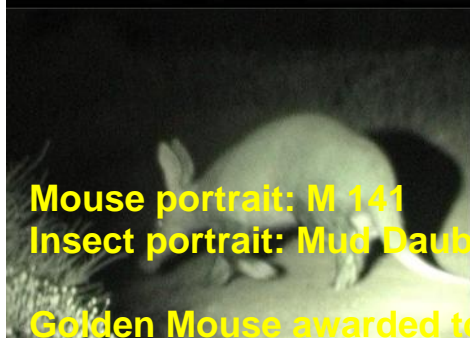


FSM-TIMES

FourStripedMouse



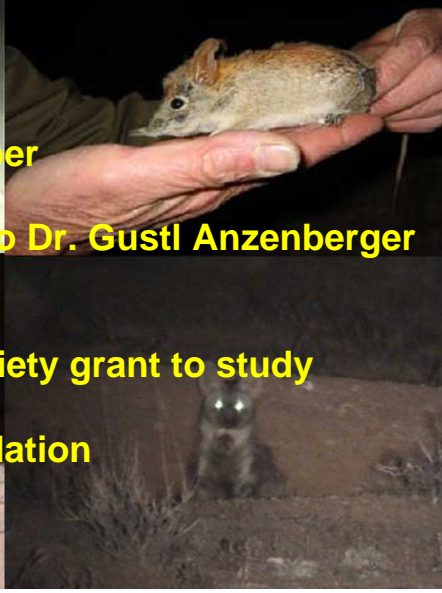
Title: Creatures of the Night: Aardwolf & Co



Mouse portrait: M 141
Insect portrait: Mud Dauber

Golden Mouse awarded to Dr. Gustl Anzenberger

Received:
National Geographic Society grant to study
elephant shrews
Grant from Holcim Foundation



EDITORIAL

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WELCOME TO THE EIGHTH ISSUE OF THE FSM-TIMES!



The last three months were rather quiet in Goegap. Melanie left in May to visit Europe for a few weeks. So the research station was deserted for several weeks. However, it was a lot busier in Europe. Melanie went to the University of Bayreuth, her home university, and in addition visited the University of Zurich for three weeks. I was very busy organising my next stay in Goegap, from July to October. Then the next breeding season will start and with the help of several students the striped mouse research will continue. Until you hear

news from our new studies, I hope you enjoy reading this newsletter. This issue of the FSM-TIMES is formatted differently: On each DinA4 page, two pages of the FSM-TIMES appear. You can now make a printout, fold each page in the middle, and staple the pages together. As a result you will have a real small magazine of the FSM-TIMES which you can take everywhere and enjoy reading it, e.g. on the way to work.

Kind regards,

Carsten Schradin

THE DIFFERENT PLACES AND LOCATIONS

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.

Field Site

This is the place in nature where the scientist collects his data. So our field site is where we observe the mice

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NAMAQUALAND-WEATHER

By Carsten Schradin

So far Goegap had a normal autumn/winter with enough rain and the area starts to look rather green

again. We expect a very good flower season and a long breeding season of the mice.

THE PEOPLE IN GOEGAP

GOLDEN MOUSE 2006 AWARD TO DR. GUSTL ANZENBERGER

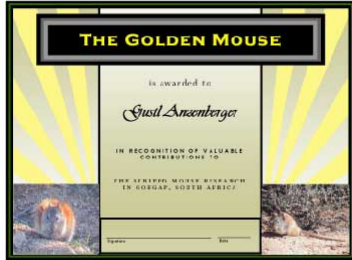
By Carsten Schradin

Once a year we award the Golden Mouse to a person who supported our research in Goegap in an extraordinary way. The choice for this year was very easy. The Golden Mouse 2006 was awarded to Dr. Gustl Anzenberger, from the Anthropological Institute of the University of Zurich. Dr. Anzenberger

was my supervisor during my PhD in Zurich (1997-2001) but continued to support my work when I left for South Africa. He wrote several letters of references for foundations, contributed some field equipment (e.g. the not-so-easy to get beepers, that make a beep every 15, 30 or 60s and which are important for the

method of pint recording) and he was also by far the most generous donor to the striped mouse foundation. In addition he sponsored two pairs of transmitters last year for the elephant shrew project of Melanie Schubert. The award was

presented the 1st of June during a seminar at the Department of Animal Behavior (University of Zurich) when Melanie Schubert presented a talk there about her elephant shrew project.



The Golden Mouse 2006 (left) was awarded in Zurich to Dr. Gustl Anzenberger.

Goegap Nature Reserve

Accommodation: Guesthouse, bush hut, camp site.

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

Tel: +27 277121880
Fax: +27 277181286

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 TUinfo@stripedmouse.com. Please write a short motivation and attach a CV. You will then obtain more information.



HOMEPAGE: STRIPEDMOUSE.COM

By Carsten Schradin

Our homepage was visited more often than during any previous quarter. There were also plenty of downloads of the FSM-TIMES. Thousands of people inform themselves about our research in Goegap. At the moment I am busy to revise the homepage. Already now

you can download many more scientific publications than before. I find any mistakes on the homepage, please let me know: I will work on it again when I am back from the field in November and will then make all necessary corrections.

Homepage Statistics

	April	May	June	Total last quarter
Visits of stripedmouse.com	1961	2041	1791	5793
Downloads FSM-TIMES, SGM-Spiegel	673	695	657	2025

TITLE: CREATURES OF THE NIGHT: AARDWOLF & CO

By Eva Jirka



As night falls in Goegap, the day starts for the creatures of the dark

The **Goegap Nature Reserve** with its area of 150 km² is located in the northern part of Namaqualand which is well-known for its splendor of wildflowers in spring. From a climatological point of view the

region lies within a semi desert zone. This describes an intermediate of savannah and desert, in which the lack of rainfall and groundwater already has significant effect, i.e. water is a limited resource. The

irregular and uncertain rain falls mainly in winter and is between 80 and 160 mm per year. Temperatures can rise up to 48°C in summer, but vary widely within the course of the day as well as in the course of the year. The vegetation consists mainly of dwarf shrubs, woody plants and succulents, which are well adapted to this environment. For animals, an important and effective way of adaptation to life in this arid region is to be nocturnal. Being active during the night provides several advantages. At night the temperatures decrease. It is also important that at night the plants serving as food have a higher water content. Predators have to be nocturnal when their prey is nocturnal.



The aardvark is strictly nocturnal and solitary, feeding on ants and termites.

In Goegap we have a total of 45 species of mammals, 25 reptile species, 3 amphibians and 94 bird species. Of those, a remarkable amount is nocturnal.

As an interesting nocturnal mammal one has to mention the timid **aardvark** (*Orycteropus afer*) with its very catchy appearance. It spends most of the day in its self made burrow underground where it hides from the heat of the day. However, each night it can cover several kilometers while it is foraging. With its pig like snout close to the ground it tries to trace ant- and termite colonies which then are dug up with the big claws on the forefeet.

The **aardwolf** (*Proteles cristatus*) also starts his search for termites at night but stays in his burrow underground most of the day. Sometimes one can see this small hyena species in the early hours of the morning or on late afternoons when it is basking in the sun in front of its burrow. It often uses abandoned aardvark-, porcupine- or hare burrows as a hiding place, which it sometimes enlarges. If no suitable burrows are available, the aardwolf is able to dig up its own new hole into the ground. In contrast to the aardvark the aardwolf does not dig up his prey, which is mainly harvester termites, but licks them up from the ground with his tongue.



An aardwolf, at night in front of its burrow, and in the morning basking in the first sun rays

A conspicuous nightly bright howling reveals the presence of the **black backed jackal** (*Canis mesomelas*), a doglike, middle-sized mammal with a characteristically black colored back. However, the black backed jackal is only nocturnal in areas where he feels disturbed by human presence, while he is also active during the day in undisturbed environments. This animal often occurs in pairs or in family groups with up to ten individuals. They feed on insects (for example grasshoppers or dragonflies) and hunt successfully for different species of smaller mammals. Sometimes they capture young antelopes or in agriculturally used regions young sheep. As burrows it uses abandoned aardvark holes or

rock ledges. In more quiet regions, where it is not disturbed by humans, the animal prefers exposed resting places, from which it can overview the surrounding area.

If one sees a **Cape hare** (*Lepus capensis*) during the day it probably sits motionless and nearly rigid in the cover of a small shrub closely ducked to the ground in a flat hollow that it digs up with its forefeet. The color of its coat camouflages well and serves as the only protection for not being captured by other animals during the day. At night this animal gets active and with sunset the hare starts its search for food which mainly consists of grass and other plants. When morning breaks it looks out for a hiding place for the following day.



The Cape hare is common in Goegap.

Many other mammals in Goegap are nocturnal, including many smaller ones like the two species of **elephant shrews** (fam.

Macroscelididae), the **hairy footed gerbil** (*Gerbillus paeaba*) or the different species of **bats** present in this region.



Elephant shrews (top) and gerbils (right) are nocturnal. If you want to study them, you also have to be active at night (top right: P. Widmann and C. Keller; top photos by G. Rathbun).



Likewise there are reptiles which only emerge from their hiding place when it is getting dark. They use the night to hunt for food. These include several species of snakes like for example the **brown house snake** (*Lamprophis fuliginosus*), which often- like its name suggests- occurs in the immediate vicinity of houses. But although it lives near to humans, during the day it is rarely seen, because the animal hides very well,

for example in compost heaps, tool sheds and the like. Its food consists mainly of small mammals. During the day the **Namib tiger snake** (*Telescopus beetzi*) hides in ledges or under the bark of trees. At night it sets out hunting, mainly for **geckos** (fam. Gekkonidae). All species of geckos found in Goegap are nocturnal. Also smaller rodents, bats and birds belong to the prey of the Namib tiger snake.



The house snake (left) and the tiger snake (right) are common in Goegap. While the house snake is common, the tiger snake is an endangered species.



The **coral snake** (*Aspidelaps lubricus*) spends the hours of daylight well protected in burrows underground or in rock. It is related to cobras and is poisonous. The bigger and heavily built **puffadder** (*Bitis arietans*) may be observed

during the day but is mainly active during the night. The animal is not able to move very fast and therefore usually lies, well camouflaged in the darkness waiting for all sorts of prey like rodents, birds or even other snakes.



The coral snake and puffadder (right) are poisonous.

As night falls, several species of birds start to wake up and begin to hunt for prey. In Goegap one has to mention first and foremost the different species of owls and eagle owls. Often observed is the **spotted eagle owl** (*Bubo africanus*). During daytime it rests near the ground, on cliffs or in trees and hunts with the

night coming up typically using telegraph poles or fence posts as a base. It mainly captures insects but also mice and birds. Because of its very similar appearance and behaviour this animal is often mistaken for the **Cape eagle owl** (*Bubo capensis*) which also occurs in the reserve but is rather rare.



The spotted eagle owl can be spotted regularly in Goegap.

While nighttime might seem very quiet at first, for a lot of species it is the time to wake up and get active. The portrayed species just give a rough outline of the diversity of nocturnal species in Goegap. Many

more interesting animals are to be discovered. That is why a close look into the night in the Goegap Nature Reserve is in any case an experience and absolutely worthwhile.



Morning has broken in Goegap: The creatures of the night disappear, while striped mice and striped mouse researchers become active.

NEWS AND INFORMATION ABOUT PLANTS AND ANIMALS

MOUSE PORTRAIT: MALE 141

By Carsten Schradin

Mother: F42	Father: M29
Date of birth: 15. October 2003	Date of death: Middle December 2004
Age: 1.2 years	Cause of death: unknown
Partners until Sept. 2003: F174, F420, F430	Partner Nov./Dec. 2004: F478
Children: 10 sons, 6 daughters	Grandchildren: unknown

The life of M141 could be called a mouse opera, I mean soap opera: Good times, bad times, keeping to the family, which is destroyed by merciless fate, but unexpectedly at the end there is a new love!

But lets start at the beginning: M141 was born in October 2003, his mother was Female 42. F42 would be very proud of her son, because no other of her children became as successful as him. When we started observing the mice in June 2004, before onset of the next breeding season, we found M141 only 100m away from his natal nest. This was rather surprising, as normally males disperse much further. But he still lived at our field site, and he was not alone. In a *Zygophyllum* shrub marked as F-2 he was nesting directly next to the dry riverbed. He was a very lucky mouse man, as he live here together with three females: F174, F420 and F430, sisters or halve sisters from the same group. In 2004, no other male had more females than M141. He and his females had a very nice territory with plenty of food and nesting sites. But nobody guessed at this stage that they also had a dangerous neighbor, who could bring death and destroy the little mouse luck.

On the opposite side of the river bed, less than 50m away from the nest of M141, was a large pile of stones, some stones being larger than a car. Under one of those was a little cave. It was stinking here and bones were fading in the sun in front of it.

One late afternoon in August when F420 was on her way back to the nest, she was ambushed at the dense reeds— at least I suppose it must have been like that . It all was

very quick, F420 did not even feel pain, but was immediately death. A few days later we found her transmitter at the entrance of the cave of the African wild cat.

Beginning of September the first pups were born at the nest of M141. The mother was probably F430, who was now lactating and thus had to spend extra time foraging to get enough energy. Like her sister she was always foraging in the cover of the shrubs at the riverbed. But one day while foraging she heard something rustle and that was the last thing she ever heard. The paw of the wild cat killed her fast and her transmitter was also found at the African wild cat's cave, from where one could even see the nest of the mice.

This happened the 20th of September 2004, and from the harem of M141 only one female was left, F174. But three days later she disappeared as well. She did not carry a transmitter, so we do not know for sure what happened to her. But the African wild cat is the main suspect!

Destiny changed the proud harem male M141 into a single parent, and this within a very short time period. One might have suspected that M141 would leave his pups behind and search for other mates. But that was not the case, and M141 spent every night in the nest with his young, and in the morning one could observe him in front of his nest where he was interacting with them. They were already weaned, more than 2 weeks old, such that they did not need their mother's milk. However, one week after the last female had disappeared, there were

additional, even young pups coming out of the nest. They were less than 2 weeks old and it was a miracle how they had managed to survive without their mother. It must have been the caring M141 who rescued their lives and helped them through this very difficult time. But how could they survive without milk? Striped mice get weaned at an age of 16 days, and these pups must have been much younger when their mother disappeared. In captivity we observed how fathers can feed their pups with saliva, and this is what M141 must have done to make them survive.

The single parent M141 was living with his young from two different females in his nest. When he came home from foraging he happily greeted his offspring at the nest. In

the meantime they had become juveniles and spent the day alone foraging by themselves. M141 staid for more than one month with his children, until they were 6-8 weeks old. This is the age when a striped mouse becomes a young adult.

At the end of October, all over sudden M141 could not be found at his nest anymore. But it was not the wild cat that had eaten him. He had moved to a neighboring group and became the breeding male there. His sons were still living in his old territory. M141 became again a father, this time with F478. Six weeks later he disappeared, and we do not know what happened. It is quite possible that a paw was playing a role, as the wild cat was still living at the pile of stones.

INSECT PORTRAIT: MUD DAUBER (*SCELIPHRON SPIRIFEX*)

By Stella Miranda Treffler

Familie *Sphecidae*

In these days we have a busy visitor in our room on the research station in Goegap: A solitary wasp, the mud dauber. The female builds large multi-celled mud nests attached to rocks, trees, bridges and human buildings. These cells are filled with several spiders as food for the larvae. The cells are about three centimeters long and sealed with mud.

You can find this insect all over South-Africa, especially near buildings and other man-made structures.

How can it survive in Goegap, where it is really dry? Well, around the research station there is anytime a leaking tube or we are cleaning some cages with water, so there is enough wet working material for this wasp.

By the way, it hardly gets aggressive.



CONFERENCES, PRESENTATIONS AND PUBLICATIONS

PUBLICATIONS

Schubert, M. Monogamy in the round-eared sengi under investigation. *Afrotheria Conservation Newsletter* 4: 14.

Schradin C, Schubert M, Pillay N, 2006. Winter huddling groups in the striped mouse. *Canadian Journal of Zoology* 117:317-324.

Abstract: Huddling is a strategy to avoid heat loss and thus save energy, and is often observed in birds and rodents, which, because of their small body size, are prone to relatively high heat loss. Huddling might thus explain group-living in some cases, such as winter huddling groups described for several northern hemisphere rodents. Here we describe winter huddling groups in an African rodent, the striped mouse (*Rhabdomys pumilio* Sparrman, 1784) from the Succulent Karoo of South Africa. Striped mice were radio-tracked and observed directly in the field. The importance of huddling in this species was demonstrated by comparing data collected over two years. The 2003 winter was characterized by a severe drought and 99% mortality. As a result, close kin were mainly unavailable and striped mice slept in non-kin huddling groups. In 2004, normal winter rainfall occurred, mortality was only 50%, and striped mice formed family groups that shared a nest at night. While family groups were stable in 2004, non-kin huddling groups in 2003 were highly flexible and often changed from night to night. Huddling groups are important for striped mice to save energy, and the instability of non-kin sleeping groups indicates the potential for conflict is higher between non-kin than between kin as well as a trade-off between thermoregulatory requirements and kin selection.

PRESENTATIONS

Schubert, M. 1. June. Monogamy without love: The round-eared elephant shrew. University of Zurich, Switzerland.

Schradin, C. Social flexibility in the African striped mouse. When to live alone and when to live in groups? Presented four times:

19. April, University of Berne, Switzerland.

19. Mai, University of Zurich, Switzerland.

20. June, Humboldt University Berlin, Germany.

21. June, Institute for Zoo and Wildlife Research, Berlin, Germany.

FUNDING OF RESEARCH: CALL FOR DONATIONS

SUBSCRIBERS DONATION

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.

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ACKNOWLEDGEMENTS

We are very grateful to the following people who donated and whose assistance contributed to the continuation of our research project.

Viktoría and Matthias Erhard, Germany. Donation of 50 Euro.

The **Holcim Foundation to Support Science** (Holderbank, cement fabricatory, Switzerland) supports the research project "Social flexibility: causes and consequences" from Dr. Carsten Schradin with CHF 19 000 (Euro 12 000). In this project we will study in how far population density influences sociality, by comparing two populations, one living around a dry riverbed with a high population density, and one living in an area with less vegetation and a low population density. It is expected that mice form groups when population density is high, but are solitary when population density is low.

The **National Geographic Society** supports our research project on monogamy in round-eared elephant shrews with US \$ 17 500 (Euro 13 500).

We are very grateful to both societies and the donors for supporting our research!

THE MOUSE'S TAIL

NEW MOUSE RESEARCHER BORN?



The 19th of March Apollo Hartmut Schradin was born. He will stay with his parents in Goegap from July to October. Already in Zurich he got used to be with mice (see photo) and we wonder how he will experience his first visit to the Land of Mice in Namaqualand.

VISIT TO ZURICH

In June, Melanie Schubert visited the Department of Animal Behaviour at the University of Zurich for three

weeks. Here she had the opportunity to talk to other PhD students.

HORMONE LAB ESTABLISHED

In June a laboratory to measure hormones was established in Zurich. Already more than 100 samples collected in 2005 were measured for corticosterone and testosterone. It is already clear that striped mice have unusually high corticosterone levels, while their testosterone levels are

rather low. Whether this means that striped mice are highly stressed or that their physiology is very well buffered against stress (such that they need more of the stress hormone to trigger a physiological stress response) is so far unknown.

SGM-SPIEGEL

The FSM-TIMES is also published in German, as the SGM-SPIEGEL. If you want to receive the German version, write an email to: info@stripedmouse.com, please write „SGM-SPIEGEL Abo“ in the subject of your email