shortened form of the isiXhosa word Tat'omkhulu for 'grandfather'. Dalibjunga was given at the age of 16 once he had undergone initiation, the traditional Xhosa rite of passage into manhood. It means 'creator or founder of the council' or 'convenor of the dialogue'.
- Parents are buried in Qunu, Transkei.
- Nelson showed leadership qualities even as a child, per his sister's account.
- His father was a polygamist with 4 wives 9 children.
- Nelson herded cattle and sheep as a boy; he also hunted for food.
- Playing stick-fighting with his siblings, he received a scar on his leg that was a reminder of his youth.
- His mother was his first friend.
- Nelson became a Christian.
- He went to school for the first time wearing a pair of used pants and a rope belt.
- Father died at home while smoking his pipe.
- At nine years of age Nelson was sent to be raised by friends and groomed to be the Chief Counselor to the King.



- Nelson was raised by Chief Jongintaba David Dalindyebo as one of the family. This family already had two children of their own: Justice Mthikrakra, heir to the Cheiffinese, and Nomoffta, a daughter.
- Nelson learned of olden-days fighting, with spears against guns, from the elders of the King's court where he would serve their food, bring beer to them and run their errands. This type of fighting lasted over 100 years.
- Clarkeberry Boarding School is where Nelson got his Standard 6, Form 1, 2 and 3.
- In a speech made at Clarkeberry School as a visitor, Nelson reiterated the importance of having knowledge to save your country and your people.
- All boys are circumcised when during their initiation; it is ingrained in the culture and is done with a spear. Elders watch to see how the phrase 'I am a man' is spoken after the procedure is completed. The huts used for the procedures are then burned, signifying the end of childhood.
- Quote: 'You will fight for the freedom of your people to be free from bondage.'
- Nelson came to Johannesburg on April 1, 1941, with Justice to find jobs in the mine. Justice was given a watchman's post and Nelson found a position as a clerk. The boys needed a letter from the King to keep the jobs, but when the King found the boys missing he sent a telegram to the mine saying to send boys home. They both defied the order to go home and ended up in Alexander (ghetto), staying with a homeless family, where they got fed one meal on Sunday.
- In Johannesburg a real estate man named Sisulu had a typewriter; this fascinated Nelson. Sisulu and Nelson became friends. This friendship helped Nelson secure an apprenticeship as a clerk at a law office.



Though he was an ordinary person, Nelson seemed royal and regal. He became a member of the African National Congress (ANC) by joining the youth league.

- He loved to box.
- Apartheid: whites lead, blacks served, passes were required and could be requested at any time.
- Politics came first to Nelson and family came second.

- Nelson and his wife Evelyn were living in two separate houses in Orlando. In 1957 he divorced Evelyn, and she got the children.
- Sisulu asked Nelson's mother to take him home to save him from going to prison.
- Nelson was a large man, humorous, and elegant; he entertained friends and plied them with liquor.
- Winnie tried to miss her meeting with Nelson because she knew she couldn't say 'No' to a man with that much charisma. Her father worried about Winnie marrying Nelson for several reasons: age, politics and becoming a maid for the older children.
- In December 1956, 156 people were arrested and charged with high treason. Protests were arranged outside the police station against passed laws, there was bloodshed so martial law was imposed.
- Nelson went undercover to lead the movement, changing cars frequently as well as hats, so as not to be caught.
- In an underground interview given by Nelson in 1961, he was quoted as saying 'One man, one vote, many races and cultures'.

- The government wouldn't negotiate with the people of Africa. Nelson went out of the country to get money and training to fight against the government. He was arrested when he returned.
- Nelson showed up in traditional tribal attire and was jailed for 5 years. One year into that sentence he was taken back to court to be tried for high treason (which carries the death penalty when convicted). His lawyers asked Nelson to change the wording of a statement to be made to the court at sentencing to include '*if needs be* I am prepared to die for this cause'.
- He fought against white domination and for equality of all people.
- June 13, 1964, imprisoned in Robben Island, imprisonment lasted 27 years, allowed 1 letter, 1 visit per month, and he had kept a picture of Winnie.
- Labor done in prison at a lime quarry was supposed to last 6 months, it lasted 13 years.
- There were no toilet facilities, so they used a cave as their latrine and dug holes to bury it.
- All prisoners were punished for no reason; it was rotated through all the inmates.
- His cell was 3 feet by 5 feet in size; it had a bed and a pail. He stood his ground for better conditions.
- It took 2 to 3 days for Nelson to finish a chess game. Prisoners would teach each other different things, including how to debate. They all operated as if time was running out.
- Winnie needed to support herself and the children; her grief was held inside like a blanket.
- Nelson had a re-occurring dream about going home to Soweto to find the house empty and not knowing what had happened to Winnie and children.
- Winnie was taken to Brandfort and put in a type of isolation; she later became a leader of the Apartheid movement.
- Winnie started to rally the youth of Africa, Zindia Mandela was always a ANC member, Desmond Tutu pushed for the release of Nelson Mandela.
- In August 1989 the African President resigned, De Klerk was elected President and eventually freed Mandela in 1992.



There is so much information at the Museum I could go on for days, but only having a few hours it was hard to see everything. If you ever get the chance to go to South Africa, I highly recommend a visit to the museum.

Apartheid and the People of South Africa		
	Blacks	Whites
Population	19 million	4.5 million
Land Allocation	13 percent	87 percent
Share of National Income	< 20 percent	75 percent
Ratio of average earnings	1	14
Minimum taxable income	360 rands	750 rands
Doctors/population	1/44,000	1/400
Infant mortality rate	20% (urban) 40% (rural)	2.7%
Annual expenditure on education per pupil	\$45	\$696
Teacher/pupil ratio	1/60	1/22

Figure 1: Disproportionate Treatment circa 1978. Source: [Leo80]



October 10: Mpumalanga

Bourke's Luck Potholes

Cori Peever

Photos by Gita Boyd and Cori Peever



In North America, when we think of potholes, we think of those annoying breaks in the pavement that damage tires and shocks that we do our best to avoid.

If you get the chance to visit Mpumalanga (pronounced pooh-ma-lunga) province in South Africa, (travelling on the Panorama Route on your way to Kruger National Park) you will definitely want to **hit** the Bourke's Luck Potholes in the Blyde River Canyon.

On your way, be on the lookout for the Three Rondovals, a triplet mountain formation resembling the traditional round houses of the indigenous people.



At the top of the canyon, in the main parking area, you'll find local vendors with various goods on offer. They have to purchase a license and rent their spaces, so supporting their proprietorship is great and there are lots of things to choose from; olive wood carvings and bowls, scarves, sarongs, tapestries, hats, bags and jewelry. Truly something for everyone.

On the way to the trail head, you may see baboons or monkeys (and we were lucky enough to see both).



Now, you might be thinking "Wow – shopping, baboons and monkeys. That would have been enough for me", but trust me, making the walk to the viewing bridges is well worth the effort. And it does take a little effort: dirt and rock path and maybe 100 stairs, but when you consider the "stairs" are rocks that have been laid to form perfectly flat platforms, or actually carved into the landscape, even the stairs are worth seeing.



When you do make it down the stairs, the first steps out on to the viewing bridges can cause a few butterflies in the stomach. The Blyde River Canyon is the third largest in the world, so if you're a little afraid of heights (like me), just grab hold of the railing and take a breath, cuz each step forward brings you a more amazing view. In every direction there are waterfalls, "potholes" and rock formations in colors you just don't see every day.

Throughout the centuries the action of the swirling whirlpools, which occur as the Treur River plunges into the Blyde River, has caused waterborne sand and rock to grind huge, cylindrical potholes into the bedrock of the river. The potholes are deep and smooth in contrast to the rough terrain all around, and the water is clear and blue. The waterfalls, although relatively small, are nonetheless beautiful.

The Potholes were named after a gold digger, Tom Burke, who staked a claim nearby. Although his claim did not produce a single ounce of gold, he correctly predicted that large gold deposits would be found in the area.

Not everything worth seeing is in the canyon though, so remember to look down every once in a while and you will likely catch a glimpse of a lizard, bearded dragon, frog, tadpoles or who knows what else? And definitely, as you make your way back up the path, make sure to take a look over your shoulder. You just might see a small troop of baboons relaxing and "people watching" with their newest family member.





Kruger National Park and Safari Game Drive

Cori Peever

Photos by Lisa Monague and Cori Peever



We arrived at the Protea Hotel Kruger Gate around 6:30 p.m. after a day of driving from Johannesburg. Many stops along the way (see the article on the Bourke's Luck Potholes) made the day both enjoyable and informative.

We pick up our room keys, drop off our carry-on bags and head down for a BOMA (buffet) dinner under the stars. The buffet includes a salad bar, trout terrine, pasta bar, 'Springbok' stir fry station, roast beef carving station and a selection of hot vegetable dishes. I didn't try the Springbok, but Lisa Monague tells me it was fantastic. A couple of cocktails later and we're off to bed. We've got an early start tomorrow.

According to Wikipedia, "Kruger National Park is one of the largest game reserves in Africa. It covers an area of 19,633 square kilometers (7,580 square miles), and extends 360 kilometers (220 miles) from north to south and 65 kilometers (40 miles) from east to west. Areas of the park were first protected by the government of the South African Republic in 1898, and it became South Africa's first national park in 1926.

To the west and south of Kruger National Park are the two South African provinces of Limpopo and Mpumalanga. In the north is Zimbabwe, and to the east is Mozambique. It is now part of the Great Limpopo Transfrontier Park; a peace park that links Kruger National Park with the Gonarezhou National Park in Zimbabwe, and with the Limpopo National Park in Mozambique."

The phone rings at a very early 5:30 a.m. and awakens me from a good night's sleep. I answer and hear a very polite "Good morning, this is your wake up call." I respond with a groggy, but polite "Thank you". I give Mark a nudge and say, "Marky Mark – it's safari day!"

We quickly get up and splash some water on our faces, dress in layers as instructed, put the freshly charged batteries in our cameras, slather on the bug dope and sun screen, don our hats and sunglasses and head out to the reception area to meet the jeeps.

The green jeeps have three rows of theatre type seating (each row slightly raised above the row in front), and are open air (no windows) and covered for protection from the elements. The morning air is crisp but I can already feel the heat of the sun, so I'm thankful for the shade.

Mark, Mel (Emelda Johnson) and I grab the back row of seats. Mark and Mel are carrying the big cameras with the fancy lenses, so they take the outside seats. I, with my pocket digital, take the middle seat.

There is nothing but laughter, anticipation and excitement in the air as our group of 69 fills 7 jeeps and the first one begins to roll out of the hotel loading area.

Our guide introduces himself as "Happy" and we all immediately express how "happy" we are to meet him. As a side note, many of the people we met on this trip had 'unusual', (at least by North American norms) names: Prince, Stepside, Pleasure, Nomatter, Lucky, and Smiley to name a few. Of course there were some more common names as well: Jim, Isaac, Harold and Dickson, and some people we met had very traditional names: Mayibongwe (pronounced May-eh-bon-way) and Zinhle (pronounced Zin-clay).

Ours is the first jeep to arrive at the Kruger Park Gate, and our driver brings us a release form to sign. To be honest, I am only assuming it was some kind of release form, as I was a little anxious to get into the park and didn't actually read it... just signed my name, smiled and passed it back. As soon as we're finished with the signatures, Happy gets back into the jeep and we are on our way.



About 500 meters into the park we made a right turn and literally drove for about 30 seconds before we had our first sighting of the day: LIONS! A pride of 9: some juvenile males, a lioness and last year's cubs. They went straight across the road in front of us. (Even through the gasps and squeals of excitement, the clicks, beeps and flashes of the cameras were prominent.) The lions were amazing – wary and cautious, but certainly not afraid and almost indignant. It was reminiscent of a parade; jeeps on both sides and the lions walking through the middle, aware of and acknowledging the crowd that had formed to see them. As the last one crossed the road Happy quickly turned the jeep around, heading in a new direction and radioing with the other guides, hoping to intersect with them again to give us another view. Success – we spotted them again and the camera symphony played once more.

We turn around and head back to the original sighting spot. We get there just in time for our second sighting of the day: a LEOPARD! He was up in a tree and, at first, just a dark silhouette amongst the leaves, but still large and impressive. The power and strength of this animal is clearly evident and I can literally feel it in the air. He turns and comes slightly forward out of the shadows and is no longer just a black shape. The rippling muscle, the powerful jaw, and the magnificent spots are breathtaking. "Mark, Mel! Are you getting this?" We quickly take as many pictures as we can before moving to give another group a chance to view this spectacular and rarely seen animal.





Wow! We haven't been in the park for 10 minutes and we've already seen two (and the two most elusive) of the "Big 5". The Big 5, consisting of the African Elephant, Leopard, Lion, Cape Buffalo and Rhinoceros, are often thought to be included in the group because of their size. The truth is that these animals are considered the most difficult to hunt.



We don't wait very long for our next sighting, and it's a big one. Jumbo, you might say. You guessed it: four ELEPHANTS! Just off the side of the road. A large female (the matriarch) and 3 juveniles. Young male adults stay with the herd until about the age of

15 years. At that time they leave the family and typically join other young males to form small bachelor groups, and may stay with those groups until fully mature. It's uncanny how these huge animals can blend into the scenery and stand silently only a few meters away from us.

Three of the Big 5 seen. "What time is it?" "6:45." We have been in the park for 15 minutes. Seems unreal, right? Well, it was the reality for us, but not a typical case by any means. Our groups were very fortunate – some guests who take this excursion don't see even 2 of the Big 5 in the whole day, and we have seen 3 of them in the first 15 minutes.

It is springtime in South Africa, and Happy explains that many animals that have wintered in the northern part of the park are now moving into the area. Lucky for us.

In the next couple of hours we see many other animals. Impala (which, Happy points out, have dark markings on the rear that resemble the letter M, so are referred to as McDonald's or fast food), Kudu, White-Backed Vultures, Steenbok, Warthogs, Yellow-billed Hornbills, and (look up – way up) a small group of Giraffes. Two mothers and three young, necks stretched long and blue tongues ripping leaves from the upper branches of the Acacia trees.



Impala – can you spot the M?

We continue our drive and some calls come through on the radio. It is evident there is some sort of excitement, even though I have no idea what is being said or even what language is being spoken. Happy is clearly heading somewhere and seems to have stepped on the gas.



We come around the corner and ahead I see another jeep stopped on the side of the road. (It doesn't take long to associate any vehicle stopped on the road with a sighting of some sort). The anticipation grows and is not misplaced. When we pull up, there is a large adult male lion resting in the shade under a small tree. Awesome! There are two others that have moved into the bush, but I don't even care. Seeing this one is fantastic and

even though we've seen others this morning, this large male with full mane is almost somehow more regal.

(Click, click, click, click, click, click, click. Ten cameras in a continuous frenzy of picture taking.)



Just up the road, I see something on the side of the hill. "Happy, are those Rhinos?" "Yes, RHINOS!" Yeah! (These are included in the Big 5, so our good fortune continues.) Although they are some distance away, we are all thrilled to see them. Happy explains that these are White Rhinos. They have long heads, as opposed to the Black Rhino which has a much shorter snout. He tells us they have very poor eyesight but exceptional hearing, and it is evident when they turn towards us and then quickly head up the hill away from us.

We take a 45 minute break for breakfast and bathrooms and watch a monkey steal an apple from an unsuspecting tourist. Funny for us, scary for her. We compare stories (Did you see the Leopard? Did you see the Rhinos?) and share photos with some of the other groups and everyone has a different story to share.

One group was taking pictures of some impalas and warthogs on the ground and watching the monkeys in the tree above. I can see the sheer amazement as Lorrie McClocklin describes the scene to me. "The monkeys began shrieking, the impalas froze and the warthogs bolted into the brush. Even we humans understood the warning being given." Their guide suggested they just wait and see. A couple of minutes later, the warthogs darted out of the bush and across the road in front of them, with a Leopard in hot pursuit. Yikes – what a memory that makes.

There was a quick opportunity for shopping at the gift shop (which I'm sure Daphne appreciated), then back in the jeeps to continue the adventure.



The blessings continue after the break. Some new sightings: Hippos, Nyala Antelope (the smallest antelope), Zebras, Wildebeest and a Jackal, and some more sightings of animals we had already seen, including a small group of elephants. This time two females and a few young crossed the road directly behind us.



And we're fortunate to see a female White Rhino with a young (approximately 2 months old) calf, laying just a couple of feet from the road.



White Rhino calf

"OK, Happy, we're ready to go – now you need to find us a Buffalo." (The only species of the Big 5, we haven't seen today). He chuckles and accepts our challenge and we are on our way. It doesn't take him long either. Soon we are parked on the side of the road beside 5 large bulls resting in the shade.



Up on the hill are hundreds (yes, literally hundreds) of cows and calves. Happy explains that the bulls normally remove themselves from the herd. They stay close but don't travel within the herd. However, at any sign of danger the whole herd would come together, encircling the calves for protection and even attacking lions. The Cape Buffalo is very aggressive and Happy tells us if we were to get out of the jeep now, we would be charged immediately.

We stopped for lunch around 12:30 and even at the park lodge we saw an elephant bathing in the river. Another 45 minutes of sandwich eating, story sharing and shopping before getting on the bus for the last part of the adventure.

After lunch we start making our way back to the Protea Hotel. It's hot; reportedly about 42 degrees Celsius. We're happy when the jeep starts moving and the "air conditioning" kicks in. It takes about 2.5 hours and there are more sightings on the way.

We arrive safely back at the hotel and thank Happy. Some go to take a shower, while others head down to the pool for a dip and a sip.

At the pool there are a couple of young monkeys getting into mischief: wrestling with each other and jumping onto the loungers to check for something to steal. We chase them away several times before we get smart enough to move the loungers closer to the pool. Soon three females come through the pool area, each with a very new baby hanging on her stomach as she walks. They sit briefly, wrapping their arms around their babies and giving us only a sneak peek at their tiny faces.

A couple of mojitos later (while enjoying some local entertainment, music and dancing) and another sighting (this time a herd of Cape Buffalo feeding just beyond the fence) and it's time to head back to the room to shower for dinner; another great buffet under the stars. This time I don't hesitate to try the Bushbuck venison, and it's delish.

Another restful and slightly longer sleep and we're off to breakfast before boarding the bus back to Johannesburg airport for our flight to Port Elizabeth. For some in our group the animal sightings weren't quite over. Jan Osbourne, Kathy Bishop and company were enjoying their breakfast when a monkey jumped out of the rafters and onto their table. In mere seconds, amidst dishes crashing, ladies screaming, drinks spilling and guests gawking, he managed to steal a snack right off their plates and return safely to the rafters.

Kruger National Park and the Protea Hotel Kruger Gate were beautiful, eventful and adventurous, and I'm sure if you get the chance to speak to anyone who was on this trip, you will find they have plenty of stories to tell and all of them different from mine.

Unfortunately there's a darker side to this story. The night before we arrived in Kruger, a South African man was arrested with two fresh Rhino horns and is suspected of poaching. He claims that he did not shoot the Rhinos, but that he only acted as the driver for four of his friends (also South African) who were responsible for the killing.

World News reports that rhino poaching has already hit a new annual record in 2013. Last year, 668 rhinos were killed and as of the end of September, the 2013 number has hit 704. It is expected that if the trend keeps at its current pace, more than 1,000 rhinos would be killed in 2014, putting the species on the brink of a population decline that could lead to the end of wild rhinos in as little as 10 years.

The greatest threat to the rhinos in South Africa comes from those trying to cash in on the black market value of their horn, which sells at prices higher than gold. Up until about 2010, only a handful of rhinos were poached but the number shot up when rumours circulated at about that time that a Vietnamese minister's relative was cured of cancer by the horn. There is no basis in science to support the claim.

In traditional Chinese medicine, the horn was used to treat maladies from rheumatism to devil possession. Now, many newly rich Vietnamese consume it after a hard night of partying.

Rhino horn, once seen as a treatment only for royalty, is being swallowed by a small segment of the Vietnamese population who can afford prices of about \$65,000 a kilogram, conservation groups say.

– John Herskovitz for Reuters



Port Elizabeth and [Siyafunda School / Collette Foundation](#)

Lorna Myers



Then on from the wilds of Kruger National Park to the big city of Port Elizabeth with its high volume of traffic and wonderful and plentiful shops and museums.

Port Elizabeth was founded 1820 to house British settlers as a way of strengthening the border region between the Cape colony and the Xhosa. It now forms part of the Nelson Mandela Bay Metropolitan Municipality, which has a population of over 1.3 million.

Market Square is probably the most significant urban space in the city, and is one of the largest open public spaces in the country. Originally the landing beach was nearby and much of the goods arriving at or leaving from Port Elizabeth did so via Market Square. The Square became the focal point for the buying and selling of goods by farmers. At one time a bell was rung daily at market time. Being located in the heart of the settlement, the bell also served as a fire alarm.

Port Elizabeth is one of the largest cities in South Africa and is situated in the Eastern Cape Province, 770 kilometers east of Cape Town. The city has been nicknamed "The Friendly City" and stretches for 16 kilometers along Algoa Bay on the Indian Ocean, and is one of the major seaports in South Africa. It is regarded as the "official" gateway to the scenic Eastern Cape Province and the world renowned Garden Route.

Enough of the history – let's talk about the present. We flew into Port Elizabeth from Johannesburg and stayed in the luxurious Protea Marine Hotel. What a great place to relax and await our tour of the Garden Route.

Port Elizabeth is the perfect complement to many scenic routes, including the tour we took through the Garden Route and Tsitsikamma. This fabulous drive took us to our next destination, Knysna.



Tsitsikamma is called the Garden of the Garden Route and is a khoi word meaning "place of abundant or sparkling water". The region, which sits on a 22-meter high plateau, stretches from the Bloukrans River in the west to the Tsitsikamma River in the east, is bordered on the north by the Tsitsikamma Mountains and on

the south by the Indian Ocean. Even though Tsitsikamma claims the world's highest bungee jump, the 216 meter Bloukrans bungee didn't attract any of our travelers. We were content to walk the bridge and admire the depths of the gorges.

The area is covered in indigenous forest and commercial plantations. Deep make their way down to the sea, creating spectacular waterfalls and deep ravines. The water in the rivers looks dark brown (Coca Cola water) due to its high tannin content leached from the surrounding vegetation. Without knowing this, your first impression is: how can the water be so dirty when the landscape is so beautiful?



Although our day was spent under beautiful sunny skies, the area is known for its high level of rain (1,200 millimeters per year) which ensures the area's renowned lush vegetation.



Of course no bus tour would be complete without a stop at a fantastic hotel for a lovely lunch and a drop-dead view of the Indian Ocean. This is where I experienced Bobotie for the first time and I was hooked. Whenever and wherever we stopped I looked for this first on the menu. Yes, it's the name of a fantastic dish which I could best

describe as a glorified shepherd's pie. Even though we had worried about the food, every meal was fantastic. Mind you, I did question the deep fried worms and they certainly wouldn't be a priority on my menu. The whale-watching during lunch was totally unexpected but much appreciated, and very close to the shore. We took the time to dip our toes into the Indian Ocean; the color was breathtaking.



Through small villages and along narrow dirt roads we finally made our way to our destination, Siyafunda School. One of our buses got lost and the other was too big to drive on the very primitive road, so we unloaded our suitcases full of school

supplies and walked down the hill to the school. Children swarmed and followed us like a parade. They were laughing and dancing, showing how happy they were to see us. The moment was priceless and hard to explain but I do know the hearts of the travelers were warmed.

We partnered with the Collette Foundation to deliver school supplies to many schools in the district. In South Africa, the Collette Foundation supports the Knysna Educational Trust. The purpose of the Trust is to educate pre-school teachers, give the schools running water and provide a nutritious meal each day for each child. The mission of the Trust is to upgrade the overall standard of education for impoverished children, focusing on pre-school level, which will enable the children to go to the next level of education. To accomplish this, even the most basic supplies are required. The Educational Trust supports 29 pre-schools in Knysna township.



The Trust's goal is also to protect children from HIV and physical and mental abuse by providing a safe and positive environment. A lot of the travelers developed an emotional connection with the children, creating lasting memories and inspiring us to make a difference. We gained a greater understanding of everyday life in the area.



To back up – when our trip was still in the planning stages we were fundraising to help support the cost of school supplies, as well as the buses and meeting rooms for the energy portion of our trip. We had great fun organizing the Meet and Greet in Calgary where we held a silent auction with wonderful items donated from a lot of the travelers, as well as from companies that heard about our purpose. Not including the supplies and toys purchased by the individual travelers, we were able to purchase 900 pounds of school supplies for the children.

Not only were we successful in getting much needed school supplies to the children, they each received a lovely toy from each traveler that was fun as well as educational. Their thirst and desire to learn was amazing. During our visit we had a “blow-up” globe so they could see where we had travelled from to visit them.



One of the travelers opened a book and suddenly had 4 or 5 children climbing on her to take a look and listen to her story. Such darling children and wonderful people.



Mark and Cori had brought red T-shirts with “Canada” and a maple leaf stamped on the front for each child.

There were 12 extra suitcases brought to South Africa from Calgary full of supplies for the schools. Once we arrived in Knysna we left the majority of the suitcases at the hotel so Tracey Conlon (our Foundation contact in South Africa) could distribute the supplies to the other schools as well. Collette Foundation, along with others,

strongly supports the Trust and helped us to deliver 500 pounds of school supplies as well as toys brought to South Africa by the very generous travelers on our tour. The balance of 400 pounds of supplies was left behind in Calgary and shipped after we returned from Africa.



It was such a pleasure to meet the Principal and teachers, and to be given a tour of their little school.

The young children with such happy faces proudly stood before us to sing and thank us for the visit. I think every traveler aimed to improve and extend the quality of life for each child while honoring their cultural heritage. We were not allowed to directly give the gifts to the children because they didn't want to teach the children that we were just there for hand-outs, so everything was left in the Principal's office for later distribution.



What a life changing experience it was to spend some time with those children. It was amazing how much they taught us. If you want to know what's going on in the world, just listen to the children, they tell the true story.





Featherbed Nature Reserve

Cori Peever

It was nice to have a bit of a "lay in" this morning (that's what Jason calls sleeping in). We've had some early mornings, so a 9:30 start is a nice change, and it's just a 5 minute bus ride from the Knysna Log-Inn to the Knysna Lagoon where we board the ferry to the reserve.

Knysna Lagoon is formed where the Knysna River meets the Indian Ocean. The estuary opens to the ocean after passing between two large headlands. These are popularly known as "The Heads", and have become infamous due to the loss of boats and fishermen passing through their treacherous and unpredictable waters. Nearby are geological formations known locally as "The Map Stones."

The Knysna Marina was founded in 1910. Oliver, our tour guide, tells us what to expect from our tour and a couple of interesting stories. The first is about how Knysna was named and, according to Oliver, goes something like this: two early visitors to the area were taking in the views and the first, speaking of the wondrous sights before him, said to the second, "Nice, nah?" Although I'm not sure if I fully believe the first story, the second definitely has credibility.

The second story informs us that a very rich gentleman, George Cearn, was 53 when he and his wife Ethel retired to Knysna, and he was in search of a 'project'. Steenbok Island soon captured his imagination, and to the great astonishment of the people of Knysna, as well as his wife, he developed a vision of turning the uninhabited little island into a place where people could live and build their homes, raise their families and retire in idyllic surroundings. He re-named it Leisure Isle, and set about turning his dream into reality.

Connecting Leisure Isle to the mainland and securing its perimeter from the corrosive power of the waves and currents was the first priority. Dantjie Keyter was employed as foreman, and he recruited a labour force of some fifty short-term prisoners from the local jail by paying their fines and making them free men. They were paid half a crown a day and received a hearty meal cooked by Dantjie's wife. They quarried stone for three years, building the causeway, the road foundations and the sea wall that encircled the Island. The causeway is still used today, portions of the fence are still standing and the Cearn family home has been converted to an art gallery.

We reach the Nature Park and walk up to meet 3 large trucks, each pulling 3 covered wagons to take us up to the highest point of the park. Oliver reminds us that we are not in a "game reserve", but a nature park. That doesn't mean there are no animals; it just means that there is more to see than animals. However, there are several species of animals on the peninsula including; leopards, the gray mongoose and the honey badger, to name a few, and over 350 species of birds.



The Blue Crane, the National Bird of South Africa, resides on the island. The Knysna Loerie is also a resident here; it has bright blue back feathers with red and green feathers on the belly and under its wings. I wasn't lucky enough to spot one of these, but did see a Sun



Bird, which is about the size of a hummingbird and is also a nectar feeder. The female I saw had dark feathers, which appeared teal-y green in the sunlight. The male of this species is very brightly colored in shades of blue and green.



Most of the animals that make the Nature Park home are nocturnal and not often seen. Featherbed is actively breeding the Blue Duiker (pronounced Dacker), a small antelope growing to only about 30 centimetres in height, and successfully releasing them into the wild.



The park is also home to the Bush Buck, which is a somewhat larger antelope (about the size of a large goat) and is currently on the endangered list.

On the drive up we stop at the first view point and we can see the whole city across from us, the channel between the heads ahead of us and the lagoon below us. We get out to take in the view and a ton of pictures, then we're back onto the trucks. A couple of minutes later we reach the top. Here we have the choice to do the 2.2 kilometre walk back to the restaurant, or take the truck back down and do a more leisurely walk around the park. I choose to walk back down, so get out of the truck with my walking stick and camera and head down the trail.

The views are amazing everywhere you look and this walk is a feast for your senses; hearing the waves of the Indian Ocean crashing against the rocky shoreline, smelling the jungle plants and flowers all around and feeling the warmth of the sun shining brightly overhead.

The brush-like plants and shrubs in this part of South Africa have been given a collective name of "Fynbos". One in particular, called Bugou, smells like skunk cabbage and has everyone's attention! Fynbos forms part of the Cape floral kingdom, where it accounts for half of the surface area and 80 percent of the plant species.



The walking path is rocky and in some places quite steep, but with every step there is something new to see. There are a couple of optional side trails to explore, The first, called Bushbuck Trail, is a quick trip out to a view point high on the

western head with exceptional views across to the Eastern Head and down into the channel below.



Returning to the main trail, we continue our walk and are happy to see that many of the species of plants and flowers along the route have been identified with markers and information. My favorite was "rooibergpypie" (partly, because of the name), which has bright red, trumpet-like flowers from a single stem.

Our second off-shoot takes us down the 120 steps into "The Caves". Here we get right into a huge bowl and down to the water. Truly beautiful and we're definitely not in a hurry to leave – partly because of the opportunity to explore and partly because the only downside about going *down* into The Caves, is the 120 steps back *up*!

We continue on the path and about 2 kilometres later we emerge from the brush onto an open path along the shoreline.

Samson's Bridge takes us right along the ocean and is truly beautiful.

Before we know it we're back to the ferry dock and restaurant, where we have yet another feast of amazing food waiting for us and the restaurant patio offers some shade from the early afternoon sun. As with every excursion in South Africa, there were so many interesting things to see at the Knysna Lagoon and Featherbed Nature Reserve. If a trip to South Africa is in your future, you'll definitely want to add this stop to your itinerary!

I originally wrote this article on my iPad, the day after the excursion. At that time, of course, there were a few blanks to fill in and no pictures were included, so I'm happy to have an opportunity to review it, add the pictures and bring back all those sensory memories.

Lord knows what I would give to feel the warmth of the South Africa sun, smell the mingled scents of the Fynbos, (yes, even the skunky one!) and hear the ocean crashing against the rocky shoreline right now as I look out my window at the snowflakes falling and the ever-growing icicles dripping off the eaves.



Safari Ostrich Show Farm

Lisa Monague



Oudtshoorn is the largest town in the Klein Karoo valley. It is a large and modern town that relies mostly on tourism, farming and the ever-present ostrich industry for most of its economic activity. Today it is home to the world's largest Ostrich population. The area in which Oudtshoorn is situated (the town regarded as the

capital of the Little Karoo) was originally inhabited by the San people, as evidenced by the many rock paintings that are found in caves throughout the surrounding Swartberg Mountains.

The first European explorers to the area were a trading party led by Ensign Shrijver via an ancient elephant trail in 1689. This group turned back at present day Aberdeen and it wasn't for another 100 years that farmers settled the area.

The first permanent structure of the Klein Karoo was a Dutch Reformed Church erected in 1839 on the banks of the Grobbelaars River on C.P. Rademeyer's farm, Hartebeesrivier. The town grew around this church and was named in honour of the wife of the then magistrate at George, Mrs. Geesje Ernestina Johanna Bergh. She was a granddaughter of Pieter, Baron van Reede Van Oudtshoorn who was appointed Governor of the Cape Colony in 1772 but unfortunately died on the voyage out.

A small one-room school was opened in 1858, followed by the formation of a municipality and the founding of an Agricultural Society in 1859. During the same year work was started on a larger church to replace the original small one.

A crippling drought ensued for 10 years from 1859 and caused serious poverty in the area and across the nation. When the drought broke with the floods of 1869, Oudtshoorn transformed from a struggling rural country village into a town of great prosperity.

Ostriches were highly prized in many cultures including the ancient Egyptians, the Romans, the Welsh, the French and, locally, the Zulus. As a result of hunting by man, they retreated into the dry, harsh deserts and this, combined with natural predation, meant that ostriches became harder to find and the price of feathers rose. Seeing the potential, the entrepreneurial farmers of the Oudtshoorn district pioneered the domestication of ostriches in the 1850's.

The ostriches were farmed in large fenced-off areas and began breeding. By 1865 the size of the feather crop had increased. A high mortality rate amongst the chicks because of predators, illness and injury made this new form of farming very hazardous.

This all changed in 1869 with the invention of the ostrich egg incubator, by Arthur Douglass, which reduced many of the hazards and increased production.

Mr. Scholtz, the magistrate at Oudtshoorn, first introduced lucerne to South Africa by importing the seed and planting a small plot to feed his ostriches. The birds thrived on this diet and

all the farmers started planting lucerne. The number of breeding birds rose from only 80 in 1865 to well over 20,000 by 1875. A boom started in 1875.

With so many ostrich farmers the supply of feathers grew and there was a drop in the price. The best quality feathers were still commanding high prices. By this time the ostrich feather industry had become a significant factor in the South African economy. It was the country's fourth largest export after gold, diamonds and wool.

The slight recession did not last long and the outlook improved, then accelerated into a full-scale boom. The first of the famous "Feather" palaces of Oudtshoorn were constructed during this time and because there were now so many ostriches, the laws preventing their slaughter were repealed.



The industry continued to thrive through the Anglo-Boer War (1899 – 1902) and the decade that followed. The first indication of problems came in 1911 with signs of overproduction and increasing competition, especially from California. The South African ostrich

breeders realized that the only way they could continue to dominate the world market was to produce the best feathers in the world. This led to the fascinating hunt for and expedition to north Africa for the Barbary Ostrich. The expedition returned with 141 birds which became the nucleus of South Africa's feather industry and crossbreeding with the Barbary Ostrich produced the double fluff quality feathers.

During the three decades leading up to World War I, many Jews emigrated from Lithuania to Oudtshoorn, catching the height of the ostrich-feather boom and bringing with them hard work and entrepreneurship. They established good relations with the Afrikaans-speaking farmers, and opened trading and farming businesses. Amongst the early emigrants was Max Rose, who arrived in 1890 and after ten years became the unrivalled feather baron in the whole of South Africa. The community with its culture and orthodox traditions flourished and became known as the "little Jerusalem of Africa". At its height, it was among the largest Jewish centers in South Africa, with an estimated 600 families. They had two synagogues for worship, one of which is still in regular use. In 1914, when the feather industry slumped many Jewish families left Oudtshoorn after losing their livelihood.

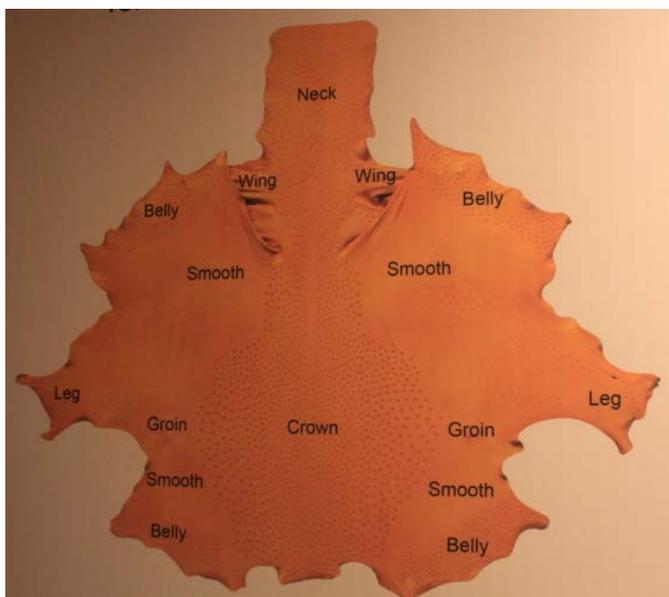
In 1914 the bottom dropped out of the feather market and farmers who had been millionaires one day found themselves poverty stricken the next. A popular reason given for the collapse is that ostrich feather hats were no longer practical due to the growing popularity of motor cars, but there were other factors involved – notably the outbreak of World War I (1914 - 1918). At the end of the war there were still 314,000 domesticated ostriches left in South Africa but by 1930 this number had declined to only 32,000.

In the Oudtshoorn district there were only 2,000 ostriches left by 1940. Thousands of birds had been slaughtered for their skins, which could now be successfully treated. In the short-term skins were providing the farmers with more income than feathers and good breeding stock was becoming scarce.

After World War II (1939 - 1945) the ostrich trade slowly recovered and expanded from feathers to include skins and a brand new source of income: tourism.

In the last decade, previously cheap ostrich meat has steadily increased in price because of increasing consumption in the First World as a result of its extremely low fat content and similarity to beef. Most of the meat exported is fillet but locally it comes in all sorts of forms, with wors (sausage) and biltong (dried and spiced meat) being among the favourites.

Almost every part of the ostrich is now utilized and ostrich leather is very popular in all sorts of fashion items including shoes, clothes, handbags and, most recently, ostrich leather jewelry.



Safari Ostrich Farm

The Safari Ostrich Show Farm is situated in the heart of "Ostrich Country", 6 kilometers from Oudtshoorn. It has been in operation since 1956. This is the only show farm in the country where Kenyan Red and Zimbabwe Blue ostriches can be seen alongside South Africa's own indigenous variety. The Safari was established by Derek Fisch and Harry Lipschitz, both fourth-generation ostrich farmers, and currently is owned and operated by descendants of this Jewish family.

Ostriches can live up to 60 years. The darker coloured males will typically sit on the eggs during the night while the pale coloured females will sit on them during the day. The ostrich's brain is smaller than its eye and would scarcely fill a teaspoon and yet they have the largest eyes of any mammal. They have very acute eyesight and hearing, and can sense predators from from far away.



A common myth is that ostriches put their heads in the sand; this is not true but they do rest their necks on the ground to replicate a mound of dirt to ward off any predators and they will also do this while lying down in the nest. During the mating season males can be heard roaring like lions and will do a rather bizarre fandango (dance) in front of the females. They also become very territorial and will fight other males for a harem of two to seven females.

With their very long legs, ostriches can reach speeds up to 70 kilometers per hour, the fastest land speed of any bird. Ostriches can attack humans but more often will simply run away. They will kick forward with their powerful feet, armed with long claws which are capable of disemboweling or killing a person with a single blow. If you are being chased by an ostrich your best bet is to lie down on the ground as it cannot kick that low.

These days the market composition of the ostriches is not so much on the feathers as it was previously, it is now predominantly bred for the meat, butchered from the knee to the thigh, consisting mainly of steaks; 55% of the ostrich is butchered for the meat, 40% for the leather and 5% for the feathers, which are primarily exported to Rio De Janiero.

After a tour of one of the oldest working ostrich farms some of the group were able to take pictures with these magnificent birds and some went on a ride of their life. It was hilarious.

After our very informative and fun guided tour we were treated to an outdoor ostrich barbecue, which only added to this amazing day.





Cheetah Outreach Centre

Lucy Mulgrew

On October 16 our group was treated to an unexpected visit to the Cheetah Outreach Center before we headed out to tour the city of Stellenbosch.

Founder Annie Beckhelling launched the project in 1997 with a hectare of land provided by Spier Wine Estates in Stellenbosch. Cheetah Outreach then set out to introduce the cheetah to the South African community. Educational efforts began with two cheetahs: Shadow, a one-year-old male, capable of traveling to community events, and Inca, a six-year-old male, whose role was to greet Spier visitors.

It was great to see local students coming to learn about these animals. We were able to interact with the students and hand out our Canadian flag pins to them. The teachers said this was their lucky day, but we felt it was ours.



In the first year Cheetah Outreach and Shadow visited more than 50,000 people by traveling to educational facilities, community clubs, hotels, malls, and various public events. At Spier, with an average annual visitorship of 350,000 people, Inca was able to greet more than 10 percent of the guests touring the lovely estate.

The facility is continually evolving and growing and they are taking on more challenges than ever before. They are actively involved in cub rearing and in the Anatolian Shepherd guard dog program in South Africa.



The cheetah's small streamlined head; long, light limbs; powerful hind legs flexible shoulders and spine; long muscular tail; semi-retractable claws; enlarged liver and heart; and wide nostrils and increased lung capacity all combine to make it the fastest mammalian sprinter on earth. Covering up to 9 metres in a stride at almost 4 strides per second, the cheetah can reach a speed of 110 kilometers per hour more. For more than half the stride the cheetah is airborne.

Once found throughout Africa, the Middle East and central Asia, the species is now found only in various countries in Africa, with a small population left in Iran.

The cheetah's social system of solitary females and social males is unique among cats. Females raise cubs on their own, teaching them survival skills: how to hunt wild prey and avoid other predators such as lions, leopards and hyenas. At around 18 months the mother leaves the cubs, who then form a sibling group which can stay together for up to 6 months. By 2 years the female siblings have left the group to establish their own home ranges, but male siblings often remain together for life. Coalitions of 2 to 5 brothers, and sometimes unrelated males, are formed to better acquire and defend territories. Cheetahs do not pose a threat to humans.

Loss of habitat, decline in prey, poaching, persecution by livestock farmers, and competition with other large predators in protected areas threaten the survival of the cheetah throughout its range.

As a protected species in southern Africa, people are allowed to remove cheetahs only if they pose a threat to livestock or human life. Unfortunately, some farmers capture cheetahs indiscriminately, often removing or killing those that have not taken any livestock. Limited international trade in live animals and skins is permitted from Namibia, Zimbabwe, and Botswana. Illegal trade in other parts of Africa and indiscriminate capture and removal in southern Africa continue to threaten the survival of this species.

To help the cheetah win its race against extinction, we must:

- help protect its habitat and insure a place for it on African farmlands
- aid in the conservation of its wild prey base
- halt the capture and removal of cheetahs from the wild
- improve livestock management
- educate everyone about the need to conserve biological diversity and the predator's role in a healthy ecosystem.

The capture of wild cheetahs threatens the survival of the species in two ways. First, the removal of individuals reduces the species' genetic diversity in the wild. And secondly, cheetahs do not breed well in captivity. The Asian cheetah is nearly extinct because of its' capture for private use. Special dietary requirements, special needs, and unpredictable behavior make this a poor pet. Wild instincts remain intact even with tamed and captive-raised animals.



Stellenbosch City Tour

Lisa Monague

On October 16 we set out on a walking tour of downtown Stellenbosch, one of the oldest European settlements in the region. It was founded in 1679 during the period of control of the Dutch East Indian Company. It is situated 111 meters above sea level on the banks of the upper reaches of the Eerste River, which flows out of the mountains and into a shallow, alluvial and fertile valley.



Stellenbosch has become known as “the town of oaks” as they are abundant in the area. Some have been proclaimed as national monuments; however, oaks trees were not indigenous to this region. When Governor Simon van der Stel first visited the area in November 1679 he was much taken by its beauty. The name Stellenbosch (‘Van der Stel’s bush’) was given to the site of the governor’s camp and by the following year the first settlers had arrived from Cape Town. The Governor was a wine maker and attempted to start a wine market. He had oak tress imported and planed in Stellenbosch but things didn’t go as planned; they grew too fast and the wood was too porous, making them unusable for oak barrels. Barrels were eventually imported from France.

Soon after the first settlers arrived, grapes were planted in the fertile valleys around Stellenbosch and so became the centre of the South African wine industry. The first school had been opened in 1683 but education in the town began in earnest in 1859 with the opening of a seminary for the Dutch Reformed Church. The Stellenbosch Gymnasium was established in 1866. In 1874 some higher classes became Victoria College and then in 1918 University of Stellenbosch.

In the early days of the Second Boer War (1899-1902) Stellenbosch was one of the British military bases and was used as a ‘remount’ camp. Officers who did not distinguish themselves at the front were sent back to it, and the expression ‘to be Stellenbosched’ came into use. In similar cases officers were spoken of as ‘Stellenbosched’ even if they were sent to some other place.

In 1710, only 30 years after its establishment, a devastating fire destroyed much of Stellenbosch. Further disaster struck in 1803 and in 1875, both fires destroying many of the historical homes of the village once again.

In the 1800’s Cape wines became popular during the war between France and Britain, but the market collapsed soon after the war ended due to France re-establishing its wine industry in the 1900’s.

Through the turn of the 19th century into the early 20th century, German and Italian settlers flocked to the Cape, adding their own expertise and traditions of wine making to the growing wine industry in the wine lands of South Africa. In the 1970s Stellenbosch wineries developed the Stellenbosch Wine Route to attract tourists and wine lovers to wine tasting venues on their estates, although this was limited by South Africa’s international isolation. With the advent of a democratic South Africa in 1994 the tourism market began expanding with wine tourism becoming increasingly popular.

It was only in 1997, when the wine industry was deregulated, that the modern South African Wine industry came into its own and entered into the International arena, its wines competing quite successfully in the global market. At this time, with South Africa’s reintegration in the global village, the Wine Route of Stellenbosch came of age and began to be acclaimed worldwide.

The original Stellenbosch Wine Route was established in 1971, also known as the Stellenbosch American Express Wine Route, and is undoubtedly one of the most popular attractions in the Western Cape. Not only has the Stellenbosch American Express Wine Route promoted the wineries in the Stellenbosch area, but more than 200 wine and grape producers, for over 30 years. Most of the wineries on the Stellenbosch Wine Route have restaurants or picnic facilities available, and with the exception of a few, offer wine tasting without appointment.

The tour group visited and shopped, looking for great historic deals. Some were able to enjoy a relaxing lunch on a street restaurant.



Spier Hotel Wine Pairing Dinner

Lisa Monague



After a busy day touring Stellenbosch, our group spent a leisurely afternoon relaxing and soaking in the beauty of the Spier Hotel. Some of the group enjoyed the amazing spa and others got an early start on tasting the wines.



One of the oldest wine farms in South Africa, Spier has been noted for other factors aside from its wine production because being sited in Stellenbosch gives it a special position as a potential producer of quality wines. This is now coming into fruition, but it has not been an easy road. The land near to the Spier wine farm has been settled since the beginning of time. In the 1670s it became home to a number of settlers, who quarreled about the ownership of the land and the water rights for the area. Due to these quarrels, modern historians know more about the history of Spier than most of the wine farms in South Africa.

The records are clear that the owner of the land was Arnoud Jansz, a soldier from Germany who was working under the Dutch East India Company. It was not unusual for soldiers leaving the Company to be given small parcels of land, similar to a pension. It was Jansz who introduced vines into the area, planting around 200 in a vineyard, as well as keeping the traditional sheep and cattle. The first wine was produced by the estate in 1700. By 1712 it had been purchased by Hans Hattingh. Some think the farm was named Spier by him, but it seems likely the name was already in use, and was describing a marshy land with plenty of bulrushes, and that Spier derives from this name. However it originated, when Hattingh took over the land the estate was growing around 12,000 vines, mostly of the Muscat variety.

The wine farm exchanged hands a number of times over the next half-century, at one point being owned by Albertus Myburgh who would own the Meerlust estate next door. It was Myburgh who installed the wine cellar in 1767. The farm was owned by the Van der Byl family until 1918, and then it changed hands again several times. Finally, in 1965, it was bought by Niel Joubert, the first vineyard owner to introduce bottling in his own cellar. This first vintage, in 1971, produced only 10,000 bottles. Joubert sold the farm in 1993 to Dick Enthoven, who began a project to improve the state of the farm. The buildings and vineyards were all updated.

In 1995 a new wine cellar was built with a capacity to produce 50,000 cases of wine per year. The Spier Hotel officially opened its doors in 2000 with 155 rooms, and is rated as a 4-star hotel. The hotel rooms are nestled around six courtyards, each

of which features an outdoor swimming pool. The design of the courtyards and buildings at Spier reminds one of Mediterranean villages. In 2009 Eight restaurant opened and, like its name, the restaurant is an expression of balance, cycles, harmony, infinity and abundance. The hotel borders the calming Eerste River and was one of the first hotels in South Africa to have received the 'Fair Trade in Tourism SA accreditation' in 2004 due to its efforts in responsible tourism. Besides some other awards, Stellenbosch's Spier Hotel has also won Gold at the "Virgin Holidays Partners in Sustainability" award.

In 2011 a new wine tasting room was opened and signature wines can be sampled or purchased, including its flagship wine, Frans K Smit, which was released in 2008 and named after the wine cellar master himself. In addition to the new wine tasting room, Spier also released 21 Gables Chenin Blanc and Pinotage, named after the 21 historical gables found on the farm. Pinotage is a cross between Pinot Noir and Cinsault or Hermitage grapes, and quickly became a favourite among some of our Desk and Derrick travellers. We were treated to a wine pairing dinner where we tasted these treasured wines.



In 2012 "The Dying Slave" a 42.6 square meter outdoor mosaic sculpture created by the Spier Architectural Arts and conceived by Marco Cianfanelli was installed on the grounds at the Spier Wine Farm; a poignant monument to the history of slave labour on the Cape wine farms.

The Spier Wine Farm has been recognized by various external organizations, including Fair Trade in Tourism (FTTSA) and the Wine Industry Ethical Trade Association (WIETA). The cellar has ISO 22000 certification and is Fair Trade accredited.

The group totally enjoyed this day as they indulged in a laid-back atmosphere and reconnected with each other.



Koeberg Power Station

Kathi DesChene



Over 90 per cent of South Africa's power is produced by coal-fired power plants. Supplies are tight as the country's only electricity supplier, Eskom, tries to meet fast-rising demands from users, including the world's top producer of platinum and a major gold miner. As Africa's biggest economy, it is investing in nuclear power to boost supplies and reduce its heavy carbon footprint. Koeberg, 30 kilometers north of Cape Town, the only commercial nuclear power station in the entire African continent, began production in 1984.

As part of their International Energy Excursion, several members of the Alberta Foothills Desk and Derrick Club, along with other ADDC members and friends, visited the Koeberg nuclear power station on October 17, 2013. They were met by Marina Jenkins, Eskom Holdings SOC Ltd., Acting Manager of the Visitor Centre, who introduced them to Lewis Phidza, Stakeholder Management Manager of the Koeberg Operating Unit.

From the presentation and tour at the Visitor Center, they learned that the only purpose of a nuclear power plant such as Koeberg is to produce electricity. Koeberg contains two uranium pressurized water reactors rated at 1,800 MW. Its average annual production is 13,668 GWh. The reactors are cooled by cold water from the Atlantic Ocean pumped through an isolated circuit at 80 tons a second. Low and intermediate level waste from Koeberg is transported by road in steel and concrete containers to a rural disposal site 600 kilometers away in the Kalahari Desert.

The grounds of the plant form a 22 square kilometer nature reserve open to the public, containing more than 150 species of birds and half a dozen small mammal species.

To produce electricity, a power plant needs a source of heat to boil water which then becomes steam. The steam turns a turbine, the turbine turns a generator and the electrical generator uses the rotational energy to produce electricity. In the case of fossil-fuel energy plants, the heat comes from burning coal, oil, or gas. In a nuclear plant the heat comes from the splitting of atoms of uranium, a process known as fission.

This reactor uses uranium rods as fuel. When a source of neutrons is introduced, they collide with the uranium atoms in the rods. The uranium atoms are split roughly in half and release energy in the form of heat, the fission process.

The reactor is controlled with control rods made of boron, which absorb neutrons. When the rods are lowered into the reactor, they absorb more neutrons and the fission process slows down. To generate more power, the rods are raised and more neutrons can collide with uranium atoms. Some nuclear plants use carbon dioxide to cool the reactor, heat water and make steam. Because of Koeberg's proximity to the sea, water is used instead, in three separate processes.

Koeberg has operated safely for more than 20 years and has recently undergone a successful peer review by the World Association of Nuclear Operations. The power station is intended to have a further active life of 30 to 40 years.

South Africa's fledgling nuclear industry has seen its fair share of opposition, chiefly from environmentalists concerned about safety issues such as radioactive waste, and anti-war activists concerned with nuclear proliferation and use of atomic weapons.

A power supply crisis (shortage of electricity) in 2008 shut mines for days and cost South Africa billions of dollars in lost output. Standard fossil fuelled power stations were deemed too small and transporting coal to the existing or new fossil-fuel power stations and meeting new regulations (including 300 meter tall chimneys), too expensive.

However, South Africa is forging ahead on its energy plan. Newly designed coal-fired plants are being built, but to fund these projects power tariffs rose steeply, hurting consumers and squeezing the profits of power-intensive mines and other industries.

Nuclear power was deemed more economical. South Africa is planning to build six new nuclear facilities. First power from these plants, which are slated to provide a total of 9,600 megawatts of power (MW) or about a quarter of the current supply, will be produced by 2024 or 2025.

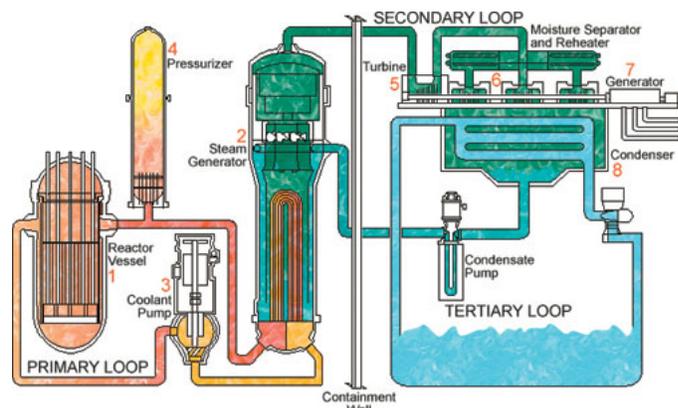




Table Mountain and Milnerton Lighthouse

Jan Osborne (guest of Kathi DesChene)

History

Cape Town is the second-most populous city in South Africa. Located on the shore of Table Bay, there is no certainty as to when humans first occupied the area. Known records report the first visits of Europeans in the fifteenth century. The area was mentioned by Portuguese explorer Bartolomeu Dias in 1486. In the late 16th century, Portuguese, French, Danish, Dutch and English ships regularly stopped over en route to the Indies. They traded tobacco, copper and iron in exchange for fresh meat. In 1652, Jan van Riebeeck of the Dutch East India Company was sent to the Cape to establish a way-station for ships travelling to the Dutch East Indies. The settlement grew slowly during this period, as it was hard to find adequate labour. This labour shortage prompted the authorities to import slaves from Indonesia and Madagascar. Many of these became ancestors of the first Cape coloured communities.

During this time an impressive range of useful plants were introduced to the Cape including grapes, cereals, ground nuts, potatoes, apples and citrus, changing the natural environment forever.

During the French Revolutionary and Napoleonic wars Britain captured Cape Town but it was returned to the Netherlands by treaty in 1803. British forces occupied the Cape again in 1806 following the battle of Bloubergstrand. In the Anglo-Dutch Treaty of 1814, Cape Town was permanently ceded to Britain. It became the capital of the newly formed Cape Colony.

The discovery of diamonds in 1867, and the Witwatersrand Gold Rush in 1886, prompted a flood of immigrants to South Africa. Conflicts between the Boer republics in the interior and the British colonial government resulted in the Second Boer War of 1899 – 1902, which Britain won. In 1910 Britain established the Union of South Africa, which unified the Cape Colony with the two defeated Boer Republics and the British colony of Natal. Cape Town became the legislative capital of the Union, and later of the Republic of South Africa.

In the 1948 national elections, the National Party won on a platform of apartheid (racial segregation). This led to the Group Areas Act, which classified all areas according to race. The formerly multi-racial suburbs of Cape Town were either purged of unlawful residents or demolished. The most infamous example of this in Cape Town was District Six. After it was declared a whites-only region in 1965, all housing there was demolished and over 60,000 residents were forcibly removed.

Cape Town was home to many leaders of the anti-apartheid movement. On Robben Island, a former penitentiary island 10 kilometres from the city, many famous political prisoners were held for years. In one of the most famous moments marking the end of apartheid, Nelson Mandela made his first public speech in decades on February 11, 1990 from the balcony of Cape Town City Hall, hours after being released. His speech heralded the beginning of a new era for the country, and the first democratic election was held four years later.

Nobel Square in the Victoria and Alfred Waterfront features statues of South Africa's four Nobel Peace Prize winners: Albert Luthuli, Desmond Tutu, F. W. de Klerk and Nelson Mandela. Since 1994 the economy has surged to unprecedented levels due to the boom in the tourism and real estate industries.



My first view of Table Mountain was from the bus, on the way to Cape Town. I understand that we were very lucky because it is usually covered in clouds. It is certainly aptly named, as it does look like a table



We took the cable car to the top, a ride of approximately one kilometer. It was surprisingly cold at the top, about 4 degrees Centigrade. The leopard-spotted micro fleece top I wore was warmer than most things I took to Africa, but still not warm enough. (I'll bet everyone remembers that top because I wore it the whole time we were in Cape Town). It was colder than I expected even at sea level. I

sure wished I had some warmer clothes, but after Kruger the day before – 42 degrees – who would have guessed?



A view of the docks from Table Mountain

Next we visited Milnerton Lighthouse, stopping along the way to see the penguins. I didn't expect penguins in South Africa but these little fellows appeared to be quite happy and healthy.





The Lighthouse was commissioned in 1960 and is located on the shore of Table Bay in the suburb of Milnerton. It stands guard over one of the most famous views in South Africa, with the panorama of Table Mountain and Table Bay in the foreground. This small stretch of coastline from Green Point to Milnerton has wrecked more ships than any other coastline in South Africa.

Again there were great views but it was too cold and windy to stay out very long.

After we checked into our hotel we were on our own, and a group of us went to the Victoria and Albert Waterfront for dinner and shopping. There were some really nice stores in that area. I remember quite a few craft vendors who had unusual South African crafts, many of which returned with us.





Cape Point

Daphne Bennett



Cape Point falls within the Cape Floral Region, a World Heritage Site, and is the most southerly point within the Good Hope section of Table Mountain National Park. The Cape Floral Region is one of the richest areas for plants in the world – it is home to nearly 20 percent of Africa's flora.

Apart from the spectacular view, you'll be able to see the most powerful lighthouse on the South African coast, which helps guide ships safely through perilous waters that have seen to the end of many a vessel. Historical Cape of Good Hope was a dangerous passage for the early sea explorers.

Magical Cape Point is the meeting place of the cold and warm ocean currents. There are many impressive views over the vast Atlantic Ocean from the lighthouse on the edge of the most south western tip of Africa. On a clear day you can see the tip of Antarctica from this viewpoint.

Not only the destination, but even the journey to this place is simply awesome. I took so many pictures on this part of our journey. The bus ride from Cape Town to Cape Point was among the most scenic routes I have even taken.

When we reached the base of Cape Point we had the option of either walking up to the light house or taking the 5 minute tram ride. I chose to walk up the many stairs and windy corners to witness more breathtaking views. It was one of the highlights for me on the trip. The scene from the top is unbelievable. It is here where two mighty oceans meeting each other create a mind numbing spectacle of beauty. You could spend hours sitting on one of the cement benches and staring into nothingness. No matter how hard I try, I will never be able to recreate this beauty and experience.



Our next stop was Boulders Beach, a popular tourist destination because of a colony of African Penguins which settled there in 1982. Since then the colony has grown rapidly – by 1997 there were 2,350 adult birds. Such quick growth of the colony was the result of immigration, particularly from Dyer Island, as well as by reproduction. Birds have probably come here because of the good fishing available, since commercial purse seine fishing has been banned in this location. Although Simon's Town is very proud of its penguins, nearby residents suffered badly as the birds invaded their gardens, destroyed the undergrowth and were generally very noisy and messy. The great increase in tourists has also been a problem. As a result, the area has now been taken over by Cape Peninsula



National Park. The birds have been restrained from wandering inland by a fence, and board walks and an information room have been established. Boulders still remains the only place in the world where one can actually swim among the penguins, as they have continued to invade more beaches. They are remarkably untroubled by people but one should avoid harassing them by getting too close or chasing them. They are very photogenic but they have a vicious bite.

Penguins are flightless, aquatic birds that live in the southern oceans in climates as varied as Antarctica and the Galapagos Islands on the equator. There are 17 species in all but the African Penguin is the only one to inhabit the African continent and its in-shore islands. It used to be known as the Jackass Penguin on account of the braying sounds it makes on land, but the name African Penguin has now been adopted to distinguish it from the Jackass Penguin found in South America, which is slightly different in appearance and behavior. Another name that is occasionally used is the Blackfooted Penguin. The closest relatives of the African penguin are the Humboldt and Magellanic penguins of South America and the Galapagos penguins of the Galapagos Islands off the coast of Ecuador. Penguins are ancient birds, probably evolving about 65 million years ago, at the time that dinosaurs became extinct. Since penguins are well adapted to the cold, the South American and African penguins feel the heat on land and have evolved various ways to cope with the sun. African penguins have a black stripe curving across the top of the chest. They are insulated by air trapped between their feathers. This makes the birds extremely vulnerable when they are molting, which they do annually, and for this period of about three weeks (at Boulders about November) they are land-bound, getting thinner and more bedraggled until the molting process is completed. Before molting they eat hugely and put on about 30 per cent more fat. Although the African Penguins are quaintly clumsy on land and ungraceful emerging from the water, in the sea they are extremely skilful swimmers, reputedly reaching speeds of 24 kilometers per hour. Rather than using their feet to swim, as many aquatic birds do, they use their wings that have been modified to form extremely efficient flippers. Their webbed feet are used mainly when swimming on the surface of the water. Their feathers have become very small and waterproofed, overlapping to provide better insulation. The African and South American penguins have shorter feathers than the Antarctic birds, since they do not face such great cold. Penguins also have heavier bones than most birds to enable them to dive. African Penguins live an average of 10 to 11 years but sometimes reach as much as 24 years.

The weather was wonderful, the scenery spectacular, and the group had a very entertaining day. Thanks to our guides who did a fabulous job and made this trip absolutely fantastic.



Robben Island, Gold of Africa Museum, Farewell Dinner

Daphne Bennett



In 1997 Robben Island was turned into a museum and in 1999 it was declared a UNESCO World Heritage Site. Robben Island has become an extremely important symbol in the new South Africa, reflecting the triumph of good over evil, of democracy over apartheid. Robben Island was a penal colony for more than 400 years. It has also been a leper colony, army base and naval base, and served as a pantry for new colonizers who were afraid of the local Khoikhoi people who lived on the mainland.



Nelson Mandela spent 27 years in prison, initially on Robben Island. He was isolated and imprisoned in a damp concrete cell measuring eight feet by seven feet, with a straw mat on which to sleep. He spent many days breaking rocks into gravel, and then was re-assigned to work in a lime quarry. Prisoners were forbidden to wear eye protection, and Mandela's eyesight was permanently damaged.

He worked on a degree at night, but newspapers were forbidden, and he was locked in solitary confinement on several occasions for trying to further his education. He was classified as the lowest grade of prisoner, Class D, only permitting him one visit and one letter every six months, and all his mail was heavily censored.

Interesting facts from the bus tour:

- The first political prisoners arrived on Robben Island in the 1960's and were considered to be much more dangerous than the convicts that were already on the island. Political prisoners were considered criminals and some were given indefinite sentences.
- Black wardens were quickly removed from their jobs soon after the arrival of the political prisoners because it was feared they would be sympathetic to their cause.
- Political prisoners were breaking rocks while murderers and rapists were sewing clothes and doing laundry. Prisoners built most of the barracks themselves, the political prisoners were given menial manual labor tasks, while the convicts were taught stone masonry, electrical work and other jobs that would be useful to them once they were freed.
- Political prisoners were initially allowed one visit every six months. They had to speak either English or Afrikaans so the guards could understand every word that was spoken.
- Robben Island prisoners were black, colored or of Indian descent. South Africa kept its white political prisoners elsewhere.
- Political prisoners could not receive visits from anyone younger than 16 years, so many prisoners never saw their children grow up.

- Robben Island was a leper colony from 1844 to the early 1900's. It is estimated there are 1,500 lepers buried there.
- Penguins were reintroduced on the island in 1983 (they'd been hunted to extinction) and there is now a healthy population of around 60,000, along with lots of rabbits, which are proving to be quite the pests.
- There's a lovely little Anglican church on the island, which was built for use by the wardens and their families and is now a non-denominational church. There's also a primary school with 16 current students, who are the children of the people that work for the Museum and live on the island. Among the museum employees are some ex-political prisoners, now living in the houses previously occupied by wardens.
- In 2004 a ten-year-old boy from India became the youngest person to swim the 12 kilometers from Robben Island to Cape Town. The Atlantic Ocean here is absolutely freezing and the boy swam without a wet suit. The ocean is also infested with sharks.
- The first prisoner on the island to swim to freedom was a Dutchman by the name of Jan Rykman, who made the treacherous dash in 1640.
- More than 3,000 political prisoners were held in this maximum security prison from 1960 to 1991.



One of our guides on the tour was an ex-political prisoner, giving us the opportunity to hear a first-hand account of prison life on Robben Island. He was involved in the Student Protests in Soweto during the 1970's and imprisoned in 1978. He was one of the last men to leave the prison when it closed its doors in 1991. I asked him if he felt somewhat comforted, once he was sentenced, by the fact that Mandela and others were already on the island. He said it made a small difference but Robben Island had a reputation of being the worst prison in the country. He mentioned that the wardens at his trial had laughed and said "now you'll pay for what you've done" when they found out where he was being sent to. So he was naturally apprehensive about Robben Island.

The tour starts at the entrance of the prison where the men were processed, given a set of prison clothes (shorts for black men, long trousers for Indians), and sent to their single cell or barrack. The offices of the prison include a prison "court" and a censorship office where every letter that came in to and went out of prison was read. Our Guide explained that he used to write letters home with as much slang as possible so the censors couldn't understand what was written. When Mandela first arrived in prison, letters could only be written in Afrikaans or English.



We were shown several communal prison cells. They put 52 men in one room and during the 1970's floor mats were replaced with hard bunk beds. In one of the communal blocks they've kept an original sign which lays out the prisoners' daily menu. Different food portions were allotted to prisoners based on their skin color. One menu is laid out for "Bantu" and the other for "Coloureds / Asians" – it is Apartheid at its starkest.

6. DIFFERENCES BETWEEN B AND C DIETS:

B - Coloureds/Asiatics	C - Bantus
Mealie meal 6oz - breakfast	Mealie meal 12oz:
Bread: 4oz lunch & 4oz supper	Breakfast - 6oz
Fat: 1oz daily per person	Supper - 6oz
Mealie rice or sukQ	Puzamandla - lunch
Meat: 6oz per person	Fat 1oz per person daily
Jam/syrup: 1oz per person daily	Mealies
Sugar: 2oz	Meat 5oz per person
Coffee: breakfast - 1oz	No jam/syrup
Supper 2oz	Sugar 1oz
	Coffee: breakfast 1oz

Communication between the communal cells was strictly forbidden. Prisoners used ingenious methods to communicate with one another but messages could take a week to travel between sections. Our guide said (with a smile) that the younger prisoners would take advantage of the slow communication and go on hunger strikes before the others would have time to disagree with their actions. Because every action taken by the prisoners was unified, the older generation had no choice but to join their younger brethren. It is this type of insight into prison life that you can really only get from a person who has lived through this. Our guide's honesty was astonishing; there was no embellishment, just the truth.



There are some single cells as well as the communal cells. We saw a cell in which Mandela spent a lot of time. Our guide explained that prisoners were often rotated through these cells for security reasons. By the time Mandela left his single cell he had accumulated a few books, a desk and a bed in addition to the thick, itchy blanket the prisoners were allocated when they first arrived.

The tour also includes a visit to the courtyard where Mandela tended a small garden. This is where he started writing his autobiography "Long Walk to Freedom". At the beginning of Mandela's imprisonment the courtyard was a place for hard labor and there were many pictures documenting this.

I asked our guide how he felt when he returned to the island. He said the first few days were almost unbearable and that he'd underestimated how emotional it would be. He has now been guiding tours for two years. He was actively recruited by the Museum and he chose not to live on the island like some of the other ex-political prisoners and employees of the Museum do. He said it felt too good to be able to leave the Island every day, and I agree with him. We were only there for half a day and I could feel sadness everywhere.

The Gold Museum



The Gold Museum is located in Martin Melck House, which was constructed in 1783 as the parsonage for the adjacent Evangelical Lutheran Church and named after wealthy businessman and church benefactor Martin Melck of

Elsenburg. The building was restored in 2000 and is now admired by many as one of the finest remaining examples of old Cape Town domestic architecture. It's beginnings coincided with the rise of the Akan kingdoms, from which many of the artefacts now housed in the museum originated.



The Gold of Africa Museum showcases the ancient relationship that exists between gold and the African continent in the form of 350 West African gold artefacts and objects from ancient gold-based civilisations.

Farewell Dinner

The Farewell Gathering was hosted in the Xamka Restaurant, located in the courtyard of the Gold Museum. Xamka, meaning "lions", is a word from one of the most ancient human tongues, the language of the Khoisan people who have lived in southern Africa for 60 000 years. Xamka's menu consists of many local South African dishes along with traditional delicacies from the African continent. It was truly an amazing meal with outstanding performances representing local African culture.



Zambezi River Cruise

Nancy Pawluk (guest of Joanie Jarvis)



Early in the morning on October 19, 2013 our group boarded buses and were on the road again to visit Botswana, home to an abundance of wildlife. The sun was shining and the sky was oh so blue!

We arrived at Chobe Marina Lodge after driving through the small picturesque town of Kasane. The lodge is uniquely located in the northeast corner of Botswana where the four African nations of Botswana, Zimbabwe, Zambia and Namibia meet. The lodge is surrounded by the natural beauty of Africa.



After our morning safari at Chobe National Park we had a delicious meal on the deck overlooking the Rivers, and then sauntered down to the dock to board a flat bottom boat for our afternoon cruise on the Zambezi River. This is the fourth largest river in Africa and the largest flowing into the Indian Ocean. It is named the "great river" in the local Tonga dialect. The Zambezi's most noted feature is Victoria Falls.

The Zambezi meets the Chobe River and briefly forms a border between Zimbabwe and Zambia. The river flows through six countries and is 2,700 kilometers long. The river evokes mystery and excitement; few rivers in the world remain as pristine or as unexplored.



Our first sighting was a crocodile circling slowly around a dead hippo in the water. He would move in on the carcass and then dive under to take a bite or check out the meat. The scratch mark on the back of the dead hippo was a result of fighting . . . maybe with said victorious crocodile?

We were now on the Zambezi and circling around a small island where we could see the wildlife up close. A Cape Buffalo on shore seemed to be giving us the "evil eye." Cape Buffalo have exceptional memories and have been known to attack or ambush people that have harmed or injured them in the past, even years after the event. The Cape Buffalo has never been domesticated and is considered one of the "Big Five." The Cape Buffalo is also known as "the black death" or "widow maker" as it gores its victims and kills over 200 people every year. They are a very robust species and a male can weigh over 1,000 kilograms. Mud wallowing is a favourite pastime and good for their skin to remove unwanted ticks or mites. An elephant never forgets, but a buffalo never forgives.



We spotted hippos having a group bath with the younger ones in the middle, and then a lone hippo in the water. We all waited for him to give a signature yawn. Wait for it, wait for it – and he did! Yeah! We also saw on the island hippos and some of their feathered friends who tag along for food and a ride.



This area has the highest population of elephants in Africa during the dry season, and we saw hundreds. The Chobe River is home to over 50,000 elephants. It is part of an ancient elephant migration route where they are protected from neighbouring countries, civil unrest and poaching.



The landscape on the river bank was dry and the soil looked red and sandy. We spotted a large kudu strutting along – note the white stripes on his back.

As we rounded the last curve of the island we could see smoke in the distance from Namibia, where farmers were burning off the field. Gloria shouted "A baby, a baby!" There on the bank was a baby elephant all by itself. He seemed quite content munching on the grass and oblivious to us and our concern for him. Wonder what became of him.



We loaded onto the bus and returned to the Victoria Falls Safari Lodge where we were again greeted by the colourful "Fuller brush" man at the entrance. A very memorable day!





Elephant Back Safari and Victoria Falls

Lucy Mulgrew



October 20, 2013 started very early in the morning (5:00 am). Our first stop was to get close and personal with the elephants. Where else can you ride an African elephant through the bush among the wild animals, safe and high above the ground, except in Zimbabwe? The country of

Zimbabwe is 390,580 square kilometers and is bordered on all sides by other countries. Zambia lies to the northwest with the Zambezi river and its Victoria Falls forming the border. Mozambique lies to the northeast with its border formed by the Eastern Highlands. Botswana lies to the southwest and South Africa to the south, its border formed by the Limpopo River.

African elephants are of the genus *Loxodonta*, consisting of two extant species: the African bush elephant and the smaller African forest elephant. Elephants can eat 300 pounds of food in one day. Elephants have the longest pregnancy of all animals, lasting 22 months. Poaching and habitat destruction threaten African Elephants throughout their range. They are hunted for their tusks, which are ivory teeth that grow throughout the animal's life. Because of their size African elephants have no enemies other than people. Calves, however, fall prey to lions and crocodiles. Elephants live to about 70 years and can weigh more than 6 tons and stand as tall as 12 feet at the shoulder.



Upon arrival we were offered coffee, tea and a snack. A guide gave us a short introductory talk which included safety. We were introduced to the elephants and their "indunas" (Black African Overseers). We were able to ride, learn about and interact with these majestic animals. Being up close to an elephant in the bush is a moving experience but being on top of one is an ideal way to be part of the wild and see it from the best vantage point. This was an experience of a lifetime and one I will cherish forever.



Our next stop was a visit to Ko Mpisi village. We were welcomed by the Chief (or Medicine Man), who talked to us about life in this village and how happy they are with what has been given them.



We enjoyed lunch with a local family who told us all about their life; it was a very humbling and enjoyable experience.

Our next stop was Victoria Falls, one of the Seven Natural Wonders of the world. Victoria Falls is a town in the province of Matabeleland North, Zimbabwe. It lies on the southern bank of the Zambezi River at the western end of the Falls themselves. According to the 1982 population census, the town had a population of 8,114. This rose to 16,826 in the 1992 census. Victoria Falls airport is 18 kilometers south of the town and has international service to Johannesburg and Namibia.



"Victoria" is one of the most spectacular attractions in Africa and one of the most unusual waterfalls in the world. It is created by the Zambezi River that suddenly plummets into a narrow, 100-meter deep chasm. At the same time, Victoria is the only waterfall in the world that is over one kilometer wide and over one hundred meters deep.

Its roar can be heard from 40 kilometers away, while the spray and mist from the falling water rises up to 400 meters and is visible from 50 kilometers. Even the rainbows are incredible here – they are produced by the light reflected off the surface of the Moon

The falls were discovered in 1855 by David Livingstone, the British doctor and missionary, who named them in honour of Queen Victoria. Locals called this nature's wonder "Mosi-oa-Tunya" (the smoke which thunders) and were afraid to even get close to it. Brave Livingstone was the first European who would cross the entire Dark Continent from the south to the north. His expedition, aimed at bringing Christianity to Africa, was accompanied by 300 warriors from one of the tribes, but only two of them dared to get close to the waterfall.



However, the traveler was not too happy about his discovery. For Livingstone this wall of water was just an obstacle that prevented the Christians from reaching the tribes in the depths of the continent.

The waterfall remained practically without visitors until the construction of the railroad in 1905. Nowadays this place is named a World Heritage Site by UNESCO. Locals from both Zambia and Zimbabwe have lost their fear of "The Smoke that Thunders" and they have successfully developed a tourist business on both sides of the river.

This was a very busy and fulfilling day – what an experience!



Chobe National Park

Joanie Jarvis



It was another very hot (38 degrees C!) and sunny day when the majority of us congregated in the lobby at 7 a.m. to load the buses and head off to visit Botswana, home to approximately 2 million people. Botswana is similar in size to Dallas, Texas, and its main

industries are mining diamonds, raising cattle and catering to the tourists. Today it was catering to the Desk and Derrick gang. The ride to the border took approximately an hour through very arid terrain. Once there, we all had to line up to be stamped out of Zimbabwe and into Botswana.



We started our adventure at the Chobe Lodge in Chobe National Park, the third largest park in Botswana, covering 10,566 square kilometers and home to an abundance of wildlife and game. There we met our driver, Stanley, a witty, very informative and entertaining Botswanian.

One of the first things you will notice in Botswana is that there are a lot of elephant trails. Botswana is home to Africa's largest remaining population of elephants – approximately 60,000 to 80,000 – which was great for me, because elephants are my most favourite mammal of all! Kathi DesChene was so interested in the elephants that she had our driver stop so she could take a picture of the size of their poop! There is a lot to learn about elephants: they weigh approximately 130 kilograms when they are born; they have over 1,000 muscles in their trunks; they are very short sighted, however they are very good at smelling and hearing; and you can tell the difference between the male and the female by their foreheads – the female's forehead is a pancake shape while the male's forehead is round. And the reason Chobe's elephants are known as 'African Elephants' is that their ears are in the shape of Africa. One of the families of elephants we saw had a teenager tagging along, as well as a baby that was less than a year old. It was interesting to watch the baby feed itself by kicking grass into its trunk, shaking the soil out, and then stuffing the grass into its mouth.



Two plants that grow in abundance in the Park are the Umbrella Thorn Acacia tree and the Woolly Caper bush. The Umbrella Horn Acacia is known to tolerate dry high temperatures, living in sandy and stony soils.



The Woolly Caper bush is native to Botswana. It remains green all year round and the impalas, kudus and giraffes feast on it. Interestingly, the elephants give this bush a pass. They are more interested in eating trees – by stripping out the bark, which results in the trees eventually dying.

Well over 460 bird species live in the park. Some that Stanley spotted were the Chuba Chicken that have beautiful Ming blue necks, Flying Banana Birds (also known as the Southern Yellow-billed Hornbill), Flying Chillies with bright red beaks, Lilac-Breasted Roller Birds, Red-Billed Wood-Hoopoes, Glossy Ibis with its long black beak, Red-Billed Teal Ducks, Black Smith Ploughers, Egyptian Geese that shared the spot with crocodiles lazing in the water nearby, Black Winged Stilts, the Hammerhead bird, the Great White Egret, and an African Jacana otherwise known as a Lilly Trotter because he can walk on the lily pads in the water.



There were no sightings of leopards or hyena, but a few lions were discovered lounging in the shade. Some giraffe were busy feeding in the bush and buffalos and hippos grazing on the plains. The birds sitting on the hippos' back did not seem to faze him.



Some interesting facts about hippos and crocodiles: hippos can stay underwater for six minutes at a time and they only have one eye that is horizontal so they can see above and below the water at the same time. Crocodiles do not have a tongue and they can stay under the water for up to 5 hours!

All the animals in the park (even the lion) respect the elephant – he is the undeclared king. However, that does not stop the Warthogs from walking among the elephants, especially during feeding time, to catch / grab whatever the elephants drop to the ground.

There were many Impalas roaming around, the majority of which were pregnant. Their babies were due in November. As soon as the heavy rain comes, the Impalas give birth. They can hold off giving birth for up to 3 months while waiting for the rain. Young males get kicked out of the herd when their mothers become pregnant again, so one usually sees more females than males in a herd.



We also saw Sable Antelope and Puku, which is another member of the antelope family, and is only found in Chobe. Other members of the antelope family that we spotted were the Tsessebe and the Kudu. The Tsessebe is the fastest of all the antelope and the Kudu, each of which has its own unique distinctive lines, are the third largest in the antelope family.



And one cannot forget the majestic eagles. First there was a Tawny Eagle – it sat beady eyed and very regal looking, high in the tree; then there were the African Fish Eagles (the national bird of Zimbabwe) that also sat high up in the trees, staring down at us as we drove past on an extremely bumpy unpaved road which was bordered by many termite hills – some tall and thin, others short and fat, and others a cluster that looked like a group of small hills.

We stopped for a yummy buffet lunch at Chobe Lodge. They served the usual fare of yellow rice, spiced noodles, mushroom soup, roast potatoes, fish, etc., but the icing on the cake was the Neapolitan Ice Cream – it was to die for!



What a most memorable morning it was!

And then we were off on a boat cruise down the Chobe River with a Matengu Travel Guide. The Chobe River forms the border between Namibia and Botswana. There is an island in the middle and we sailed down one side and up the other. There was once an issue around whether or not the island belonged to Namibia or Botswana, which was settled by the water. On one side the channel is so shallow that when the water recedes you can walk from the island to Botswana. However the water on the other side is so deep that, even if the water recedes, you cannot walk to Namibia. So it was decided that the Island belongs to Botswana, and it has been designated a part of Botswana's National Park.

There were many interesting things to see on the trip: crocodiles feeding on a dead hippo, live hippos hiding in the water, others grazing on the island near a herd of elephants. King Buffalo grazing on the Island. Lechwe Antelopes grazing in the distance on the main land. A lone elephant paddling in the water.

In the distance, on the banks of Namibia, there was a herd of buffalo grazing with impalas mingling in the middle of them, and hippos lounging in the water close by. Each seemed to be ignoring the other.

The baboon family fooling around on the shore seemed oblivious to the buffalo and hippo nearby.

It was a long day for the tired but very contented bunch of Desk and Derrick members and guests that headed back to the Zimbabwe border to be stamped back into that country.

