THE BARKING GECKO

Newsletter of the NamibRand Nature Reserve

June 2004 *Volume 5 Nº 2*

In this issue:

Welcome to a new crew on NamibRand Nature Reserve

After six years of loyal service to the Reserve, both Achim and Ursi Lenssen have decided to retire from the desert and settle at Swakopmund at the end of their contract on 31 July 2004. Their contributions to the NRNR project were beyond any expectation. These will be duly remembered and recorded at some later appropriate time. At the same time, Peter and Marilyn Bridgeford will leave Aandstêr, their abode for the last five years, to go into retirement at Walvisbay. Again, their contributions will be remembered on a later occasion.

As from 01 March 2004, we employed Andreas Keding as ranger, residing at Toekoms and reporting to the Control Warden at Keerweder. Andreas is the husband of Viktoria, who heads the Namib Desert Environmental Education Trust on the farm Die Duine. He will take over most of the responsibilities of Peter Bridgeford, looking after the southern portion of the Reserve. He holds a National Diploma in Nature Conservation from the Polytechnic of Namibia and gained practical experience at Okonjima, before coming to NamibRand to build the NaDEET Centre on Die Duine.

As successors to Ursi and Achim Lenssen, we welcome Nils Odendaal and Danica Shaw to Keerweder. They wish to make NRNR their new "Joint Venture" after their marriage in July. While they may not bring along the vast practical experience of their predecessors, both of them are highly motivated to make their stay on the Reserve a success in continuation of NRNR's success story, which is recognized by many. For their new task, they should be well equipped with Nils holding the National Diploma in Nature Conservation from the Polytechnic of Namibia. He had desert exposure, while working with the Integrated Rural Development and Nature Conservation projects at Wêreldend in Damaraland and four years of experience as Project Co-ordinator with the Namibia Nature Foundation under Dr Chris Brown. Danica holds two master's degrees, one of them in Environmental Management from the University of Cape Town. She has been in Namibia since 1996 and has worked in a number of positions, lately focusing on environmental assessment and management.

I look forward to another long-lasting and fruitful relationship with all our newcomers and wish them lots of success and enjoyment from their new tasks, all in a spirit of ongoing achievements related to the NamibRand Nature Reserve Project.

J. A. (Albi) Brückner

Time to say good-bye, time to move on

Achim and I have been living on the NamibRand Nature Reserve since Feb.1998. Right from the start we put all our efforts and energy into creating a Reserve for man and animal to enjoy. It is in man's nature to want to make a difference in the work place and the area where he lives. Whether we succeeded in our goal is not what ultimately should count. I therefore decided rather to find out what NamibRand has given me.

Although our biggest dream that NamibRand be registered as a private Nature Reserve is still in the pipeline, the years living here have given me a lot for which I will always be grateful. If one decides to live in a remote area like NamibRand, one needs to be able to do just anything and everything. I saw myself as a Girl Friday; whatever job was

(Continued on page 2)

(Continued from page 1)

expected of me, I did as well as possible. There were manifold duties: the butchery (I still don't enjoy working with meat after all these years), catering for guests (cooking is not my favourite) office work (this I enjoyed), working with people (my favourite), a little shop with all the essentials for our employees (I went to a lot of trouble to cater for all the needs of our employees), editor of the Barking Gecko (a challenge) and others.

Now looking back to all the years on NamibRand I can honestly say, that NamibRand did make a difference to me. It made me realise that a human being can adjust to nearly anything. My confidence has grown over the years, so much so that I am more than ready to embark on a new adventure namely to begin gerontological nursing (nursing the elderly). I needed the many years in "the desert" to prepare myself for this new task. I have matured during the past years and have enough empathy to work in a much needed although not always easy field. My faith has grown to such an extent that I know that whatever I will be doing, there is always One watching over me and what is more important give me the necessary strength for each new step I am about to take.

Although we are definitely still going to see each other in the future, I would like to thank each and everyone who made our stay a pleasant one on NamibRand and for all the memorable get-togethers that really made a difference so far from the social hub-hub of town.

Ursi Lenssen

Under Namibian Skies

(part 1 of 3)

I feel safe beneath the stars. They are always there, no matter what. They listen, yet they do not answer back. They hear my thoughts yet they do not make judgements. I can get to know their familiar patterns and they become my friends. I can play among them in my imagination, free from fear. Their timeless longevity calms me and tells me not to worry because there are greater things. I feel safe beneath the stars.

"Is this your first time in Namibia?"

A familiar question, to which I would reply, "Well, actually, this is my first journey south of the Equator!"

An epic voyage from England became a wonderful adventure into the unknown, which is my favourite kind! Though it pales into insignificance compared to my current tally of thirty-seven voyages around the sun.

"Er, what's that you say…?" Pardon me. What I mean to say is, yes it's a long way to southern Africa, but in fact I've been travelling around the Sun at over 1000km per hour since my birth thirty-seven years ago! And why do I say these strange things?

Because I am an astronomer!

More specifically, I was guest astronomer at Sossusvlei Mountain Lodge for six precious weeks of my life; an idea that has proved to be successful there for about a year now. My claim to uniqueness though was the fact that I was the first English astronomer, as well as the first female!

I found myself in the heart of Namibia's NamibRand Nature Reserve at Sossusvlei Mountain Lodge, almost four hundred kilometres southwest of the capital Windhoek where the largest telescope is housed in the whole of Namibia, a twelve-inch fully computerised Meade LX 200. Through the small eyepiece, it was my task to convey the celestial wonders of the visible Universe to guests staying at the lodge.

'Doing the stars', as it is more familiarly known among the staff there, was my job each evening. I was often introduced as the 'stargazing lady' to new guests, a term that would set the scene for my forty-two evenings under Namibian skies.

My first view of the late-January Southern Skies was like that of a child who, with hands placed over tightly-shut eyes, then peeks through and opens them wide in delight at the sight of the best birthday present ever! Never before have I seen the southern stars. In fact, neither had I seen such clear, dark skies. A little part of me now felt complete.

Many people who come to the Southern Hemisphere want to see but one thing, the famous Southern Cross. Each night it rose rapidly from the southern horizon, followed faithfully by the southern Pointer stars. The lower of these, Alpha Centauri, is actually a system of *three* stars. It is one of these, Proxima Centauri, that is the closest star to the Earth, (after the Sun), although you can't see it because it's too small and faint at over forty thousand billion kilometres away!

This is a very big number and a huge distance, even for the closest star! So, in astronomy, we use a term called a 'light year', which sounds like science fiction, yet in fact makes these numbers much easier to digest. Based on the fact that light is the fastest known thing in the Universe (travelling at three hundred thousand kilometres per second, each and every second, without stopping!), a light year is the distance light travels in a year, a staggering nine thousand, four hundred and sixty one billion km! In light years, the nearest star to us, (Proxima Centauri), is 4.22 light years.

Compare this to the farthest known objects – galaxies, some of which are twelve billion light years away from us, maybe more. The size of the Universe is still unknown. Yet, we do

(Continued on page 3)

(Continued from page 2)

know that in each galaxy there are hundreds of billions of stars, and that the Universe itself is literally jam-packed full of billions of galaxies! The Universe is a truly gigantic place and it's there above us each night, silently and patiently waiting to be discovered.

All the stars you see with the naked eye are stars within our own galaxy, the Milky Way. And to the naked eye approximately two thousand stars are visible. The Milky Way is in fact the name of our entire galaxy – all two hundred billion or more stars! Yet people associate the term with one specific area of the sky; the cloud-like, whitish band that stretches across the sky overhead. No matter where you look in the night sky, even if you are able to see only a few stars (as is the case in cities like London), you are in fact looking out into the entire Milky Way Galaxy, a huge, rotating, spiralling, disc-shaped star system. The densest part of this disc, though, is only visible from the southern Hemisphere. When you look up into that sweeping cloud-band, you are looking right into the *centre* of the Galaxy! This 'Milky Way' (named by the Greeks who believed that the gods had spilt milk across the sky!), is not really a cloud at all. We, (that is the Sun and the nine – oops, sorry! - ten planets), are situated in the suburbs of our galaxy, about two-thirds of the way out from the centre at a distance of thirty thousand light years! The entire galaxy stretches, from edge to edge, one hundred thousand light years across and it takes the Sun two hundred million years to make just one revolution around it! So, even if you could travel in your little spacecraft at the speed of light, (three hundred thousand kilometres per second!) it would still take you one hundred thousand years to travel just from one side of the Galaxy to the other! And remember, the Universe contains billions of these leviathan galaxies; some smaller and some much bigger than even the Milky Way Galaxy!

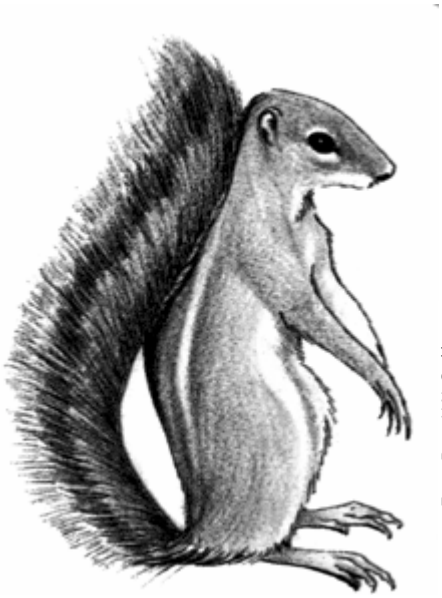
Phew! Well, enough of all these numbers and facts!

Caroline Beevis, March 2004

From the Guest book at the Dunes Lodge, Wolwedans

A truly wonderful landscape blending with ochre sand dunes with vast beige desert grasses and majestic hardy camelthorn trees, mixed with fabulous wildlife, reminiscent of our outback in Australia. The hospitality was excellent with a real personal touch. Thank you for a very special experience.

Rita and Ron Stasink,
Melbourne,
Australia (09.03.2001)



From: Reay H N Smithers
Land Mammals of Southern Africa

The Ecology of the Cape ground squirrel (Xerus inauris) and the Damara ground squirrel (Xerus princeps)

(continued from previous issue)

Methodology:

Study sites: Site 1 (a moderate resource site) is a 3500 ha ranch in the Kalahari-bushveld region of Namibia (23º25'S, 18º00E) where squirrels have been studies since 1989. Annual precipitation averages 215mm per year.

Site 2 (a low resource site) is Farm Aandster (25º20'S, 16º02E), which is part of the NamibRand Nature Reserve. Annual precipitation is estimated to be less than 100mm per year.

Site 3 is in central South Africa in an area with annual precipitation of 460mm.

Trapping and Marking: All squirrels were captured using mesh wire live traps, baited with peanut butter and chicken feed. Traps were checked regularly every hour. To avoid heat stress traps were covered with cardboard to increase shade. Individuals were marked for permanent identification with implantable passive microchips and all other sites individuals were marked with freeze branding. For identification at a distance dye marks were placed on the body. Individuals were weighed and examined for species, sex, age, reproductive condition and external parasites. In areas where the two species overlap, I distinguished species by examination of the squirrel's incisors and tail hairs and measured tail length. A small amount of skin was removed from the tip of the tail from each animal to use for DNA verification of species identity and for studies of paternity. Animals were then released at site of capture.

Observation: Ground squirrels are strictly diurnal, and the open habitat and sparse cover in the areas where they live make visual observations quite easy. Squirrels were observed from trees, windpumps and observation stands and the behaviours recorded. Focal animal sampling was used to record the

(Continued on page 4)

(Continued from page 3)

behaviour of females on days of oestrus, including the length of oestrus and the identity and behaviour of all attending males, and to record the rate of vigilance of individuals in different group sizes.

Field Work:

Farm Aandster. This is a low rainfall site and this area is included in the study as a low resource site. Populations of *X. inauris* in this area remained high despite the lack of rain during the previous year. To date we have trapped and marked 63 animals in 7 female social groups and 3 – 4 male subbands. Mean body mass for adult females was 580.4 ±11.8g and for males was 636.1 ± 8.3g. Female social groups consisted of 1 – 5 adult females, 0 – 2 subadult females, and 0 – 2 subadult males. Only one female group appeared to have greater than three adult females (5 females were trapped in the colony),

however, until we have done observations of this colony, we cannot determine if this is indeed a larger adult female group than in Christirina. Four female groups were also recorded with adult males (1-6) however whether the males are living with the females or part of a male subband has not yet been determined. Three all-male band were recorded, consisting of 3 – 5 males in each. The Namib does did not receive rain during that year and similar to Christirina, we saw no signs of reproductive activity (no juveniles recorded)

J.M. Waterman, Department of Biology, University of Central Florida

"My Humble Apologies"

In my annual review in the last "Barking Gecko", I omitted to record one other major event during the year 2003 – namely the official opening of the NaDEET Centre on the farm Die Duine on 24 October 2003. I very sincerely apologize for this oversight.

Meanwhile the Centre is in full swing under the able leadership of Viktoria Keding (nee Paulick) and all of us involved in the NamibRand Project wish you, Viktoria, the success you deserve with your endeavours. All the Readers of the "Barking Gecko" look forward to read more about NaDEET as the project progresses into the future.

J.A. (Albi) Brückner

Fairy Circle Research

In mid. February the Fairy Circle Research site had over 20mm precipitation, measured in the rain gauge. It was postulated that the termites that are believed to be responsible for the Fairy Circle bare patches would commence their activities as soon as sufficient rain had fallen to germinate grass seed and waken the perennial grass tufts. We contacted Dr. Carl Albrecht in Cape Town and he arrived at Keerweder within a few days. We started digging holes in the bare patches in search of the elusive termites and were taken aback by the lack of penetration of moisture. The rain had not even gone down 50cm in the circles and even less outside the circles. Analysis has shown that there is three times as much available moisture inside a Fairy Circle compared to an equivalent sample taken from outside. Obviously, the grass utilizes the other two thirds. We did not find termites in any of the holes we dug. The rain was obviously still too little and February far too hot even below ground level. In research, even an unsuccessful attempt brings a bounty of information, so it was well worth the time spent.

Achim Lenssen

How does the Namib golden mole find food?

This is the question that has puzzled us ever since we heard about the blind, tiny mole (*Eremitalpa granti namibensis*) that makes his home exclusively in the Namib Desert. In her Ph.D. thesis, Laura Fielden of RSA discovered that these animals search for food by either surface walking, punctuated by head dipping (the mole stops and inserts its head into the sand), or by sand-swimming. Using the first method, one may think of the animal blindly walking on the surface and occasionally head-dipping to "open his eyes and take a look". In contrast, during sand-swimming he is foraging "with his eyes open" all the time. In both cases, the goal may be a mound of sand covered by dune grass (*Stipagrostis sabulicola*), or a clump of ostrich grass (*Cladoraphis spinosa*), under which the mole's favourite foods (dune crickets, beetles, termites, ants, spiders and even small lizards) can be found. But how the blind moles locate these food sources remains a mystery.

Measurements with sensitive instruments called geophones (also used by seismologists to measure earth motion) revealed to us that the dune grass or ostrich grass on mounds vibrates in the wind, producing strong vibrations in the ground. In addition, geophone measurements at the mound, or beneath grass clumps, revealed clear seismic signatures from the prey items associated with these structures. Thus, a hypothesis was born: The Namib golden mole uses a 2-stage seismic detection system to find its prey. First, it detects the general location of the food source (mound or grass clump)

(Continued on page 5)

(Continued from page 4)

using vibrations from the source caused by the wind. Second, at close range it detects the seismic sounds produced by the prey items themselves.

Can we demonstrate this? This was the goal of a recent visit to Die Duine by an international team of golden mole researchers: Prof. Jenny Jarvis and Dr Gary Bronner of the Zoology Department, University of Cape Town; the foremost experts on mole behaviour, ecology and population biology, Dr Matthew Mason, a lecturer from Cambridge University (U.K.), who did a Ph.D. thesis on the anatomy of the ears of golden moles and other subterranean mammals; and Dr Ted Lewis, from the University of California (Berkeley); and Dr Peter Narins of the University of California (Los Angeles), both specialists in the mechanisms underlying seismic communication in vertebrates.

In September 2002, this team set up an experiment on the low dunes near Die Duine homestead. We buried 8 low-frequency loudspeakers under the sand in a circle with a diameter of 10m. Each afternoon, a mole from the dunes was released into the circle and allowed to settle. Three adjacent loudspeakers were then turned on and played the sounds of wind blowing through dune grass, or prey sounds recorded from beneath ostrich grass, or a combination of both. The idea was to observe the direction the released mole(s) take as they leave the centre of the circle and head towards the perimeter. If the moles headed towards the speakers playing the bush-in-the-wind sounds, this would provide evidence that the moles are localizing the sounds of the bushes, and thus the possible location of prey.

Golden moles, like all mammals, have 3 middle ear bones: the malleus (hammer), incus (anvil) and stapes (stirrup). While a human malleus weighs 28mg, that of a Namib golden mole weighs 45mg, despite the fact that these moles weigh only 20g! One might say that the mole is mostly malleus!! The orientation and suspension of the golden mole malleus in the middle ear both suggest its function as a sensitive vibration detection device. This ear anatomy of golden moles appears highly adaptive for sensing prey-generated vibrations in the sand.

Preliminary results obtained during the September visit are consistent with the hypothesis that golden moles orient towards the vibration sources broadcasting mound or mound-plus-prey sounds during sand-swimming foraging. In contrast, when the animals are surface-walking, they appear to disregard the vibration lures, especially if it is windy. Perhaps these tiny mammals can sense the lack of wind when surface walking, and thus are not attracted to playbacks of wind-generated mound sounds. Clearly, additional experiments are needed to understand the details of how these fascinating, blind mammals navigate so precisely to find food.

The research team would like to thank: the Board of Directors of NamibRand for the possibility to undertake this research on the reserve; the Ministry of Environment & Tourism (particularly Mike Griffin) for permission to do this work in Namibia; and especially Marc & Elinor Dürr, and their staff, for their enthusiastic co-operation and warm hospitality.

Dr Peter Narins, UCLA, USA

Photo: Viktoria Keding

News from NaDEET

I am Michaella Phemelo a Nature Conservation Student at the Polytechnic of Namibia currently doing my in-service training at NaDEET Centre. I am doing a project for a six month period, which is primarily based on a pre- and post-oral questionnaire, through an interview on the first and last visiting days of the group. My project is "The Perception and Acceptance of Alternative Energy for Cooking" (i.e. solar cookers, solar ovens and fuel-efficient stoves). The aim of my project is to find out why or not Namibians use alternative energy sources for cooking. This project complements NaDEET Centre's programme and aim, as it primarily uses the previously mentioned cooking equipment. This gives the learners a better understanding and is the basis of my interviews. We have had four school groups this year and there are still many to come in the next months. I have learned a lot, especially how to work with learners and for my project I have had good interview results.

When I came to NaDEET in January, I really felt that I was in the Namib Desert. It was so hot. I had to adapt to the weather conditions. I managed because I knew that the animals had adapted, so I should too. I am having a great time at NaDEET Centre. I am learning from the activities done with the learners. For example, not only learning about water conservation but also observing the learners understanding and realization of the importance of water.

One has to expect anything if you are in the desert, especially when it comes to the weather. An unforgettable experience was in April when we had a grade 6 and 7 class from Aranos Primary School. We were trying to solar cook. However, the only big cloud in the sky was right in front of the solar cooker. Eventually we had to give up because it then began to pour with rain. Everybody still had bright smiles because they were happy about the rain for themselves and for the environment. The next day the sun shone again and solar cooked food was eaten.

Michaella Phemelo

"THE WILDLIFE OF TODAY IS NOT OURS TO DISPOSE OF AS WE PLEASE. WE HAVE IT IN TRUST AND MUST ACCOUNT FOR IT TO THOSE WHO COME AFTER US"

Der Rundblick (Aus der Tür)

Photo: Viktoria Keding

Scharf die Silhouette,
der Himmel blau,
die Bergekette,
wohin ich auch schau
ein Blick in die unendliche Weite
die Natur pur. Auf dieser Seite.

Still, es bewegt sich kaum,
Schoten, Blätter und Gras,
das Wild, unter dem Baum.
Alles trocken, aber es frass
hier täglich;
Tiere der Natur
ernähren sich redlich.
Wovon leben sie nur?
Dann auf dieser anderen Seite
für uns nur die grosse Pleite.

Kein Ton sich verteilt,
die Hitze brütet.
Der Käfer über den Sand eilt
die Eidechse sich hütet
vor dem heissen Atem der Sonne
auf vier Beinen zu stehen.
Ach welche Wonne
Das wir auf der anderen Seite können gehen.

Biman D'Nar

(The blue sky, the range of mountains, the never-ending distance and untouched nature on this side. With hardly a movement the game browse on the pods, leaves and grass. Although everything is very dry the animals feed daily. One easily asks from what they live as on the other side there is nothing. No sound, the heat breeds. A beetle hastens over the sand and attempts not to stand on its four legs.)

Ranging on NamibRand Nature Reserve

When I went to a park or game reserve with the family as a little boy, I often had the idea of becoming a ranger. Although I continued being interested in nature, I had forgotten about this "ranger" notion during my teenage years. Only when I finished school, did my studies lead me back into this direction. Now I am not a little boy anymore but a ranger on NamibRand. So life continues to grow and things come true that seemed so far away as a child.

For about two months now I have been busy on NamibRand, enjoying the beauty of the magnificent area as my "office space". It has been a quite intensive time getting to know all the specialities of the Reserve including the work that comes with it.

For example, driving to the town of Maltahöhe to pick up all of NamibRand employees' children from school for the holidays or long weekends is quite an unforgettable experience as they are so excited to come home. Working on wind-powered water pumps in the most remote places lets you wonder how someone put it there in the "old days" without a 4X4 vehicle. Part of my work at the moment is to remove old water reservoirs that were fed via kilometres of pipe line to provide water for sheep. It is admirable how the people tried to make a living in such an arid and dry place.

But although the desert can be a hard place to live in, it is also rewarding with its aesthetic pleasure and 'booming' of life as soon as it rains only a little bit. The vast distances are remarkable which makes it a long drive to check on a water point or even longer to drive along the boundary fence. The most amazing experiences are to be able to observe the reactions and interactions of wildlife whilst working. Some highlights so far were observing the defensive behaviour of a Rock Monitor Lizard we stumbled upon on Draaihoek Farm or the amazingly camouflaged chicks of the Namaqua Sandgrouse that we saw near Jagkop. These kinds of experiences make working on NamibRand most enjoyable as one never knows what one will come across the next day.

Andreas Keding

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NamibRand Nature Reserve

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