

FSM-TIMES

FourStripedMouse



Title:
Who ate my mouse?

Reports by students

Gecko portrait:

Golden Mouse 2009 awarded to Dr. Urs Thalmann

Grant from the FAN for new PhD student



EDITORIAL

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IMPRESSUM

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South Africa: As the name says, it is the most southern country in Africa. South Africa lies at the Cape of Good Hope. The population of South Africa (40 million) consists of black South Africans (e.g. the Zulu), which represent 75% of the population. 12% are white, 8% coloured, and some are Indian, Malaysian or descendants of the San (bushman). South Africa is the only industrialized country in Africa with a very good infrastructure.

Succulent Karoo: It describes a special vegetation type. It receives low rainfall in winter and is characterized by dwarf succulent shrubs and an amazing wildflower display in spring. It is a desert to semi-desert environment. Succulent Karoo is found in Namaqualand and southern Namibia. In the FSM-TIMES, the words succulent Karoo and Namaqualand are often used as synonyms.

Namaqualand: It is situated in the northwest of South Africa, between Cape Town and Namibia. Famous for its wildflower display in spring, Namaqualand was one of the world's most important copper mining areas at the beginning of the 20th century. Nowadays the diamond mines are more important. Because of its dry desert like climate, agriculture is mainly absent and population density low. Namaqualand is part of the Northern Cape Province.

Springbok: It is the capital of Namaqualand. Although Springbok has only around 20 000 inhabitants, it has shops for nearly everything, including two well stocked supermarkets. At weekends Springbok is very busy, when all Namaqualanders come here to do their shopping.

Goegap Nature Reserve: Pronounced as "Guchap", this nature reserve lays only 20kms outside of Springbok. In spring it is visited by thousands of tourists that are attracted by its wildflower display. During other times of the year it is very quite and mountain zebra, gemsbok, springbok, aardwolf, mice and mice researchers live in peace.

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WELCOME TO THE TWENTIETH ISSUE OF THE FSM-TIMES!



Dear Reader,

Autumn arrived in Goegap and brought a lot of rain, which means a good winter survival and normal breeding season for the striped mice. Lots of people left while others joined the research station in the last three months, and data collection continued in a very good way thanks to Ed and the field assistants. The research station received a solar geyser, providing hot water without any costs for gas. This

was possible due to a very generous donation from Dr. Urs Thalmann. This is by far not the only reason why Urs got the Golden Mouse 2009, as you will read more about his contributions to our research in this issue. I hope you will find many interesting and entertaining stories in this FSM-Times, and don't be surprised that in this issue the word most often used is not "mouse" but "porcupine".

Kind regards,

Carsten Schradin

NAMAQUALAND-WEATHER

By Ivana Schoepf

The last three months	April	May	June
Minimum temperatures			
night	9.0	3.1	4.5
day	20.6	12.4	11.4
Maximum temperatures			
night	23.7	17.0	13.2
day	36.4	31.8	27.6
Nights with frost	0	0	0
Rainfall in mm	20.5	17.8	31.6
Days with rain	6	8	7

THE PEOPLE IN GOEGAP

By Ivana Schoepf

The last three months have seen their fair share of people coming and going here in Goegap. First we saw the arrival of a new field assistant, Tobias Gronau, from Germany. He arrived in Goegap in mid March, but he stayed with us for only two weeks, as he was offered a PhD position at the University of Hannover, and he had to leave us. However during his short stay he was lucky enough to witness our first porcupine encounter. Not bad considering that people have stayed much longer and never seen one! Also very lucky in this sense was Laureen' dad, who came to visit her (and Goegap) for a mere three days, and was also present on the porcupine night. If March was the months of arrivals, surely April can be considered the month of departures, as a whopping four people left the

research station. First up were Laureen and Lauriane. The girls left at the beginning of April, just in time to say goodbye to Ed, who had gone to visit his family in Hong Kong in mid-March and had only been back in Goegap for a couple of days. Both Laureen and Lauriane contributed significantly to the success of the striped mouse project as they proved to be both reliable and hard-working. Next in line were Ian and myself. We both left Goegap in mid-April, but while I was heading back to Switzerland, Ian was to remain in South Africa for a few more weeks, exploring this amazing country, before heading back to the United Kingdom, where he was going to start his dream job of working with dolphins. Hence Ed was left in Goegap on his own. But his solitude

was brief as just four days after we had left, a new field assistant arrived: Stephanie Nakada from Canada. Stephanie was already quite experienced in field work and she immediately proved to be of great help. But while Stephanie was settling in the Goegap life, Ian had been exploring South Africa and Namibia. However, he decided that he had to see Goegap one last time before leaving the country (yes, he liked it that much!). Hence in the beginning of May he came back to Goegap for a short visit and this time he brought his mum and her companion Dave with him. Ian's mum had arranged for her holidays to South Africa to coincide with her son's departure, and she was more than happy to be given the

chance to see the place that her son had been raving so much about. Ian and his family's visit in Goegap were very short - only two days! - but I am certain that Ed really much appreciated to see an old face again. The rest of May was pretty quite here in Goegap as only Ed and Stephanie were present at the research station. However there were soon to be more people coming! In the beginning of June, I returned to Goegap to start my field work, and just a week after I set foot on Goegap soil, Erwan Chere! from France arrived. As the breeding season approaches we will have a lot more people joining us: it seems that the season of departures is indeed over.



Ed, Moritz (who only arrived in July: you will read more about him in the next issue), Erwan and Ivana in July 2009 (Stephanie was on holiday!).

SOLAR GEYSER

By Ed Yuen



The new solar geyser can heat up 150 liters of water.

The research station had recently purchased and installed a 150 liters solar geyser to provide hot water for the small bathroom and the kitchens. Although it was more expensive, a copper tubes geyser was chosen over the glass tubes geyser in order to eliminate the possibility of the tubes cracking when the geyser run out of water. The geyser was installed

at the location of the old small solar panels right above Carsten's office. This location should receive a maximum sun light throughout the year with a minimum shadow cast onto the geyser and it is close to both the small bathroom and the kitchens hence should reduce the heat lost when the water is traveling through the pipes. This additional upgrade will enable the research station to reduce its gas consumption further. This would not only save money but it also took us one step closer to a more environmental friendly research station. If we are satisfied with it, we will install more geysers in the future, such that all hot water will be solar made, and no gas will be burnt anymore at our research station. The installation of the gas geyser was made possible by a very generous donation by Dr. Urs Thalmann, who received the Golden Mouse Award 2009 (see further down in this issue).



The solar geyser is placed on the roof of the research station.

HOW TO TAKE A SHOWER

By Erwan Chereil

Well, it is quite easy. If you want to take a shower, you just have to undress, enter into the shower and then you can turn the left button to have hot water and the right one to have cold water. You see, it is the same like everywhere else.. But you should not forget that we are in the middle of a semi-desert where water is precious, so it is better if you economize water. Moreover, the water is pumped from natural underground water to three tanks, two for the main bathroom, one for the kitchen and small bathroom. We need to pump water once a week if

there are a lot of people at the research station but usually we pump water one time for two weeks, this operation last three or four hours. These are the main reasons why we don't stay to long in the shower. Sometimes, when the weather is cold or wet, the pump doesn't want to start. In that case, you just have to try to start it again and again and then it will start. We don't only have to economize water, but also gas which is use to heat water in the biggest bathroom, for the small bathroom and the kitchen- water is heated by a solar geezer. Well, you will

understand that it is important to keep showers as short as possible. Oh, I forgot, sometimes baboons open the lid of the water tanks on the hill to drink ,so if you find that water smells like wet baboon you have to check the tanks. Once a week, one person must clean the bathroom but it is not always the same one, this person has to clean shower, toilets and washbasins, it is not too difficult but it takes one or two hours. Now you will know something to make sure you don't have any problems during your shower. In fact, the research station is in the middle of a nature reserve, therefore there are no security

concerns and as such we don't use the locking mechanism of the door... To avoid an undesirable encounter, you can put on the door a piece of cardboard where it is written male or female. I don't have to explain to you which side must be visible. With this piece of cardboard, when you have a shower, people of the same sex can use the bathroom if they need to do it and there are two showers if anyone else wishes to take a shower. Sometimes we can't use the bathroom because some cages are into this room for experiments and we should not disturb the mice which are in these cages.

SOLITUDE AT GOEGAP

By Stephanie Nakadar

After a month and a half living in the Goegap Nature Reserve in almost complete solitude, I anticipate the arrival of two new faces at the Research Station within the next two weeks; that of a PhD student, Ivy (a regular here), as well as a field assistant from France. Their arrival will be a big change to a place that has been solely occupied by me and the current research station manager, Ed Yuen; a situation that has had me reflecting on my short time here. I first arrived in mid-April from Alberta, Canada expecting to be one of several people at the research station. Due to unexpected circumstances, however, both Ed and I shouldered the field work on our own with only each other for company for five or six days out of the week. Initially I was a little disappointed

having hoped to gain field experience whilst surrounded by many like-minded biologists. I found myself quite lonely but immersed myself in the work. However, as with any place as serene and breathtaking as Goegap, it took merely a few days to embrace my situation here. One of the first things I began to appreciate living and working with only one other person within a 5 km radius was the absolute silence in the evenings. There are no car horns, noisy neighbors or loud conversations from the next room to keep me from a wonderful nights rest. I wake up feeling completely refreshed every morning. During observations of mice in the field I am also afforded the opportunity to see the sun rise and set over the hills almost every day while I listen to birds and observe

elephant shrews, bush karoo rats and striped mice scampering around me undisturbed by the movement of several people trekking through the field. Even simple chores are made easier. I don't have to coordinate my plans with multiple people. I do my laundry and hang my clothes on the line without consideration of taking up too much space; I don't tiptoe around at night so as not to disturb a sleeping roommate and I can hop into the shower and not worry about depriving someone of using the toilet (there is one other separate facility). At the field station there is always a concern that we will run out of electricity. So, we diligently turn the solar panels throughout the day to collect sunshine converted to electricity and stored. However, with only the two of us here there is little risk we will drain the batteries that run our fridge, lights and computers. That being said, there are also downsides with few to blame when the bathroom lights are left on, something I have been guilty of on a weekly basis. Every phone conversation, letter and email is anticipated and appreciated that much more because of our disconnection with the rest of civilization. Without a phone or internet connection I look forward to our weekly trips into town (Springbok) where we run our errands, shop for our groceries, retrieve and write emails and socialize. Our group is fortunate to have befriended some locals including Johann, a good friend of Ed's who works at a garage and whom we often enjoy a braai dinner; as well as the owner of a restaurant, Tittbits, where we share stories and laughs over a good steak or veggie burger, dessert and a cold coke. On

Sundays I walk the 5 km to the nearest payphone at the office on the Reserve where I am also able to talk to family and friends that helps to keep the loneliness at bay.

How to become a field assistant?
Only people with a biological background can become field assistants. These are students of biology, veterinary medicine or related areas. The work of field assistants includes: radio-tracking, trapping and marking of small mammals, behavioural observations, work at the research station, including maintenance, and much more. People interested in working as a field assistant for 2-3 months write an email to carsten.schradin@zool.uzh.ch. Please write a short motivation and attach a CV. You will then obtain more information.



The time alone has also allowed me to indulge in activities I seemed to have all but given up while finishing school and living in the city. I am once again able to read books that I had kept on the shelves in favor of catching up on journals articles relevant to my thesis. I have also been sketching many of the birds I see on the reserve and am

anticipating painting them on canvas when I return home. I am also pursuing a new hobby – photography. I could not think of a better place to tinker with my new DSLR camera especially in the company of Ed, an avid photographer and a keen ecologist with an excellent knowledge of the wildlife in the area.

There is little to complain about except the occasional nights when the company of several people around the braai would be nice; but

as I have been told, the research station is never quiet for too long. The place has seen around ten people living and working here during its peak in the breeding season. Perhaps solitude isn't so bad and something that's hard to come by out here. In the mean time I tell myself daily - enjoy the people, the work, and the view because before I know it, my four months will be over and I'll wish I was back working with the mice and living in Goegap again.

Goegap Nature Reserve

Accommodation: Guesthouse, bush hut, camp site.

4x4 routes, tourist route for all cars, two hiking trails.

Tel: +27 27 718 99 06
Fax: +27 277181286

HOMEPAGE: STRIPEDMOUSE.COM

By Carsten Schradin

	April	May	June	Total last quarter
Visits of stripedmouse.com	5 205	5 298	4 565	15 068
Downloads FSM-TIMES, SGM-Spiegel	160	262	315	737

TITLE: WHO ATE MY MOUSE?

By Ian Paynter

The collar-mounted transmitters that are used to track four-striped mice look like small bits of metal combined with an array of wires that would intimidate a bomb defusal expert (they are all black and cutting the wrong one is disastrous). What's more they don't come cheap. At around 130 Euros a piece the loss of a significant number would very quickly make the work done at the Goegap Research Station unviable, so when a collar drops off the radar a full-scale mouse-hunt is launched. Unfortunately the usual reason for a collar to disappear is that the mouse it was attached to has met its end courtesy of some other element of the local wildlife. Rather inconsiderately, hungry carnivores tend not to bother removing the collars before taking the mouse off to their nests/holes/rocks/bushes or sometimes even before swallowing the mouse whole. This guide outlines the grisly potential fates that await a Striped-Mouse at the paws, claws and jaws of some of Goegaps resident predators and more particularly how to go about recovering the collar in each case. Personally I find it enough of a challenge to locate the collars whilst they are still attached to a live mouse, even one that barely moves from a particular bush. It has become a regular evening feature to see me striding up and down the top end of the farm site waving the antenna around in the fading light with an increasingly desperate look on my

face as I look for that last female from nest 250. The situation is not in the least bit helped by the digital receiver, which requires that you look at the screen constantly and monitor the extent of the bars of signal being displayed, something that gets exponentially more difficult the darker it gets. This terrific combination directly results in me blundering into bushes, rocks, other field assistants and my own traps before finally realizing that in true pantomime fashion the mouse was behind me all along.



Searching for the missing mouse.

Mobilizing the troops

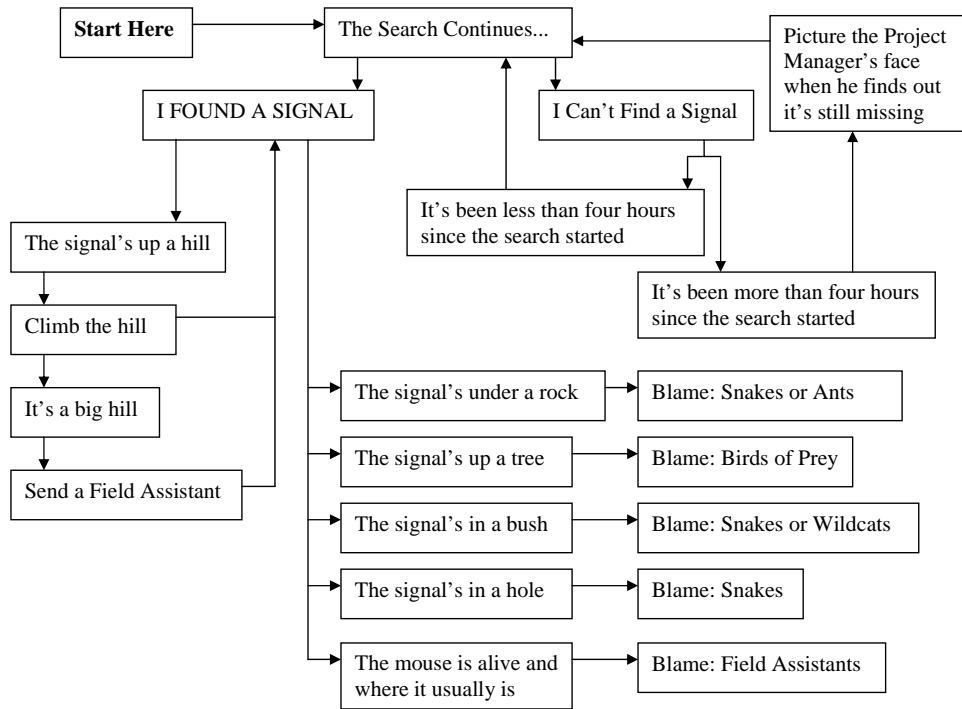
Usually persistence pays off when it comes to radio-tracking, but alarm bells start ringing if a signal consistently remains in one place day after day despite there being no evidence of an accompanying living mouse, or if the signal vanishes completely. In either case this is about the time you need to think about rallying everyone together to try and get that collar back. A typical search and rescue effort requires at least two Field Assistants led by a

Station Manager or PhD Student. Each must be armed with a receiver tuned into the frequency of the AWOL collar (or, horror of horrors, a list of multiple missing collars). They must also have suitably sturdy clothing and nerves of steel. They must be prepared to boldly go wherever a dead mouse has gone before. Even if you're lucky enough to pin down a collar to a particular location there's no guarantee it's going to be easy (or safe) to get it back. This is usually where the Field Assistants come in. However, there's not an unlimited supply of us, and we have parents who would probably go through a similar tracking process should we fail to come back, so it's beneficial to know what creatures you might be dealing with when going after the collars, and how to rescue

them without too much collateral damage (aim for two or less field assistants lost for every collar found as a rule of thumb).



This mouse was found hanging high in a tree, probably put there by a shrike. When one finds the signal of a missing transmitter, it is important to search in all directions, including upwards. One can see the black antenna of the transmitter in the picture.



Skeleton Key: As the sweep progresses you can follow this handy flow-chart. It will alert you to the relevant sections later in this guide on recovering collars from the lairs of various beasties.

The Usual Suspects

Birds of Prey

Culprits: From Rock Kestrels to Jackal Buzzards to Southern Pale Chanting Goshawks to Kites, Goegap is teeming with winged wonders that range from little to large, but all perfectly capable of swooping upon an unassuming Striped-Mouse. Rock Kestrels are a bold brown color with diagnostic grey heads and the Jackal

Buzzards have white underwing panels.



Nest of jackal buzzards. Several transmitters were recovered here-

Recovery: If you find a nest emitting a strong signal from an easy to reach branch, have a fish around in there providing there's no eggs or hungry (razor-beaked) youngsters to disturb. If it's a little higher up, tree climbing is a definite option, but be warned, the trees tend to be baked-through and dry, and some branches will snap if you even look at them funny. Another approach is to wait for the birds to do a little 'spring-cleaning' when they tend to hurl the collars out of their nests along with any other items making their big pile of sticks look untidy.

N.B: If it appears the nest is out on an exposed rock-face then you can probably safely blame the Kites but won't be able to safely do anything else. Goegap has yet to realize its potential as a premiere rock-climbing spot and it's up to you to decide if a budding amateur meeting a sticky end will bring the place fame or infamy with the climbing community.



Two transmitters in the pellet of a jackal buzzard.

Snakes

Culprits: Snakes will more or less leave a collar anywhere, as you can tell from the key. To be honest they could probably even leave one in tree. There are so many snakes on the plains here that it could almost be the subject of a movie. Karoo Sand Snakes are particular fans of Striped Mice, and fortunately their bite is totally harmless to humans, but if you're less fortunate it'll turn out to be a Many-Horned Adder (identification clue's in the name) or a dreaded Puff Adder. The problem with Puff Adders is that, unlike other snakes, their priority when confronted with a human isn't to hiss a bit then slither away. They prefer to try and instigate a meeting between their own brand of necrosing neurotoxin and your blood via a lightning-fast strike. Apart from the long, overlapping scales as a way of recognizing them, they also live up to their name by puffing up and hissing menacingly when they feel someone is trying to disturb their collar collection.



Puffadder

Recovery: In all seriousness do not go reaching into dark crevices or holes without checking them out thoroughly first. When there is a snake involved there is the added complication that the collar may actually be inside the snake itself (they've not heard about biting off small pieces or chewing). If this is the case your next course of action all depends on the species. If it's one whose bite is going to make the person (Field Assistant) handling it particularly ill then you'll have to resort to following it at a discreet distance until it regurgitates the collar. With less deadly varieties you can try a more direct approach. The accepted method is to use (long)

Braai tongs and a pillow case to capture the snake, then bring it back to the Research Station and stick it in a glass tank until it obliges with the return of the collar.

N.B: Whilst driving with snakes in the car the least popular Field Assistant gets to sit in the back with the bagged snake, not on their lap though, unless they steal your food or take too long in the shower.



Puffadder eating a striped mouse. Over the years we lost very few mice to snakes. Most were eaten by birds of prey or by mammals.

Wildcats

Culprits: Although one current Field Assistant pointed out that they are not much larger than domestic cats, though typically much slimmer, that still makes Wildcats more than large enough to snatch a fair few mice. If lots of collars from different groups of mice start showing up in one bush it's very likely there's a Wildcat (or a wild party) involved. They tend to be elusive creatures, eyes flashing green in torch-light, and you will be lucky to see one providing you're not a mouse.



An African wildcat moving into the field site can increase mortality dramatically!

Recovery: Investigate bushes with caution as interfering with any cat's food has been scientifically proven to be positively correlated with the need for skin grafts. Best to wait until you see the feline assassin leave to claim back your collars, then resign yourself to checking there first in future searches because once they get into their stride Wildcats are mouse-killing machines.



Jackals like striped mice!

Ants

Culprits: Obviously these guys aren't terribly good at slaying mice. They are however the six-legged maggies of the underworld and are superb collectors of anything shiny. As I was trying to tag a mouse just this morning a particularly large and opportunistic ant was tugging at the spare ear-tags on their cardboard mounting and trying to make off with them in its mandibles. Ants come in several flavors in Goegap, from the relatively small and harmless black ones swarming everywhere, through the nipper (in every sense) reds, to the white-abdomen monsters that will

spray formic acid at you should you offend them.

Recovery: Depending on how deep they have taken the collar into their nest you may need protective gloves, tongs and a shovel. A recent excavation required the removal of two large rocks and a good deal of digging underneath and I grew evermore skeptical that the collar could possibly be in there. Remarkably we did recover it from deep inside the nest then had to beat a hasty retreat from a tide of disgruntled ants swarming over our boots and trousers. Expect the itching to last a while.

Coming in from the cold

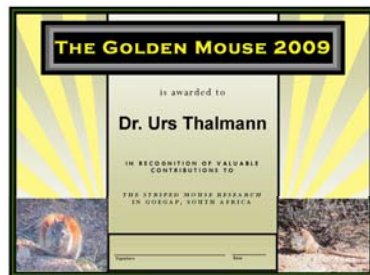
Hopefully reading this guide will help you in the future to recognize those responsible for your hours of trekking about searching for missing collars. Finding a collar in Goegap is like looking for 2-4 grams of metal in a large Nature Reserve, so you'll need plenty of luck alongside any amount of expert guidance. At least if you do track one down what you've learned here should help you bring back most collars (and perhaps even some Field Assistants) safely.

at the very beginning of the project, when I submitted to the FAN at the University of Zurich, and much later, when I got funding from the Vontobel Foundation and the Faculty of Mathematics and Sciences at the University of Zurich. Last but not least, he made a very significant donation of CHF 5000 last year, which was used to improve the infrastructure at the research station, including installing a solar geyser. In cum, without the long lasting support by Dr. Thalmann the striped mouse project would not have been as successful as it was in the last year.

We, the team studying striped mice in Goegap and in Zurich, would like to express our gratitude and as a sign of our appreciation award the Golden Mouse 2009 to Dr. Urs Thalmann.

The event of the Golden Mouse gave us the opportunity to meet with former and future field assistants from Zurich. Due to a thunderstorm, the braai took place at our home in Zurich. The very first field assistant from 2001, Ruben Gutzat, joined us, as well as Alessandra and Romy (field assistants 2008), Moritz (field assistant 2009) and Ivana.

GOLDEN MOUSE 2009 AWARDED TO DR. URS THALMANN



The Golden Mouse 2009 (left) was awarded during a striped mouse braai (right) in May to Dr. Urs Thalmann. Left to right: Moritz, Urs, Alessandra, Romy, Ivana and Apollo.

The Golden Mouse 2009 was awarded in May to Dr. Urs Thalmann. Urs supported the striped mouse project from the very beginning. He advised me which radio-tracking equipment to buy in 2002 and he

donated one of his receivers and an H-antenna to the project. Both pieces of equipment are still in use in Goegap. He also advised me where to find funding for the research project and the research station, but



Dr. Urs Thalmann receives the Golden Mouse 2009 von Dr. Carsten Schradin in May.

NEWS AND INFORMATION ABOUT PLANTS AND ANIMALS

THE TRAP HAPPIER ARE NOT ALWAYS WHO WE GUESS!

By Lauren Keller

Coming to work here on four striped mice you will probably have to trap them. Trapping is an important part of the field work. It consists of setting metal or plastic traps pre-baited with a mixture of bran flakes, sea salt and vegetable oil in strategic places. The traps are usually placed in the shade under bushes which were identified as nesting site to capture a maximum of mice from each group. Trapping is done twice a day: in the early morning which mean just after the sun rise, and in the late afternoon that is to say before the sun set. All the traps are checked about 45 minutes after setting. This time is used to observe other nests. The mice that are captured are weighted and their sex and reproductive status are determined. If they haven't got already a ear tag with their ID number a new one is giving to them and we take advantage of this special moment of intimacy to cut a piece of their tail for genetic samples. For some studies the mice are also painted in different part of their body with a hair dye colors (red, black or blond) to recognize them during the radio tracking or the nest observations. The nice mice adorn with their new fur colors and original earrings are released at last. After being bitten and scratched few...or

many times this different manipulations become a routine.



Mouse in a trap.

This is what happened in most of cases but sometimes you can be surprise opening the trap. Indeed, sometimes it seems heavier than it should be. This can mean three different things. Firstly, the trap was made heavier and you will find a mouse opening it. Secondly, it is not a mouse but two or three mice that are in the trap. This happened when the trap doesn't close properly or when the mice enter the trap together. Usually it is more surprising than a problem since the mice are really cooperative and fall from the trap into the bag one by one. It is just recommended to check the trap after removing a mouse to be sure that there is nobody else at the bottom. For us the record is 4 mice: a mother and her 3 pups. Mice can also have other company than other mice. Often you will find beetles or ants in the traps even in the empty one. They

can stay where they are as they will leave by themselves. Thirdly, it can be a bush karoo rat. This rodent is bigger than the striped mouse. Males weight about 139.0 g and have a mean total length of 240mm. The length of the female is roughly the same as that of males, but their weight is less, about 110.0 g. But that is still more than twice the mean weight for striped mice. It is really easy to recognize bush karoo rats because they look like grey fluffs with their short tail and rounded ears. The first thing you can see opening the trap is a big ass. Indeed, bush karoo rats are too big to turn over in some traps so they will need your help to escape. If you try to handle them, in the same way as mice then you will realize that most of their body is just fur. Just be sure to put your fingers far enough from their mouth, apparently it is really painful to be bitten.

The traps can also be used to catch elephant shrews. Their name derives from their elongated trunk-like snouts which move in all the directions. They look like a big ball (total length 23 cm) with huge eyes and hind legs and feet considerably larger than the forelegs and feet. The funniest part is to watch them jumping more than walking from one bush to another! Again you can handle them, a PhD student did that quiet a lot of time and apparently it is not so difficult.

If you approach a trap and it tries to fly and makes a lot of noise, it probably means that you captured ... a bird! Indeed the baits not only attracted the mice, and other rodents but also the birds who appreciate to find cereals so easily. For me this is the worst animal to capture but

fortunately it is rare. Birds in the traps panic and never stop moving. It is really hard to release them. The best solution is to take apart the trap as quickly as possible. I reassure you until now I don't think any birds were injured.

After these more or less nice surprises there are other ones which I am pretty sure will not be as pleasant to have in the traps. Generally you will find them in the morning when you come to set the traps or in the late afternoon when you move the traps to the new nests. As you probably understood I am talking about our friends the snakes and the scorpions. Don't panic, after three months here I just met one snake in my traps and no scorpions. Apparently, and as it was the case for me, the snakes who come into the traps are not dangerous for us, great! The other field assistant who works with me was the lucky guy who found scorpions in his traps. Since this time I never put my hand in traps before checking them.



Snake in a trap.

One of the things you should know before coming here is how to distinguish between the dangerous scorpions and the "non dangerous" ones. First, to be precise: all the

scorpions are poisonous. Some are fatal, some will get you sick and others are less painful than a bee sting. Like me you have probably heard someone saying that the bigger are less dangerous and you have to be careful of smaller ones. This is apparently generally true but not always (I saw one about 12 cm in length, which is big, but for sure it was a really poisonous one! He even produces a strange noise which is apparently unusual) so let me give you some others clues. The first thing you have to know is how they behave. The dangerous ones are hunters so they move almost permanently and quiet quickly. At the opposite, the "non dangerous" ones wait for their prey so they almost don't move. Secondly, you will see that the dangerous ones have a small body and pincers compared to the size of their tail which is long and wide with an impressive spin. The "non dangerous" ones have big pincers and a tail size proportional to

their body. The differences are really obvious and there is no risks if you are careful enough and check your traps before putting your hand in them. Nobody until now was injured checking traps because of scorpions or snakes.

It can also happen that you will find the trap closed but empty. Again different possibilities can explain this strange phenomenon. First, if there are no cereals anymore but some presence from the mouse: feces, you will know it was a "Magical mouse" that disappeared using a special trick: open the door of the trap by itself! Another possibility is that it was stolen by ants: they are probably the best trap cleaner. If the bait is still in the close trap, I am sorry but it is probably because you didn't set it properly. If trapping can appear a little bit repetitive day after day, it can also be a great occasion to discover closely the succulent Karoo fauna, at least the small ones!

IS THAT REALLY A PORCUPINE? No, YOU MUST BE MISTAKEN!

By Ivana Schoepf

Until recently, porcupines were considered the holy grail of sightings here in Goegap. They were on top of all the keen wildlife photographers' lists. But you were more likely to spot the elusive aardvark when out on a night drive, then catch even a glimpse of this rare creature, let alone taking a picture of it! Porcupines in Goegap were the stuff that myths are made of: we knew they were around (main evidence consisting of the findings of their quills all over the reserve and

the farm), but only few privileged people had been able to actually see one - Carsten being one of these lucky few, who, according to legends, had seen one around the research station! But that was long before I came to Goegap. Since my stay here, no one had actually seen one. Even the reserve manager, Maxi, was unsure about their status as there hadn't been any reports about them for quite some time. And even the installation of camera traps around



the reserve had failed to catch even a blurry picture of these shy creatures. Imagine my surprise then, when out on a night drive we finally saw one! I personally will never forget the time when I first saw it. It was March and Laureen's father was here visiting her from France. He was only staying with us for a mere three days, but we thought it would be nice if he had a chance to experience the Goegap night life. Hence we all got in the car and started to drive around the reserve. Towards the end of the trip, I jokingly suggested to go and take a look at the farm to see if we could spot a porcupine. Of course, the chances to actually see one were close to zero, but everybody was up for it, so why not? Hence we drove past the gate and into the farm, never even thinking of seeing anything. But, as some point, as we came over the road near the jackal buzzard nest, Ian shouted: „Stop! Porcupine!“ Thinking it was all a big joke I drove on. But he insisted so much that I had to stop, and look back. And then I saw

something that looked very much like a bush on legs running for cover. Its black and white quills all erected. There was no mistake: it was a porcupine! For the first two or three days after the sight of the porcupine I was so excited that I felt like I was on a constant high (the other time I remember feeling like this after I had seen an animal, was when I saw my first buffalo while on holidays in Addo National Park in January 2008!). At the time of the porcupine sighting, Ed was in Hong Kong, so you can all imagine his disappointment when he heard the news that he had missed out on the sighting of a lifetime here in Goegap. But in a few weeks down the line he would have one on us. While I was back in Switzerland, in fact, Ed saw a porcupine all on his own. It was an evening and, while coming back from the office were he had gone to make a phone call, Ed spotted a porcupine near the entrance gate to the research station. He quickly went inside and gathered his camera equipment, knowing full

well that the chances of the porcupine still being out there by the time he went back were very slim. Still, he tried his luck nonetheless. And luck was to be on his side as he was able to take several shots of the porcupine including the two close-up pictures that you can all admire here. But that was not the end of it. Ed and Stephanie also saw porcupines again one evening while coming back from

Springbok, and since I have come back in June, we have seen porcupines again three times, including one amazing sighting of a porcupine mother with her baby! This year in the Chinese calendar is supposed to be the Year of the Ox, but judging for the high occurrence of porcupines sightings here in Goegap, I would say, it is more likely to be the Year of the Porcupine!

GECKOPORTRAIT: NAMAQUA DAY GECKO (*PHELSUMA OCELLATA*)

By Ramona Pötzing

This is the only day active gecko that occurs in Namaqualand. It has its habitat in the succulent karoo veld of North Little Namaqualand through Richtersveld to South-West Namibia. **Identification:** This is a small day gecko with a smaller inner toe. The eyes are large and have vertical pupils and prominent eyelids that cannot close and that form a continuous ring around the eye. The scales on the back are smooth and granular, but the scales on the belly

are overlapping. It is light brown to grayish-brown on the back with a few pale and dark spots. The belly is blue-white to cream. **Biology and breeding:** It is very active and forages on succulent bushes or fig trees. They shelter under exfoliating rock flakes, where they are well camouflaged. Small beetles, aphids and other insects are eaten. Females lay one to two eggs under a rock flake in September.

CONFERENCES, PRESENTATIONS AND PUBLICATIONS

VISIT AT SUE CARTERS LAB AT THE UNIVERSITY OF ILLINOIS AT CHICAGO

By Carsten Schradin



Sue Carter and Carsten Schradin at the conference in East Lansing. Sue Carter founded the research discipline of "neuro-endocrinology of social behaviour" and is one of the most famous scientists in the world.

I (Carsten) went to the USA in June to analyze neuropeptides in brain samples collected in a captive study in the lab of Sue Carter. The results were very interesting, with single kept males having more vasopressin in two different brain areas, while no differences for oxytocin were found. I also learned about the importance of the estrogen receptor α and got first results.

I learned a lot from Sue and her students. Sues lab was extremely

helpful in all ways, and I achieved a lot for the short period of only three weeks. We will continue to collaborate with two projects, and hopefully I can establish this technique at my own lab.



Nancy Solomon and Carsten at the University of Miami in Ohio. Nancy Solomon is a world leading scientists in the field "socio-ecology of small mammals."

I gave two talks, one at the University of Illinois at Chicago (UIC) in Sue Carters Lab, the other one at Miami University (Ohio), where I visited Nancy Solomon. Both talks were about the evolutionary and endocrine causes of social flexibility in striped mice.

CONFERENCES

From the 25th to 28th June I (Carsten) visited the annual meeting of the Society for Behavioral Neuroendocrinology in East Lansing (Michigan, USA) and presented a poster. I met there many important

scientists from the USA which I did not meet before at other conferences, such as Karen Bales, Bruce Cushing, Jeff French, Catherine Marler, Brian Trainor, Katherine Wynne-Edwards and many more.

EVOLVED ENDOCRINE MECHANISMS OF SOCIAL FLEXIBILITY

Behavioral flexibility to optimize individual fitness occurs in many species and is regulated by evolved physiological mechanisms. The relative plasticity hypothesis predicts that in species with alternative male reproductive tactics, the highest androgen levels occur in dominant males. However, in field studies in South Africa I could demonstrate that this is not always the case. In male striped mice (*Rhabdomys pumilio*), males have three different social tactics: (i) philopatric group-living males with low testosterone and prolactin levels, but high corticosterone levels, (ii) solitary living roamers with high testosterone, but low prolactin and corticosterone levels, (iii) dominant but sociable group-living territorial breeders with intermediate testosterone levels, low corticosterone but high prolactin levels. My results suggest that dominant males experience a trade-off between low testosterone amicable behavior and high testosterone dominance behavior. High testosterone levels in roamers might promote risky behavior, such as invading territories defended by territorial males. These differences in hormone levels disappeared during the non-breeding season, indicating that they were correlated with differences in reproductive behavior. The differences between philopatric and roaming males were further investigated in captivity. I could demonstrate that family housed males (representing philopatrics) differ from singly housed males (representing roamers) endocrinologically in the same way as observed in the field, but less pronounced. This indicates that environmental conditions influence hormone secretion, but that possibly behavior under natural conditions has an additional effect, e.g. via mechanisms of the challenge hypothesis. Furthermore, family housed males became scrotal at a later age and had, when being scrotal, testes only half as large as those of their singly housed brothers. They also had significantly less sperm. I conclude that evolved endocrine mechanisms are likely to underlie social flexibility in the striped mouse.

SCIENTIFIC PUBLICATIONS

Schradin, C., Kinahan, A.A. & Pillay, N. 2009. Cooperative breeding in groups of synchronously mating females demands large testes to avoid sperm depletion. *Biology of Reproduction* 81: 111-117.

Testis size has been related to the mating system of both vertebrates and invertebrates. These differences are regarded as adaptive responses to sperm

competition in promiscuously mating species. However, not all variation in testis size can be explained by sperm competition. Here we test the hypothesis that the evolution of large testes occurs when synchronously breeding females have to be fertilized within a short time period to avoid reproductive competition among the females. African striped mouse (*Rhabdomys pumilio*) males of a polygynous population with cooperative breeding and high risk of sperm depletion had twice as large testes and cauda epididymis than males of four different promiscuous populations with high risk of sperm competition. When paired with three females simultaneously in captivity, males of the polygynous population bred with three females within 8 days, leading to synchronous births in their harems, thereby potentially reducing the risk of infanticide. Males from the promiscuous population reproduced with only one or two females within 8 days and births were not synchronous. We conclude that large testes are selected for in species with synchronously mating females, which is ultimately beneficial for the evolution of cooperative breeding.



Of course our mice have the biggest balls! Left a testes from a striped mouse male from the Succulent Karoo, right from grasslands. Males in the Succulent Karoo need such large testes, because they mate with several females at the same time.

Schubert, M., N. Pillay, and C. Schradin. 2009. Parental and allo-parental care in a polygynous mammal. *Journal of Mammalogy*. 90:724-731.

We studied maternal, paternal, and allo-parental care in striped mice (*Rhabdomys pumilio*), which nest and breed communally in the Succulent Karoo, South Africa. A total of 18 triads, each consisting of 2 adult female littermates and an unfamiliar adult male, were set up under natural weather conditions. We expected that relationships within captive triads that breed communally would be egalitarian, and that all individuals would participate in the rearing of offspring, but we assumed that the degree of care-giving behavior would vary between mothers, fathers, and allo-parents, as individuals obtain different fitness benefits. Social interactions in the triads were predominantly amicable and in the majority of

triads, both females produced litters in a communal nest. All 3 adults in a triad participated in care of the offspring with mothers spending 43%, fathers 26%, and allo-parents 24% of observations in care-giving activities. Our results indicate that sisters can form stable cooperative relationships, but members of a communal nest allocate their care-giving to individual offspring according to potential trade-offs between direct and indirect fitness benefits. Large amounts of paternal care can occur in a polygynous species, which contrasts with the common belief that paternal care is a characteristic of monogamy.

FUNDING OF RESEARCH: CALL FOR DONATIONS

SUBSCRIBERS DONATION

Account details

We appeal to all subscribers of the FSM-TIMES to donate 80 Rand (10 Euro, 15 dollars) a year for research on the socio-ecology of small mammals in Goegap. Donations of more than 80 Rand are welcome and donors of 400 Rand (50 Euro, 75 dollars) will be mentioned in the next FSM-TIMES.

Donations will be used for the following purposes:

1. Scientific research on small mammals in Goegap, especially smaller research projects such as Diploma and PhD theses, which have difficulties in raising funds elsewhere.
2. Improving the infrastructure of the research station.

In the last issue of the FSM-TIMES of every year we will publish how much we received in donations and how the money was used.

You can easily donate money online if you have a PayPal account.

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Otherwise, please transfer money to one of our bank account.

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ACKNOWLEDGEMENTS

We are most grateful for every donation made to support our research!

NEW RESEARCH GRANT

In April I got a research grant from the Foundation to Promote Young Scientists of at the University of Zurich (FAN: Fonds zur Förderung des Akademischen Nachwuchses des Zürcher Universitätsvereins) of CHF 100 000 (about 66 000 Euro or 91 000 US dollar). This money will be used to pay a PhD student for two years. The project will be totally based in Zurich and the PhD student will work with the captive colony, experimentally altering hormone levels to test for a causal influence on social behavior. Thus, this study will experimentally test our correlative results found during field studies in Goegap.

In May I had invited four applicants for the PhD position, and finally chose Julie Bardet from France. Julie already worked with socially monogamous mound-building mice in captivity and has a lot of experience with working with small mammals. She will start in August and we are looking forward to a very interesting study.

We are extremely grateful to the FAN for supporting this very interesting project, which will lead to important results and complete our studies on the endocrine ecology of social flexibility in the striped mouse.

PhD students in Zurich are well paid, and the salary sums up to about CHF 145 000 for three years, the minimum duration for a PhD. Additionally, there will be research expenses, and the total costs for the project will be CHF 200 000. So while we got a very important grant, we still have to look for more funding!

THE MOUSE'S TAIL

WHO LEFT ME THAT PRESENT?

Typical! Before we were never able to see a porcupine even if you were looking for them everywhere, and now they are all over the place! Not just that but the not-so-little guys are leaving plenty of signs of their presence around. And I am not just talking about the now ubiquitous

quills! They have become so bold and cheeky that they have begun excavating inside the research station area. And to top it all off they even left a nice, smelly, pile of feces near my wendy house! Thanks a lot for the nice present, mister porcupine!

WHAT DID WE TRAP THIS TIME?

The management of Goegap, with the help of the leopard trust, has for quite some times installed camera trap around the reserve in the hope of catching at least a glimpse of the elusive leopard. So far there have been plenty of spotting of rare

creatures, such as badgers, polecats, porcupines and caracals, but yet no luck with leopards. Still everyone, including us at the research station, is keeping their hopes high, so that one day we will be able to set our eyes on the mythical Goegap leopard.

PORCUPINE ON THE ROAD

As this issue of the FSM-Times is full of stories on porcupines, and as there is a little space left here at the end, I will tell about my first sighting of a porcupine in Goegap in 2001. It was on the main tar road coming from the gate, close to the turnoff to the tourist route (now a no entry road). But I was not the first one to see it: Very long and very black stripes on the road marked the braking route of someone

returning late back to the reserve (and NOT to the research station), and quills all over the road made it clear that this encounter was not a lucky one for the porcupine. But the road kill was already old and there was no skull for me to harvest. We saw porcupines twice during night drives in 2001, but they had disappeared after the drought of 2003. Its good to have them back.

GOLDEN MOUSE PRIZE-WINNERS

2009: DR. URS THALMANN

2008: KLEIN GOEGAP

2007: GOEGAP NATURE RESERVE

2006: DR. GUSTL ANZENBERGER

2005: JENS SCHRADIN