Newsletter of the African Arachnological Society

Newsletter
no 21

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This is the newsletter of the African Arachnological Society (AFRAS). The aim of AFRAS is to foster interest in arachnids (non-Acari) of the African continent.

During the 9th African Arachnological Colloquium a new chairman was elected for AFRAS - CHARLES HADDAD. Charles is taking over from Ansie Dippenaar-Schoeman who was the chairperson for >20 years. Charles and his team at Bloemfontein will be responsible for AFRAS for the next few years. However, Ansie and the ladies in Pretoria will still be responsible for the newsletter.

NEWS FROM THE NEW CHAIRMAN

NEW WEBSITE AND LOGO FOR AFRAS –2009

During the last few months I have gone to work preparing the framework for the new AFRAS website. The design is nearly complete and was largely done by Fred Naudé of Headspace Media in Bloemfontein. The site is expected to go live during January at www.afras.co.za (various other afras domains were already taken by, amongst others, the Association for Rescue at Sea!). Web hosting will be done by the University of the Free State.

As part of the process a **new logo** for the society was also designed, which provides a much needed facelift to the previous logo, which goes back a long way! Some of the features of the new site will include:

- News and events
- A list of arachnologists involved in research on African arachnids and their contact details.
- Annual lists of scientific publications (dating back to 2004) that involve African arachnids, which will be updated annually.
- Books dealing with African arachnids.
- Pdf's of each of the annual AFRAS newsletters.
- Instructions to authors for AFRAS Natural History Notes, which will include short notes on natural history observations, to be included in future newsletters.
- Information on membership to the society.
- Details of past and upcoming AFRAS colloquiums, and
- Links to some important and interesting websites.

In order for the website and information to be as complete and up-to-date as possible, Charles would appreciate you sending details of new publications and events as soon as they are available.

Contact: Charles Haddad (haddadcr.sci@ufs.ac.za)

AFRAS
AFRICAN ARACHNOLOGICAL SOCIETY

IN THIS ISSUE

9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM

Delegates of the 9th African Arachnological Colloquium

The University of Venda (Stefan Foord) and the ladies at ARC-PPRI organized the 9th African Arachnological Colloquium. It was held from 2-8 February 2008 at Lajuma in the Soutpansberg, This year's meeting was attended by >30 people from Africa as well as visitors from Belgium, USA, South America, Germany and Switzerland.

With 4x4 vehicles the delegates were transported up into the heart of the mountain. The Africans were joined by several members of the PBI Oonopidae project and the Belgiums demonstrated how to do fogging in a Savanna Biome hoping to collect oonopids.

A total of 28 talks and 6 posters were presented. At the meeting the second workshop of the South African National Survey of Arachnida (SANSA) was also held. Research results were discussed as well as future plans.

AWARDS AND PRIZES

- Charles Haddad received the Lawrence award for his contribution to Arachnology in Africa.
- Best paper: Matthias Burger of the PBI project
- Best paper runner-up: John Roff
- Best poster: Petro Marais *et al.*
- Best poster runner-up: Sma Mathabula *et al.*
- Catch of the day: Charles Haddad (2 new corinnid genera)

NEW COMMITTEE

- Charles Haddad was elected as the new chairperson of AFRAS with a team of ladies at Bloemfontein to support him.
- The AFRAS newsletter will still to be compiled by Ansie and the team in Pretoria.

NEXT COLLOQUIUM

The next colloquium will be organized by the PPRI team in **2011** somewhere around Pretoria

African Colloquia are hard work!!!

Colloquium dinner under the African sky

9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

Winners of the photographic competition

During the colloquium a photographic competition was held of photographs submitted by the delegates, as well as photographs sent in for the SANSA virtual museum. There were three prizes: best picture, best salticid picture and best thomisid picture.

Best photograph — Jurie Kellermann

Best thomisid photograph — Hannes Mitchell

Best salticid photograph — Hannes Mitchell

A new spider poster "The magnificent eight spiders of Africa" funded by Oppenheimer & Son is now available. This poster is distributed free of charge to everyone interested in spiders, but we especially hope to reach schools.

The eight spiders depicted on the poster were chosen by members of the African Arachnological Society at the colloquium in Bloemfontein, because of their size, uniqueness and interesting behaviour. They are:

- **rainspiders** (Sparassidae *Palystes* spp.), one of the largest spiders commonly found in houses;
- **baboon spiders** (Theraphosidae *Ceratogyrus* spp.), because of the fascination the public have for them;
- **fish-eating spiders** (Pisauridae *Thalassius* spp.) for their size and very interesting feeding behaviour;
- **flower crab spiders** (Thomisidae *Thomisus* spp.) for their colourful presence on flowers and ability to change colour;
- **green lynx spiders** (Oxyopidae *Peucetia* spp.) for their green colour and size;
- **jumping spiders** (Salticidae *Hyllus* spp.) for their large eyes and presence everywhere;
- **kite spiders** (Araneidae, *Gasteracantha* spp.) for their colourful bodies and lastly
- **golden orb-web spiders** (Nephilidae *Nephila* spp.) for their colourful bodies and interesting golden webs.

To order:

Contact: Sma Mathebula at MathebulaC@arc.agric.za

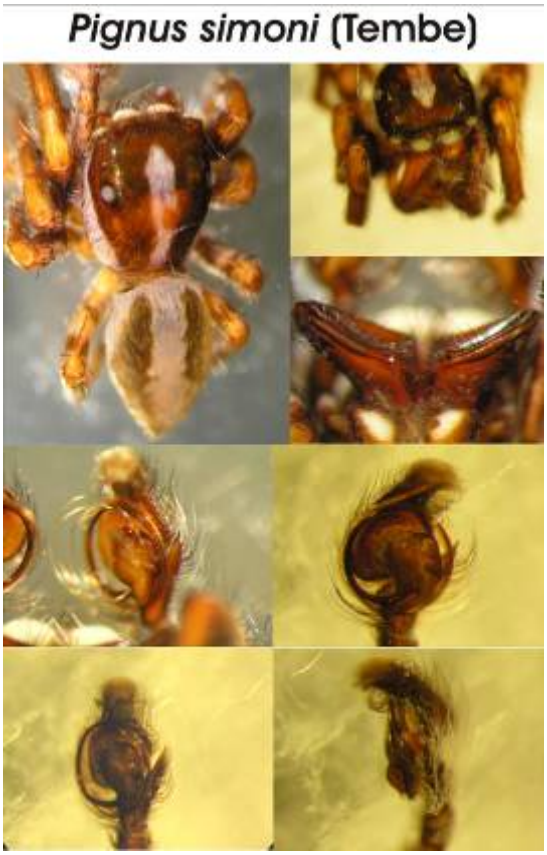
AFRICAN ARACHNIDA DATABASE (AFRAD)

The AFRAD is an online expert system (www.arc.agric.za see quick link AFRAD). This database will eventually contain information on all African Arachnida, richly illustrated with photographs and black and white line drawings.

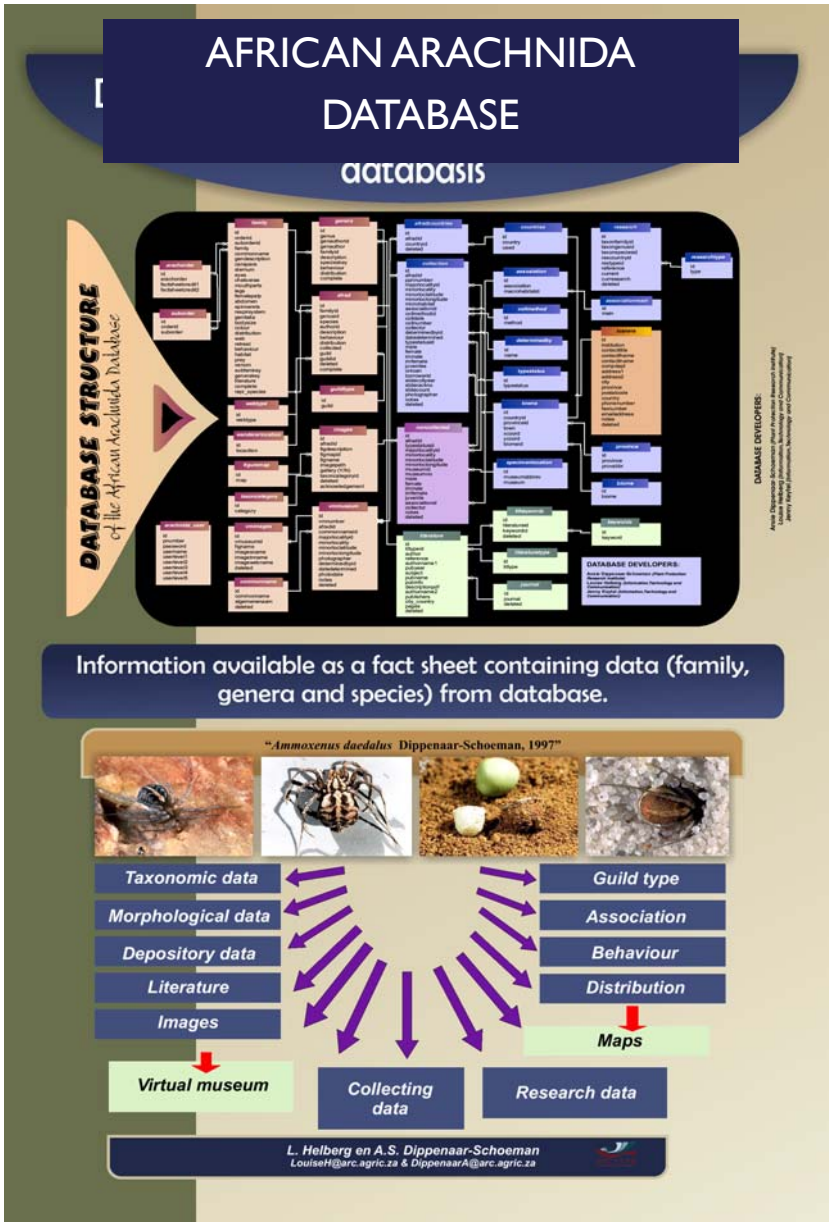
PHASE I: At the end of 2007 the first phase of the AFRAD database went live on the ARC website. Data on all 72 African spider families available and can be printed as fact sheets including information on: diagnostic and descriptive characters; behaviour; distribution; list of genera and species; research.

PHASE II: The second phase went live end of March 2008. Information on some genera and species are now available. Presently we are focussing on spiders and scorpions and large numbers of information with images are added to the database on a daily basis

Images of > 600 species have already been captured.



An example of the photographic images that will accompany the descriptions. Plate: Charles Haddad



Poster presented at the South African Academy of Science

HOW CAN YOU HELP

We are looking for photographs and information on African spiders. We hope this database will be of help to the researchers in Africa, to get specimens identified. This is a jointed product of the ARC-Plant Protection Research Institute and the African Museum in Tervuren.

We acknowledge with thanks all the images already received especially from Charles Haddad who has prepared the plate of *Pignus simoni* (one of many). All contributions are acknowledged.

With a joint effort we can have one of the best information databases for Africa.

Forward information to:
Ansie Dippenaar-Schoeman or Rudy Jocqué

NEWS SNIPPETS

WORDS FOR SOLIFUGES IN THE SAN LANGUAGES IN NAMIBIA

/konta‡in (Ju/oansi San): "He that carries the scorpion [to the fire where the scorpion stings you]."

tutugabe (!Kung San) [similar to the Ju/oansi meaning]: "He that carries the scorpion to you, where he then leaves the scorpion." Solifuges are also called the spies of scorpions as they first come to check out where you are, after which they go and call the scorpions.

N‡hava‡ava (Kwe-dam): This word does not mean anything in particular, but describes the way solifuges run. To fully appreciate the word one really needs to hear it with the proper click sounds and subtle intonations.

‡gararеb (Hai-//om): "Searching for testicles!"

Tharina Bird "we tried our best to get the correct San spelling of the words, but no guarantees…" read more on them on p.8 & 9.

MORE THAN ONE SPECIES OF *CALOMMATA*

The family Atypidae is a small family of mygalomorph spiders represented by three genera known from Africa as well as in China, Japan and East Asia. The African purse-web spider, *Calommata* is a small genus with seven known species of which one is recorded from Africa and the rest from South East Asia. *Calommata simoni* Pocock, 1903 was the first species described from Cameroon. In 1916 Hewitt described a second species *C. transvaalicus* from Roodeplaat in South Africa. However, Benoit (1967) synonymized *C. transvaalicus* with *C. simoni.*

*Calommata simo*ni is something of an enigmatic species in South Africa. It was last collected in South Africa in 1920, when specimens were collected from several localities in Gauteng and the Soutpansberg by Van Dam and Roberts.

Subsequently, no material was collected until the recent rediscovery of the species by Marianne Forsythe in the Groenkloof Nature Reserve. A single male was collected by pitfall trapping. Since then the search has been on to locate viable populations in Gauteng. In 2006 another male was collected in the Blouberg Nature Reserve by Stefan Foord, also in a pittrap.

The recent discovery of the species in the Erfenis Dam Nature Reserve near Theunissen in the Free State was quite surprising. Not only did it extend the range of the species. However, preliminary examination of the male palps showed that more than one species are involved. A project is now registered at the University of the Free State (see p. 13). Search is still on for female specimens.

Calommata male

INTERESTING WEB-SITES

- Plants of southern Africa: http://posa.sanbi.org
- Jack Skead's Gazetteer: http://skead.sanbi.org—this invaluable resource for zoologists provides a synonymy of place-names. It covers most of southern Africa south of the Kunene and Zambezi Rivers.
- A very interesting Atlas on environmental changes in Africa is now available from the United Nations Development Programme. The Atlas can be downloaded free, but a hardcopy can be ordered from www.earthprint.com. Please note the download from the UNDP site is very large:

  http://na.unep.net/atlas/AfricaAtlas/

CONGRATULATIONS

Robin Lyle for obtaining her MSc thesis with distinction from the University of the Free State. The title of her study was **"**A review of the Afrotropical tracheline sac spiders (Araneae: Corinnidae), with revisions of three genera"

Mandisa Mgobozi for obtaining her MSc form the University of Pretoria. The project looked at the effects of an invasive weed on the diversity and abundance of spiders in an African savanna.

Tembile Khoza and Mokgadi Modiba for obtaining their MSc degrees from the University of Limpopo. They have undertaken surveys in the Polokwane Nature Reserve.

See p. 16 for papers published on their research

The almost male team at Tervuren

Galina Azarkina finishes her post doc at the beginning of December 2008. She has finished the huge work on the canopy salticids, implying identification of more than 2000 specimens containing almost 300 species. The results were presented at the XXIVth European Congress in Bern (Azarkina et al. 2008),The data were encoded in the canopy database. She has continued work on the world revision of *Aelurillus* with a huge extension of the range of that genus into the Afrotropics, as far as Madagascar (Azarkina, in press). She is collaborating with Tony Russell-Smith to set up an identification key for the genera of Afrotropical Salticidae and has started a first trial with the Aelurininae. The idea is that later, in collaboration with R. Jocqué, the paper key will be transformed into an interactive one which will be made available on internet.

Domir De Bakker is continuing his work on canopy spiders and has finished the analysis of some huge samples from Luki (DR Congo). In the meantime he has identified and databased a large number of goblin spiders from non-MRAC collections (Denmark, Sweden, South Africa) to genus. These specimens are now available for further study.

Wouter Fannes continues his study on the goblin spiders from Africa, mainly West Africa, which holds a very diversified oonopid fauna. The number of genera in that part of the continent is estimated at far over twenty. One of these genera was presented at the XXIVth European Congress in Bern, August 2008 (Fannes, 2008).

Arnaud Henrard studies *Orchestina* (Oonopidae) from the canopy in the Afrotropics and has discovered many remarkable characters with the use of SEM. These will enable him to recognize several groups in the genus. He will finish his masters's by the beginning of 2009.

Moussa Diarassouba is presently following an ABIC (Afrotropical Biodiversity Information Centre) course for the identification of spiders. He will soon start a study on the ground dwelling spiders of the Taï Reserve in the Western part of Côte d'Ivoire. Although this is the major forest reserve in West Africa and figures on the World Heritage list of UNESCO, virtually nothing is known about its spiders. Results of Moussa's study will therefore be very welcome and are expected with impatience.

Visitors: During June-July 2008 Charles visited the Royal Museum for Central Africa in Tervuren, Belgium for three weeks to study their Corinnidae collection.

Last but not the least!

Rudy Jocqué continues systematic studies on Oonopidae and Zodariidae (he has papers in press).

Australutica normanlarseni Jocqué 2008

XXIV EUROPEAN CONGRESS OF ARACHNOLOGY, BERN, AUGUST, 2008.

AZARKINA, G.N., DE BAKKER, D. & JOQUÉ, R. 2008. Jumping spiders (Araneae, salticidae) in Afrotropical canopies. Poster, XXIV European congress of Arachnology, Bern, August, 2008.

DE BAKKER D., LOOSVELDT, K. & JOCQUÉ, R. 2008. Canopy spiders from savanna trees in the Afrotropical region. Presentation, XXIV European congress of Arachnology, Bern, August, 2008.

FANNES, W. 2008. A new genus and species of pouched goblin spider (Araneae, Oonopidae) from West Africa. Poster, XXIV European congress of Arachnology, Bern, August, 2008.

Team-leader: Dr Rudy Jocqué

ZIMBABWE

Meg Cumming writes:

Here in Zimbabwe politics still overwhelms and inhibits scientific endeavours. We waste a great deal of time and energy as we revert to a Stone Age foraging-type lifestyle. On the spider front, the Arachnid Colloquium in the Zoutpansberg was stimulating, instructive and highly enjoyable. I presented a paper drawing together ten years of natural history observations on the 47 species of jumping spiders collected in my garden in Harare. Additionally, Wanda Wesolowska and I finally produced our paper on the taxonomy and natural history of these spiders. I am working on other papers too.

Over the year I was invited to give three talks to the general public on the spiders and other invertebrates in my garden. Spider populations up here seem to be under stress from the hot dry weather conditions of recent years; for example, the last significant 'outbreak' of golden orb spiders was in the wet cycle of years from 1997-1999. Spider numbers in the garden are generally low these days. When will they return?

STEGODYPHUS RESEARCH

Two students from Hamburg spent two and a half months in the Mountain Zebra National Park area and were moderately successful in getting data on *Stegodyphus tentoriicola.* They worked outside the Park and found three populations, but nowhere the spiders were very abundant. Still, they have natural history observations and they hope it will make an interesting story. They brought back a few females to Hamburg and they hope these females will lay eggs so that they can raise some in the lab for further observations.

Another student of Yael Lubin - who was working in Spioenkop and Weenen Game Reserves (KZN) - was also only moderately successful with *Stegodyphus dumicola.* Populations were not large enough to do the big inbreeding/ outbreeding experiment, so she mostly collected specimens for population genetic analysis and also did some experiments on male dispersal. The latter actually turned out to be very interesting.

Yael visited Limpopo Province in October 2008 and with the help of Susan Dippenaar of the University of Limpopo was successful to collect a fair amount of *S. dumicola* nests.

Ed: We are looking forward to the results.

Stegodyphus dumicola in action Photo: Aart Louw

THERAPHOSID RESEARCH

Richard Gallon of the UK is continuing with his revisions of various theraphosid genera of Africa. Some results from his last paper on the African theraphosids:

- *Ceratogyrus bechuanicus* junior synonym of *C. darlingi*
- *Pterinochilus leetzi* junior synonym of *P. murinus*
- *Harpactirella flavipilosa* junior synonym of *P. lugardi*

Ceratogyrus darlingi Photo: Les Oates

MOZAMBIQUE

Charles and his two students, Robin Lyle and René Fourie, conducted a four-week field trip to southern Mozambique during November-December 2007. Nine sites were visited, extending from Marracuene in the south to Inhassoro in the north.

BOTSWANA

As part of an EIA survey around Francistown Ansie Dippenaar-Schoeman identified more than > 2000 specimens sampled with pittraps. The material include several interesting species including more than 100 oonopids. This is a good contribution for the PBI Oonopidae project as very little material from Botswana is available.

Oonopid from Botswana. Photo: Ansie Dippenaar

NATIONAL MUSEUM OF NAMIBIA

Solifuges have been a main focus of the arachnid section of the National Museum of Namibia under the previous curator, Eryn Griffin, and now it has returned yet again as priority! As part of the NSF (National Science Foundation of the USA) solifuge project, they are not only collected by museum staff, but also by the public who continue to bring in good specimens with interesting stories. Here the San comes to mind: We recently were privileged when five of the six traditional San leaders (chiefs) in Namibia visited the museum. They were given a tour of the arachnid collection, and we appreciated the wonderful ways in which the different San words describe the different arachnids and their biology. Three of the San groups are now actively collecting solifuges for this study – from the Gobabis area in the east, up north to the Caprivi.

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The time seemed right for another large arachnid survey, and the Sperrgebiet survey (again with a focus on solifuges and scorpions) was initiated in November this year. The Sperrgebiet covers approx. 26 000 km^2 of mostly pristine Succulent Karoo, and will be proclaimed a National Park in the very near future. We hope the survey data will contribute towards the eventual management of the area – and hopefully also deliver some magnificent specimens for ongoing research!

Namibia is currently going through a mineral exploration boom, mainly for uranium, but also for gold, etc. Given the large uranium (and some other mineral) deposits in Namibia, including inside Namibia's National Parks, Environmental Impact Assessments are currently taking place all over the country, and the specimens deposited at the museum are indeed keeping us very busy.

As part of the Namibian Arachnid Atlassing (NAA) project, developing the arachnid databases remains one of our main priorities and is currently progressing at a slow but steady pace.

Although EduVentures decided to take a break in 2008, the year started off with an EduVentures SCIENCE expedition to the Kalahari during which school learners participated in several science projects. The base camp was set up near a small San village called ǂNumdi near the Botswana border. One of the projects looked at scorpion activity and was a great success – the learners learned a lot and got some nice data on scorpions. A 52-minute documentary was made for German television (ARTE channel) covering this two-week event.

The usual visits from school groups and students continued to take place, and Benson Muramba and Hermine Inana are now known for their enthusiastic spider and scorpion presentations. A highlight recently was the visit we received from some youngsters (8-14 years of age) that have been "doing research" on spiders for some time now. One boy even recorded "the stridulation of a palpimanid spider" (his words) and we hope to hear this recording for ourselves soon! They have since visited the museum a couple of times with requests such as "could I look at a Hersilidae spider under the microscope?" Paging through their notebooks with colour-coded sketches and all is a true pleasure.

All-in-all a good year!

Bob Wharton

Another highlight of the solifuge project this year was a visit by Professor Robert Wharton (Texas A&M University, USA). Bob did his postdoc at Gobabeb on solifuges in the late 1970's, and his paper "Namibian Solifugae (Arachnida)" (Cimbebasia Memoir 5, 1981) remains to this day the most comprehensive treatment of solifuges of Namibia. The five days spent with him and his wife at Gobabeb were not only extremely informative, but also very enjoyable.

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The new love in Tharina's life. Chris you do not have a chance.

SCORPION RESEARCH

Lorenzo Prendini is actively collecting and documenting the scorpions of Africa. Below an abstract from their African Safari's during the report period. For more news, please visit the African fieldwork section of our lab website: http://scorpion.amnh.org or contact Lorenzo Prendini

East Africa (Kenya): 9 days (30 April–8 May, 2008), funded by the NSF-BS&I Solifugae grant. Samuel M. Mwangi, an M.S. student at the Africa Nazarene University, Nairobi, conducted fieldwork to collect arachnids for the grant.

Southern Africa (Malawi, Mozambique, Namibia, South Africa): 2 months (8 December, 2007–14 February, 2008) funded by a Constantine Niarchos Expedition grant from the Stavros Niarchos Foundation (Malawi and Mozambique trip) and by the NSF BS&I Solifugae grant (Namibia and South Africa trips). Lorenzo Prendini conducted three separate trips, totalling more than 20,000 km, across terrain varying from subtropical woodland to desert, in southern Africa, during the 9-week period. On the first trip, Prendini was joined by Warren Schmidt, a South African herpetologist, from Johannesburg.

South Africa (Limpopo Province): 4 days (28th to 31st December, 2007). Collectors: Ian Engelbrecht and Ruan Lambrechts. Destination: Potgietersus and Polokwane regions. Total Trip Distance: 1330km. The purpose of this trip was to try and collect several members of the *Opistophthalmus glabrifrons* species complex and a possibly undescribed species of *Hadogenes*.

South Africa (North West Province): Three short trips: 10th and 11th November, 2007; 3rd and 4th January, 2008; and 1st to 3rd February, 2008. Destination: Jericho and Borakolalo areas. Collectors: Ian Engelbrecht, Kyle Moir and Martin Paulsen. Total Trip Distance: 441km, 435km and 612km. The objective of these three short trips was to collect additional specimens of an undescribed species in the *Opistophthalmus pugnax* complex.

"I am only helping Lorenzo" photo: Andrew & Heather

SOLIFUGAE RESEARCH

Global Survey and Inventory of Solifugae

The Global Survey and Inventory of Solifugae, funded by the Biodiversity Surveys and Inventories program of the U.S. National Science Foundation (Grants 0640219 and 0640245) brings together an international team of researchers in an effort to stimulate new research, correct deficient trends evident in past research, and improve our knowledge of these poorly known arachnids. The aims of this project are as follows:

- Fieldwork will be conducted in 13 countries in four regions of greatest known diversity to discover new species, document distributions, and gather fresh material for morphological, anatomical, behavioral and genetic studies;
- The higher classification will be revised based on phylogenetic analysis;
- Monographs on large monophyletic groups (at least three family-scale revisions) will be published;
- Rigorous standards and modern techniques will be employed in research;
- Collaborations will be forged among specialists currently working largely in isolation, with resources provided to expand their research;
- New experts will be trained in traditional techniques as well as modern concepts and methods;

Results will be disseminated to the public via the internet. This project to resuscitate solifuge research, coordinated in North America but involving the world's solifuge specialists and arachnologists interested in diverse aspects of solifuge research in more than 17 countries, will invigorate solifuge research worldwide.
So everything you want to know about Solifugae visit (http://www.solpugid.com) or contact Lorenzo Prendini or Tharina Bird about the African species.

The Global Survey and Inventory of Solifugae provides many opportunities for outreach activities. In this section of the site, we profile some of those activities.

Kristie Reddick's work in Kenya

Kristie Reddick's, student of Robert Wharton, has been conducting research and collecting solpugids in Kenya. In addition to collecting data on solifuges, Kristie taught over 1000 students from seven schools across the Lake Bogoria region about solifuges and other arthropods in their home area. Her hour-long 'bug' workshops are taught in English and Kiswahili and students are encouraged to learn about arthropods through hands-on methods, gaining knowledge about collecting techniques, field identification of common arthropods, and the distinction between benign and potentially harmful animals. She also uses fear of insects and spiders as a vehicle to talk to students about prejudice and racism, career development and educational potential.

In addition, as part of her affiliation with the National Museums of Kenya, Kristie Reddick trained Head Research Technician, Mr. Joseph Mugambi from the Department of Invertebrate Zoology, in family level identification of solifuges, and in field identification and collecting techniques.

Kristie Reddick in action

SPIDER RESEARCH CENTRE ARC-PLANT PROTECTION RESEARCH INSTITUTE

SOUTH AFRICAN NATIONAL SURVEY OF ARACHNIDA (SANSA)

The female team

Elizabeth Kassimatis

- **BACKGROUND**: Most of the research time at the ARC-Spider Research Unit is spend on the South African National Survey of Arachnida (SANSA). The second phase of the SANSA project is partly funded by the South African Biodiversity Institute (SANBI) for 4-years. The project has grown and the material is streaming in throughout the country. There is a surprisingly big interest of organizations and the public to participate.
- **NEWSLETTER:** A electronic newsletter of the South African National Survey of Arachnida are released every 3-4 months The aim of the letter is to keep everybody updated on the SANSA activities in South Africa. This fully electronic newsletter is distributed to all interested persons free of charge. Interested persons who would like to receive the newsletter can contact Ansie or can download it from the SANSA website at www.arc.agric.za (see quick link SANSA)
- **SANSA WEBSITE:** Activities and reports on the South African National Survey of Arachnida are released regularly on the SANSA website at www.arc.agric.za (see quick link SANSA)
- **VIRTUAL MUSEUM**: (see p. 12)
- **AFRICAN ARACHNIDA DATABASE**:(see p. 4)
- **VISITOR**:(see p. 12)
- **SURVEYS**: (see p. 11)
- **PRESENTATION AT CONGRESSES**: 12 papers; 6 posters
- **TALKS**: 9
- **MEDIA**: 34 radio talks; 5 TV recordings

SANSA NEWSLETTER

SANSA WEBSITE

The Spider Research Centre at PPRI, received R60 000 from SABIF (South African Biodiversity Information Facility) to capture primary specimen data of specimens housed in the National Collection of Arachnida into a relational database.

SOUTH AFRICAN NATIONAL SURVEY OF ARACHNIDA CONTINUED

SURVEYS UNDERWAY

EASTERN CAPE

- Addo Elephant National Park
- Baviaanskloof
- Baviaanskloof Nature Reserve
- Dwesa Forest
- Hogsback Afromontane Forest
- Jeffreysbay
- Kei Mouth Coastal Forest
- Silaka Nature Reserve
- Mkhambathi Nature Reserve

FREE STATE

- Doornkloof, Riemland
- Erfenis Dam Nature Reserve
- Franklin Nature Reserve
- Golden Gate National Park
- Kalkfontein Dam Nature Reserve
- Mpetsane Conservation Estate
- National Botanical Garden (Bloemfontein)
- Sandveld Nature Reserve

GAUTENG

- Botanical Gardens: Pretoria; Walter Sisulu
- Kliprivierberg Nature Reserve
- Roodeplaatdam Nature Reserve
- Suikerbosrand Nature Reserve

KWAZULU-NATAL

- Greater St Lucia Wetlands Park
- Hluhluwe Nature Reserve
- Ithala Nature Reseve
- Maloti Drakensberg Transfrontier Park
- Mkhuzi Nature Reserve
- Ndumo Game Reserve
- Ngome State Forest
- Opathe Nature Reserve
- Phinda Nature Reserve
- Sani Pass
- Tembe Elephant Park
- Vryheid Nature Reserve
- Weenen Nature Reserve

LIMPOPO PROVINCE

- Blouberg Nature Reserve
- Entabeni Nature Reserve
- Limpopo Valley
- Leopard Creek Private Reserve
- Mogalakwena Nature Reserve
- Nylsvley Nature Reserve
- Polokwane Nature Reserve
- Soutpansberg Conservancy
- Springbok Flats
- Welgevonden Nature Reserve

MPUMALANGA

- Steenkampsberg grasslands
- Kruger National Park
- Lowveld National Botanical Garden

NORTHERN CAPE

- Augrabies National Park
- Central Karoo
- Richtersveld National Park
- Tswalu Game Reserve

NORTH-WEST

- Pilanesberg Nature Reserve
- Rustenburg Nature Reserve

WESTERN CAPE

- Anysberg Nature Reserve
- Boland Mountains
- Brackenfield Nature Reserve
- Cedarberg Wilderness Area
- De Hoop Nature Reserve
- Gamkasberg Nature Reserve
- Goukamma Nature Reserve
- Gouritzmond
- Jonkershoek Nature Reserve
- Kamanassie Nature Reserve
- Keurbooms Nature Reserve
- Karoo National Park
- Knysna area
- Kogelberg Nature Reserve
- Limietberg Nature Reserve
- Mountain Zebra National Park
- Oudtshoorn
- Outeniqua Nature Reserve
- Robben Island
- Robberg Nature Reserve
- Swartberg Nature Reserve
- Table Mountain National Park
- Worcester Nature Reserve

NEW RECORDS FOR SOUTH AFRICA

Agelenidae *Malthonica* sp.
Araneidae *Gea transversovittata* Tullgren, 1910
Corinnidae *Graptartia granulosa* Simon, 1896
Gnaphosidae *Zelotes hananganensis* FitzPatrick, 2007
Lycosidae *Allocosa tuberculipalpa* (Caporiacco, 1940)
Miturgidae *Cheiracanthium punctipedellum* Caporiacco, 1949
Oecobiidae *Oecobius putus* O.P.-Cambridge, 1876
Oxyopidae *Oxyopes dumonti* Vinson, 1863
Philodromidae *Thanatus multipunctatus* Strand, 1906
Philodromidae *Thanatus lamottei* Jezequel, 1964
Salticidae *Liliput* sp.
Sparassidae *Olios aristophanei* Lessert, 1936
Sparassidae *Olios freyi* Lessert, 1929
Theridiidae *Euryopis funebris* (Hentz, 1850)
Thomisidae *Synema reimoseri* Lessert, 1928

SOUTH AFRICAN NATIONAL SURVEY OF ARACHNIDA CONTINUED

VISITOR

Dr Tony Russell-Smith

Dr Tony Russell-Smith of the UK visited the Spider Unit from 10-24 August 2008. His visit was funded through the SANSA project. This is one of the Threatened Species projects of South African National Biodiversity Institute (SANBI). He assisted with the identifications of the spider families Lycosidae and Linyphiidae. Two difficult families of which there are a large number of material in the NCA,

During his visit a lecture series was organized at the ARC-Central Office. Three lectures were presented to about 40 interested people from the ARC, University of Pretoria and SANBI. The title of the lectures were:

RUSSEL-SMITH, T. & DIPPENAAR-SCHOEMAN, A.S. Spiders the farmers' best friend.

DIPPENAAR-SCHOEMAN, A.S. The South African National Survey of Arachnida (SANSA).

HELBERG, L. & DIPPENAAR-SCHOEMAN, A.S. AFRAD the online databases available to the public. (live illustration)

VIRTUAL MUSEUM

The virtual museum is growing rapidly and the images produced by >130 photographers have already been entered into the database totalling 840 entries (about 1600 images), while >100 are still waiting to be entered.

Visit the site www.arc.agric.za (quick link SANSA, virtual museum). Presently you will be able to search by photographer or common name and species name of spider. We hope to improve the website's capabilities in 2009 so that a search can be undertaken on the families and genera as well.

Not all spiders can be identified to species level due to the importance of the genitalia in species identification, but with the more common species a specific identification can be given.

Many photographers capture the spider specimens in order to confirm the species identification, especially when it is a rare specimen. We make use of a team of experts to help with the identifications, and frequently we receive the answer "possibly new genus and species" from the specialists, so those specimens will be very important to collect for descriptive purposes.

For more information or sending your photographs, contact Ansie Dippenaar-Schoeman at DippenaarA@arc.agric.za

EXAMPLES OF PHOTOGRAPHS RECEIVED

Natta sp. from Wonderboom Hannes Mitchell

New *Hamataliwa* from Mosselbay Sally Adam

New thomisidae genus? Martie Reeder

NATIONAL MUSEUM, BLOEMFONTEIN

Leon is continuing with his research on the *Cheiracanthium* of the Afrotropical Region. In his first *Cheiracanthium* paper in 2006 he revised known species. In his second paper that was distributed early in 2008 he described 12 new species. In a third paper (in prep) he will describe about 10 new species for Madagascar.

After he has completed the sac spiders he will give all his attention to the *Loxosceles* and *Sicarius* genera. In the mean time he is continuing with long term projects to document the Arachnida fauna of the Free State.

Fieldwork kept him busy and he has undertaken trips to several areas in the Free State. This combines the National Museum projects for the spiders and scorpions of the Free State and the SANSA project. He visited the Sandveld Nature Reserve, Hoopstad (22-25 & 28-31 January 2008); Reitz, and Fankfort districts (18-22 & 25-29 February 2008) and Kalkfontein Dam Nature Reserve (3-7 & 10-14 March 2008)

A talk on spiders was presented to a gardening club in Bloemfontein.

Leon Lotz

UNIVERSITY OF THE FREE STATE

THREE NEW TRACHELINE GENERA FROM THE AFROTROPICAL REGION

Recently, three new genera of tracheline sac spiders (Corinnidae) were described from southern Africa by Charles Haddad and Robin Lyle, adding to the recently described *Spinotrachelas* from South Africa. *Fuchiba* (6 new species), *Fuchibotulus* (2 new species) and *Poachelas* (3 new species) each have very distinctive somatic and genitalic morphology compared to *Trachelas*, with which they may be confused based on their small size and colouration. A separate paper will be submitted for publication soon in which additional new genera from tropical Africa will be described.

Further reading:

HADDAD, C.R. & LYLE, R. 2008. Three new genera of tracheline sac spiders from southern Africa (Araneae: Corinnidae). *African Invertebrates* **49**: 37-76.

Charles Haddad at Twee-Rivieren

UNIVERSITY OF THE FREE STATE (CONT.)

- Charles and his two students, Robin Lyle and René Fourie, conducted a four-week field trip to southern Mozambique during November-December 2007. Nine sites were visited, extending from Marracuene in the south to Inhassoro in the north. Although the collecting was focused on Corinnidae, all spiders were collected, including some really interesting Salticidae, Thomisidae and Zodariidae.
- During June-July 2008 Charles visited the Royal Museum for Central Africa in Tervuren, Belgium for three weeks to study their Corinnidae collection. All available castianeirines were identified to genus level at least, and some material of Corinninae and Trachelinae was also studied. Many new species were discovered and will be described in due course.
- Robin Lyle completed her M.Sc on the taxonomy of Afrotropical Trachelinae and passed with distinction. Despite the large number of new species she described (48 *Trachelas* and 10 *Cetonana*) several additional new species have subsequently been discovered in various museum collections and as part of SANSA surveys in South Africa. Presently Robin is doing descriptions of the latter species so that they can be included in the revisions submitted for publication. Additionally, descriptions of new species of *Thysanina* and *Spinotrachelas* are also underway.
- René Fourie continues her study of spiders in the Erfenis Dam Nature Reserve in South Africa. While sorting the pitfall material she found eight specimens of *Calommata* (Atypidae), which represent the first records from the Free State Province. During 2009 she will visit the Royal Museum for Central Africa and revise *Calommata* together with Rudy Jocqué and Charles Haddad.

Team leader: Charles Haddad

Fuchiba aquilonia

Fuchiba capensis

Poachelas striatus

UNIVERSITY OF VENDA

Stefan Foord as part of the Thuthuka Project for the Savanna Biome sampled the pristine Blouberg Nature Reserve over a two year period. Results from the survey in the Blouberg have been finalized. A total of 131 hours of sampling (pitfall trapping, branch beating, sweepnetting, leaf litter sifting, and active searching) evenly spread between four habitats, over two time periods (November 2005 and March 2006) were undertaken.

The survey structure consisted of a standardized modified Coddington sampling protocol in four habitats, relatively homogenous with the following trees dominating each habitat respectively: *Spirostachys africana*, *Philenoptera violaceae*, *Sclerocarya birrea* and *Kirkia acuminata*.

We processed 1326 adult spider specimens that belonged to 202 species in 35 families. A male of the very rare atypid genus *Calommata* was also recorded from the reserve for the first time. The main focus of the survey was to assess the possible use of spiders as biodiversity surrogates. The structured nature of the sampling allowed us to estimate species richness of each habitat.

View of the Blouberg

9th COLOQUIUM

Stefan was the principal organizer of the 9th African Colloquium in the Soutpansberg. The foreign delegates at Lajuma.

SANSA SURVEYS

As part of SANSA Stefan and his team also undertook several surveys in the Limpopo Province

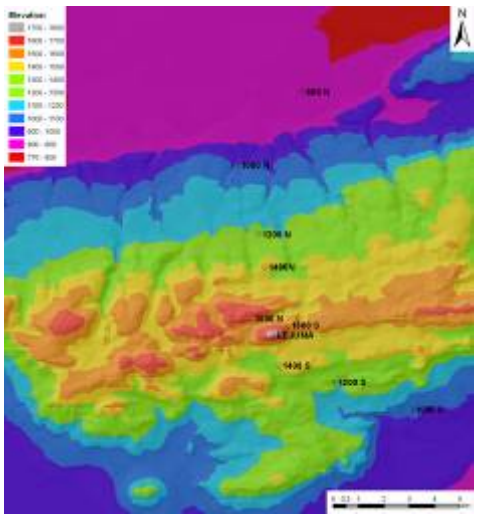
- Leopard Creek Private Reserve (Waterberge)
  Collecting dates: 6-11 December 2007
- Mogalakwena Nature Reserve, near All Days
  Collecting dates: 13-17 January 2008
- Entabeni Nature Reserve
  Collecting dates: 11-15 February 2008
- Makuya, Tshikondeni
  Collecting dates: 17-21 February 2008
- Venetia Mines, near Mussina
  Collecting dates: 2-8 March 2008

Team leader: Dr Stefan Foord contact at Stefan.Foord@gmail.com

Sampling at Mogalakwena Nature Reserve

NEW LONG TERM SURVEY IN THE SOUTPANSBERG

The monitoring of a long-term altitudinal transect across the Soutpansberg will now be done on an annual basis starting in November 2008. This will largely involve pitfall trapping, with a view to track individual species and community responses to global climate change .



SPIDERS AT THE IZIKO

* Active field work was rather restricted in 2008. Field projects planned for this summer includes work on *Avelopsis* and *Australutica.* Rudy Jocque is thanked for *Australutica normanlarseni* and we will find more specimens including the elusive female.

* A major revision of the late Martin Filmer's book *"Southern African Spiders - An Identification Guide"* for Struik Publishers has been completed and is due for publication in 2009. Work, in conjunction with Dr Ansie Dippenaar-Schoeman, is now resuming on the Catalogue of spiders of Table Mountain National Park.

* Educational lectures and walks have continued as well as assisting university students with projects. One radio interview took place. The South African Museums web is continually being expanded and updated including new pictures. The Spider section peaked with 4700 hits in one day. The numerous queries, on spider identification and bites, including myth busting, is very time consuming but interesting.

* Various overseas arachnologists have been assisted with Tony and Michele Russell-Smith visiting Cape Town during one of the wettest winters in the last 50 years. Tony took the collection of theraphosids confiscated from Richard Gallon, with additional material, to Richard. *Harpactira* was last worked on with the description of *Harpactira baviana* in 1908 so a revision is of great importance for biodiversity research.

* The photographic documentation of live spiders is moved into a new phase now that digital is with us and the cost of film has been eliminated.

Contact: Norman Larsen (Associate Arachnologist
Iziko, South African Natural History Museum.)
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Email: spiderboy@telkomsa.net
Web: http://www.biodiversityexplorer.org

Tony and Michele Russell-Smith

SPIDER CLUB OF SOUTHERN AFRICA

John and Astri were part of a team doing a live video streamed broadcast called Safari Live for the National Geographic channel on 10th and 11th November.
Astri presented talks "Fascinated by Spiders" at the regular Africa Geographic Readers' evenings in Durban on 12th November, Sandton on 20th November and Cape Town on 27th November and at the Lowveld National Botanical Garden on 21st November.

YEBO GOGGA

Two young Spider Club members, James and Callum at Yebo Gogga which ran from 27th - 30th September 2008 at the Oppenheimer Life Sciences Building of the University of the Witwatersrand. As usual the Spider Club spider and scorpion stand was a huge draw-card!

A future arachnologist?

LOWVELD NATIONAL BOTANICAL GARDEN SURVEY

The team of Lou-Nita Leroux, Jurie Kasselman and Schalk Schoeman with help from some of the other Lowveld spider fanatics from time to time, are servicing the pit traps and tree traps at the Lowveld Botanical Garden. The pit and tree trapping will carry on until next spring.

John Leroy surveying ground for a pit trap at the Lowveld National Botanical Gardens

GOBABEB TRAINING AND RESEARCH CENTRE, NAMIBIA

Team leader Joh Henschel

Gobabeb continues to be active in terms of research, encompassing own projects, visiting scientists and student projects, and this includes arachnology. Long-term population censuses of dune-living white lady spiders (*Leucorchestris arenicola*, Sparassidae, 22 years), spoor spiders (*Seothyra henscheli*, Eresidae, 21 years), and corolla spiders (*Ariadna* sp, Segestriidae, 15 years) of the gravel plains continue to be conducted by annually by research technicians Hiskia Mbura and Mycke Matengu with the help of enthusiastic interns from Namibia and abroad. Analyses of the long-term trends in comparison to climatic events and insect populations are overseen by the Coordinator of the Environmental Observatories Network of Gobabeb, Dr John Irish.

After completing his PhD on the nocturnal long-distance navigation of *Leucorchestris arenicola* at the University of Zürich, Switzerland, Thomas Nørgaard is refining studies on the senses and mechanisms involved in navigation of these spiders. Now a post-doctoral researcher of the University of Lund, Sweden, Thomas regularly visits Gobabeb to conduct experiments. Using increasingly high-tech methods, Thomas' research is unveiling remarkable characteristics of night-time vision and related behaviour that these huntsmen males employ in their outward and return journeys. We can expect many more discoveries to come from this series of studies.

As part of her preparations for her PhD studies, Tharina Bird conducted two years of pitfall trapping on the gravel plains and dunes near Gobabeb. She is also analysing the solifugids that are being collected by Gobabeb research technicians since 2004 in thrice a year pitfall trapping campaigns at 11 sites across Namibia in the BIOTA project (Biodiversity Transect Africa). Prof. Bob Wharton accompanied Tharina to Gobabeb (and many other places), his first visit since he did his post-doctoral work on solifugids at Gobabeb, ending in 1980. Since Bob's visit this year, *Metasolpuga picta*, a diurnal solifugid studied by Bob 30 years ago, are currently very active around Gobabeb.

Continuing his interest in arthropods, Corris Kaapehi, is now at Gobabeb to compile an arachnid field guide for the area around Gobabeb. At the same time he is finalising his BTech thesis on "the Diversity and Abundance of Small Mammal, Reptile and Arthropod Communities at Cape Ground Squirrel (Xerus inauris) Colonies". Watch this space for more arachnological action.

In 2001-2, Diversitas International Biodiversity Observation Year established the Global Litter Invertebrate Decomposition Experiment (GLIDE), with Gobabeb as one of 40 sites world-wide. The micro-invertebrate fauna included arachnids such as mites and pseudoscorpions (probably consumers of the decomposers). 2008 saw the publication of this mega-project.

The various studies on arachnids are enjoying much exposure at Gobabeb, where they form part of several training programmes. They also featured strongly at Gobabeb's Open Day and Namib-Naukluft Centenary celebrations this year, and have prominence in the book "Namib – secrets of a desert uncovered" by Mary Seely and John Pallett (Venture Publications). This experience was summed up by the EduVenture kids on Gobabeb Open Day who remarked "I never knew the desert is so beautiful!" and "this was the most wonderful experience ever!"

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RECENT ARACHNOLOGICAL PUBLICATIONS

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ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM

SPERM DUMPING IN A HAPLOGYNE SPIDER

BURGER, M.
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Females of *Silhouettella loricatula* (Arachnida: Araneae: Oonopidae) manage to process sperm in an unusual and previously unknown way. The male ejaculate consisting of spermatozoa and globular secretion is enclosed in a secretory sac. This may avoid the mixing of sperm from different males and at least severely limit sperm competition. The process of sperm enclosure happens within the female's sperm storage site (receptaculum) since the ejaculate is not surrounded by a sac inside the male's sperm transferring organs (palpal bulbs). The secretion forming the sac is produced by glands adjoining the receptaculum. The possibility that globular secretions in the male palpal bulbs partly contribute to the sac cannot be ruled out completely. It is suggested that in *S. loricatula* the main function of sperm enclosure in a sac is enabling females to dump the ejaculate of a male. During five first and three second copulations in the laboratory, the dumping of a sac was observed. One dumped sac was sectioned and contained spermatozoa. Two couples were flash-fixed with liquid nitrogen early during copulation, which revealed the mechanism of the sac dumping. By muscle contractions, the receptaculum is bent backwards and the sac moved into the genital opening. The actual sac dumping happens most probably in cooperation with the male, which moves his pedipalps rhythmically during the entire copulation. Extensions and furrows on the emboli suggest that they may additionally be used as copulatory courtship devices. The enclosure of sperm from the current male in secretion takes place during or immediately following copulation as all mated females sacrificed after copulation had a new sac containing spermatozoa in the receptaculum. Dumping sperm of a previous male during the next copulation may allow females to bias sperm precedence.

THE SEPARATE LIVES OF 47 SPECIES OF JUMPING SPIDERS (ARANEAE: SALTICIDAE) INHABITING A ONE-HECTARE SITE IN SUBURBAN HARARE, ZIMBABWE; A TEN-YEAR STUDY

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The attributes of a community of 47 species (31 genera) of jumping spiders, living in a one-hectare, semi-natural, lightly suburbanised, well treed, site in Harare, Zimbabwe, were monitored for 10 years, from mid-1998 to mid-2008. The site falls in the seasonal tropical zone of savanna ecosystems, characterised by variable rainfall patterns, with wetter and drier cycles. The taxonomy and natural history of the entire community were described by Wesolowska & Cumming (in press). Twenty-one species (45%) were recorded every year for 8-10 years, 15 species for 3-7 years, with 11 vagrant species recorded in 1-2 years only. The community was thus fairly stable, although two formerly abundant 'resident species' (the 31 species recorded in 4 or more years) were lost, one to a change in micro-habitat and one to a change in rainfall pattern, and their niches remain unfilled. Of the 36 non-vagrant species, abundance was very low in 4 species (0-9 records), low in 10 (10-29 records), moderate in 15 (30-199 records) and high in 7 species (200+ records). For each species the following characteristics were delineated: size-classes of males and females, preferred micro-habitats, preferred prey, foraging strategy, and phenology (mating and juvenile hatching seasons). A table summarising these broad-scale data for the 31 resident species revealed the lives of each to be unique. Where two lifestyles overlapped closely, further finer-scale differences existed between them. Differences in nests and refuges, brood attendance, sexual dimorphism and intraspecific tolerance were also noted. Inter-specific aggression was seldom observed. Of the 11 vagrant species, 7 individuals were adult males and 6 adult females, 6 were caught in the hot-dry season and 5 in the hot-wet season; they shared few characteristics. Four factors that may have contributed to enhanced salticid diversity at this site are: (a) increased micro-habitat heterogeneity resulting from a mix of indigenous and exotic plants, and from man and his structures, (b) watering of selected patches through the dry seasons, especially in neighbouring gardens, (c) varying annual and seasonal patterns of rainfall, and (d) opportunistic import of spiders into the site in packages (e.g. fresh vegetables) and in vehicles.

SPIDERS CAN HELP THE AFRICAN FARMER TO COMBAT PESTS

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Agriculture is the most important economic sector in most non-oil exporting African countries. It constitutes approximately 30% of Africa's GDP (gross domestic product) and contributes about 50% of the total export value, with 70% of the continent's population depending on this sector for its livelihood. Production is subsistant in nature with a high dependence on rain. Some of the world's poorest nations are found in Africa. There is global recognition that hunger and the cycle of poverty in Africa are two of the most significant development challenges that the world faces today. Raising agricultural productivity is essential for reducing rural poverty and enhancing food security. Meeting the challenges of African agriculture means creating new knowledge management systems and information networks. Africa has a rich fauna of spiders with more than 6000 known species. Studies have shown that spiders are abundant in African agro-ecosystems and form a major part of the predatory complex in crops and could be important in regulating pest species in both commercial and smaller developing farms. As predators, spiders have a two-fold function. Not only do they feed directly on their prey, a variety of insect and mite pest species, but their presence causes a disturbance that leads to indirect mortality. With increased interest in non-chemical control strategies, the need to understand this diverse group of animals and the role they play in our agro-ecosystems is increasing. However, before they can be economically utilized, spiders must be collected, studied and the results integrated into information systems. It is predicted that hundreds of potentially useful biological control agents are still unknown to man. Farmers must therefore be made aware of their existence to consider their role in integrated pest management programmes. An overview of research on spiders in agro-ecosystems on the African continent is provided.

THE SOUTH AFRICAN NATIONAL SURVEY OF ARACHNIDA (SANSA)

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South Africa has a rich arachnid fauna with about 5000 known species, which represent 6% of the global arachnid diversity. Currently 75% of the arachnids are endemic to South Africa. Although they constitute an abundant and successful group of invertebrates in South Africa, they are still poorly sampled with information scattered through the literature. To overcome this problem, the "South African National Survey of Arachnida" (SANSA) was initiated in 1997 in accordance with the country's obligations to the Convention of Biological Diversity (CBD). SANSA is an umbrella project dedicated to unify and strengthen biodiversity research on arachnids in South Africa. The information is organized in a relational database (32 000 entries) and 30 projects are currently running involving 11 institutions. Through the Spider-Educare programme the public are made aware through education, training and participation. Ten post-graduate students are involved in projects contributing to capacity building and strengthening of research infrastructure. Information is made available through a series of lectures, newsletters, a SANSA website, virtual museum and publications. Survey thrusts focus on surveys in the different floral biomes, agro-ecosystems and conserved areas. The second phase of SANSA started in 2007 in partnership with the South African National Biodiversity Institute (SANBI). Phase II will be focusing on the conservation status of selected families of South African spiders and scorpions. Poorly sampled areas were identified through GAP analysis and new surveys will gather information to determine the distribution, relative abundance and conservation importance of these taxa. This will also dramatically increase the quantity of material available to taxonomists for study. Results of the first ten years of SANSA are also reviewed and the way forward is discussed.

ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

SANSA SURVEYS IN THE FREE STATE: THE SPIDER FAUNA OF THE MPETSANE CONSERVATION ESTATE (ARACHNIDA: ARANEAE)

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Loss of natural habitat is the biggest single cause of biodiversity loss in terrestrial ecosystems. Thirty-four percent of South Africa's 440 terrestrial ecosystems are currently regarded as Threatened. Five percent (21 ecosystems) of these are considered as Critically Endangered, most of which are within the fynbos (14) and forest (5) and grassland (1) biomes. Thirteen percent are Endangered, mostly in the grassland and savanna biomes. Sixteen percent (70) are considered to be Vulnerable, most of these being in the fynbos and grassland biomes. Only 3% of lowland fynbos and 2.2% of grasslands are formally conserved. Grasslands are ancient, and date back to well before the break-up of the earth's landmass into continents and oceans. Today the grassland survives only in South Africa and represents about 16.5% of the total land area. The grassland biome dominates the central part of South Africa, and is composed of a rich diversity of flora and fauna. The Free State had remained largely unexplored with regards to spider species diversity in natural habitats. Arachnids have been collected over a period of three years from Mpetsane Conservation Estate (28°48'S; 27°39'E) near Clocolan, in the Free State, South Africa. The estate is on average 1700 m above sea level, with an annual rainfall of 720 mm and covers an area of 310 ha. The spider check list contains 112 species, 91 genera from 32 families. The Araneidae is the most diverse spider family with 16 species (14.3 % of total) followed by the Thomisidae with 13 species (11.6 % of total) and Theridiidae with 10 species (9.3 %). The majority of species (66) are wandering spiders (59 %) while 46 species (41 %) build webs. The free-living ground dwelling spiders comprise 34 species while 32 species have been collected from the plant layer. All species are new records for the area and 5.6 % of the total known South African spider fauna are protected in this Conservation Estate.

A REVIEW OF SPIDERS FROM CAVES IN SOUTH AFRICA

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An assessment of the present status of spiders (Araneae) from caves from South Africa was undertaken. A total of 45 species from 21 families are known from 31 cave complexes in South Africa. Of the species collected, only 11 species are regarded as true cave spiders (troglobites), while 16 are troglophiles found inside and outside caves. The rest of the species are accidentals that accidentally landed in caves and they are found mainly at the entrances. The baseline information gathered here is needed to determine where surveys are still needed for the development of management strategies for conservation planning of cavernicolous spiders. This study forms part of the South African National Survey of Arachnida (SANSA).

SANSA SURVEYS OF THE SAVANNA BIOME: THE RICH ARACHNID FAUNA OF THE NYLSVLEY NATURE RESERVE (ARACHNIDA: ARANEAE, SCORPIONES)

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As part of the South African National Survey of Arachnida (SANSA), projects are underway to determine the biodiversity of arachnids present protected in conserved areas in South Africa. Spiders and scorpions have been collected over a period of 30 years from the Nylsvley Nature Reserve, South Africa. The spider check list contains 173 species, 132 genera from 37 families. The Thomisidae is the most diverse spider family with 33 species (19.6 % of total) followed by the Salticidae with 19 species (10.9 % of total) and Araneidae with 18 species (10.4 %). The majority of species (124) are wandering spiders (71.1 %) while 49 species (28.3 %) build webs. The free-living ground dwelling spiders comprise 37 species while 73 species have been collected from the plant layer. A total of 157 species are new records for the reserve and 6.5 % of the total known South African spider fauna are protected in this reserve. The scorpion fauna of Nylsvley comprises five species in four genera and two families (5 % of the scorpion species recorded in South Africa). Buthidae are more diverse in the reserve, with four species and two genera represented. The scorpion fauna of the reserve includes two fossorial species and two epigean species, representing five ecomorphotypes: semi-psammophilous; pelophilous; lithophilous; corticolous and lapidicolous. As many as five additional scorpion species may be recorded if the reserve is sampled more intensively using appropriate techniques.

PRESENT STATUS OF THE SOLIFUGAE (SUN-SPIDERS) OF SOUTH AFRICA (ARACHNIDA, SOLIFUGAE)

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As part of the South African National Survey of Arachnida (SANSA) inventories are underway to determine the diversity of the Arachnida fauna of South Africa. The first step in such surveys is to determine the present status of each group. This paper reports on the present status of the Solifugae of South Africa. South Africa has a rich fauna of Solifugae represented by six families, 19 genera and 143 species and eleven subspecies. This represents 13.3 % of the world's fauna. Endemicity is high and 93 species (65 %) are endemic to South Africa. Three of the 19 genera are endemic to South Africa namely *Toreus*, *Hemiblossiola* and *Melanoblossia*. Most species have a restricted distribution range and 75.5 % of the species recorded are known only from one province while 14.7 % have been recorded from two provinces. Only three species *Solpugema hostilis* (White), *Zeria ferox* (Pocock) and *Z. monteiri* (Pocock) have a very wide range occurring throughout South Africa. Solifugids are more common in the warm and arid regions of the country and twice as many species are found in the drier western and northern half of South Africa than in the east. No sunspiders are protected by law but 24 species are presently conserved in parks and reserves in South Africa.

ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

SPIDERS IN CITRUS ORCHARDS IN SOUTH AFRICA (ARACHNIDA: ARANEAE)

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South Africa is the third largest exporter of citrus fruit in the world and steadily increasing in importance. Spiders are numerous in South African orchards and form a major part of the predatory complex in citrus trees preying on a variety of arthropod pest species. With increased interest in reduced chemical control strategies, the need to understand this diverse group of organisms in our agro-ecosystems is increasing. However, before farmers can consider their role in integrated pest management programmes, spiders must be collected, studied and integrated into an information system. This study reports on spiders that were collected over a 25-year period from 11 sites in 5 different citrus-growing areas in South Africa. In the orchards most spiders were collected by hand or with a beating tray. Data of quantitative studies undertaken in some orchards are also included. Presently 21 families represented by 135 genera and 198 species have been recorded. The Thomisidae family is the richest in species numbers (28), followed by the Salticidae (24), Araneidae (23) and Theridiidae (20). Most species collected are wanderers constituting 58.2 % of the spiders found compared to the web dwellers 41.8%. This survey falls within the framework of the South African National Survey of Arachnida (SANSA) of spider assemblages in agro-ecosystems.

HOW DIVERSE ARE ARBOREAL OONOPID ASSEMBLAGES? AN ESTIMATE BY MEANS OF CANOPY FOGGING

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In this talk we present the results of our studies on the structure of arboreal oonopid assemblages of Afrotropical rainforests and savannahs. Canopy-dwelling spiders were collected by insecticide knockdown fogging at 11 rainforest and 3 savannah sites in West, Central and East Africa. In two lowland rainforests (Luki, DR Congo and Kakum, Ghana) and two savannahs (Faro, Cameroon and Mkomazi, Tanzania). Oonopidae were the second most abundant spider family, comprising up to 22% of the arboreal arachnofauna. In total, 51 species and 11 genera of Oonopidae were recorded from the 14 study sites. Kakum was the most species- and genus-rich site, with 11 species and 5 genera recorded. The arboreal oonopid assemblages were almost invariably found to be dominated by the widely-distributed genera *Orchestina* and *Opopaea*, in terms of both abundance and species richness. *Orchestina* in particular can be highly abundant and can comprise more than 90% of arboreal oonopids in rainforests as well as in savannahs. Species accumulation curves and six nonparametric estimators of total species richness were computed for Luki, Kakum and Faro to evaluate the level of inventory completeness. In Kakum and Faro the species accumulation curve respectively closely approached and reached a stable asymptote. The selected nonparametric estimators were found to lack predictive power when applied to the Faro data set and appeared to behave similarly poorly on the Kakum sample set.

PRELIMINARY PATTERNS OF SPIDER (ARACHNIDA: ARANEAE) DIVERSITY IN THE SAVANNA BIOME OF SOUTH AFRICA

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Understanding patterns of species diversity in time and space are the essential templates for planning rational conservation management. Refinements in predictive ability resulting from better knowledge of such patterns can progressively render our conservation efforts more sensitive and more comprehensive. Invertebrates provide both advantages (diversity and abundance) and barriers (meaningful interpretation of vast amounts of results) to their use in conservation assessments. Focal taxa are therefore a viable alternative to all-taxon surveys, and this is especially true for poorly surveyed groups such as invertebrates. The South African National Survey of Arachnids (SANSA) has identified the potential of spiders (Araneae) as such a focal taxon and as part of its initial phase, spider diversity patterns in the Savanna Biome has been modeled. The Savanna Biome is the largest biome in South Africa and occupies over one third of the countries surface area. It is characterized by a grassy ground layer and distinct upper layer of woody plants. The major delimiting factors are the affects of fire and rainfall, the latter varying from 235 to 1000 mm per year. Here we present a map of spider species richness patterns for the savanna biome based on the largest and most comprehensive species list compiled to date (including >14000 records obtained from historical literature and more recent surveys). Preliminary patterns suggest a rich spider fauna associated with this biome with species being more diverse and abundant in the western regions. At present a total of 57 families represented by 282 genera and 1 100 species have been recorded from the Savanna Biome. More than 400 sites have been sampled in this biome including at least 11 long-term sites varying between one to five years. Further surveys are however needed as several regions in this biome are either under sampled or have not been sampled at all. Based on this preliminary data, potential species rich areas important for conservation and areas in need of further spider surveys have been identified. The latter result is important to guide the proposed field surveys planned for phase II of SANSA to start in October 2007. Future research aims and products are also discussed.

SMALL-SCALE HETEROGENEITY OF SPIDER (ARACHNIDA: ARANEAE) SPECIES COMPOSITION AND ASSEMBLAGE STRUCTURE IN THE SOUTPANSBERG, SOUTH AFRICA: IMPLICATIONS FOR CONSERVATION

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Conservation area selection in South Africa is often based on quarter-degree squares and neglects heterogeneity that is pervasive at finer spatial resolutions. Spiders are an abundant and easily sampled group that responds to environmental events characteristic to local spatial and temporal scales. Here we investigate the implications of small-scale variation of spider assemblages in five representative vegetation types of the Western Soutpansberg for conservation viz. tall forest, short forest, woodland, mosaic woodlands and grasslands. We collected 277 species in 43 families in an area of less than 450 ha. Species richness estimates predict an average richness of 205 species per habitat in an area of 0.075 ha for those partitions targeted by the methods used viz. branch beating, sweep netting, leaf litter sifting, pitfall trapping and active search. Spatial structuring within each of the vegetation types was also observed based on the lack of any significant spatial autocorrelation for any of the vegetation types except one. Each habitat had a distinct spider assemblage as well as species with high fidelity and specificity values. These differences are being explained by variation in vegetation structure within habitats: forest density measures in the case of mosaic woodlands, basal cover for woodlands and a combination of basal cover and forest density variables for the short and tall forests. All the Soutpansberg endemics listed in this survey were restricted to the forest habitats examined. Heterogeneity between these forests is predicted based on family level endemism in other northern mistbelt elements in the Soutpansberg with implications for conservation.

ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

DIVERSITY AND ABUNDANCE OF SPIDERS (ARACHNIDA: ARANEAE) IN THE FIELD AND TREE LAYERS OF ERFENIS DAM NATURE RESERVE, FREE STATE PROVINCE

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The Grassland Biome dominates the central area of South Africa and consists of a rich diversity of flora and fauna. This biome is dominated by a single layer of grass and an absence of trees, except in a few localized areas where a few trees are present. From November 2005 to August 2007, spiders (Arachnida: Araneae) were collected from Erfenis Dam Nature Reserve in the Free State Province. The spiders were collected in the last week of every third month starting in November 2005. Spiders were collected from three tree species (*Acacia karroo*, *Rhus lancea* and *Rhus ciliata*) and four different types of grasslands (uniform *Themeda triandra*, mixed, weedy and woodland grasslands). During the two-year period a total of 496 tree spiders was collected that represented 17 families and 54 species. From the grass layer 1649 grass-dwelling spiders were collected, representing 15 families and 84 species. More spiders were found during the summer months, when the temperature and rainfall were higher, than during winter. A bottom-up effect from rainfall might be a reason why there are more spiders in the summer season. The higher rainfall leads to denser vegetation growth, which attracts more insects, providing more prey to spiders. The fewest spiders were caught in both August 2006 and August 2007, because of the effects of winter. The most spiders were caught in November 2005 and February 2007, reflecting the high availability of prey and emergence of immature spiders from egg sacs during summer. More spider species as well as individuals were collected from the grasslands than from the tree layers, but the tree layers had a greater diversity of spider families. It seems that vegetation complexity and structure determine the dominant families and species. In this study the dominant families in the tree layers were the Araneidae, Philodromidae and Thomisidae, while grasses were dominated by the Araneidae, Philodromidae, Salticidae and Thomisidae.

A REVISION OF THE AFROTROPICAL SPIDER GENUS *MANDANETA* STRAND, 1932 (ARANEAE, CORINNIDAE)

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The spiders of the monotypic genus *Mandaneta* Strand, 1932, a replacement name for the invalid *Mandane* Karsch, 1880, are among the most enigmatic African corinnids. Besides the generic name change, no further contributions to the knowledge of the genus were made since the description of its type species, *Mandaneta sudana* (Karsch, 1880). We present a first taxonomic revision of the genus, redescribing the type species, describing its female for the first time, and describing a new species, based also in both sexes. The relationships of *Mandaneta* with other Corinnidae genera are yet to be determined. Presently, this and a few other African, South American and Asian genera are regarded as incertae sedis in Corinnidae, since its inclusion in the subfamily Corinninae was recently rejected and even the monophily of the family itself was seriously contested. *Mandaneta* seems to be a basal corinnid, which retained the median apophysis in the male palpal bulbus and lacks the specializations of corinnines or castianeirines. The Corinnidae subfamilies are still to be delimited more precisely, taking into account the Old World genera. A preliminary hypothesis of relationships of taxa included in the large clade Dionycha (MJR, personal data) suggests that *Mandaneta* is the sister group of a monophyletic group composed by the subfamilies Castianeirinae, Corinninae and a group formed by the African genera *Procopius* Thorell, 1899 and *Pseudocorinna* Simon, 1910.

. OONOPIDAE SURVEY IN SOUTHERN AFRICA

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A project to do a worldwide review of the dwarf hunting spiders of the family Oonopidae, also known as the goblin spiders, was successful in obtaining funds from the Plenary Biodiversity Inventory .The aim of this project is to conduct a global inventory of the family to produce a phylogenetic classification for the estimated 2,500 species of oonopids. A team of 26 investigators on six continents have been assembled to sort the specimens available in all the natural history collections. New material will be acquired through 12 expeditions that will concentrate on securing better samples of litter- and canopy-dwelling species, as well as fresh material for DNA sequencing. The first survey is taking place in South Africa from 3-12 February 2008. South Africa does not have many specimens housed in museums. Presently the National Collection of Arachnida in Pretoria houses about 369 specimens. As part of the SANSA surveys a special effort is underway to sample oonopids, and during the last year more than 300 specimens have been collected from various areas in the country and added to the database.

TERMITOPHILY AND TERMITOPHAGY IN SPIDERS: AN AFRICAN PHENOMENON?

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The world distribution of termitophilous and termitophagous spiders is reviewed. Termitophiles can be defined as species living exclusively in close association with termite nests, while termitophages are species feeding almost exclusively on termites. Termitophiles apparently have a southern hemisphere distribution, being found primarily in South America and Africa, and are represented by the families Oonopidae, Prodidomidae and Gnaphosidae. Termitophily in these groups has frequently resulted in evolutionary adaptations similar to speleophilic species, with a reduction in the number of eyes and pigmentation, with several species totally lacking eyes. Although many spiders may secondarily colonise abandoned termite mounds, most of these species are habitat generalists and only use the abandoned mounds as a refuge, and can thus not be classed as termitophiles. Termitophages, in contrast, have only been recorded from Africa, and are represented by the families Ammoxenidae, Salticidae and Zodariidae. Many of these species show specific morphological and behavioural adaptations to specialise on termite prey, including burrowing mouthparts and legs (Ammoxenidae), a modified tarsal organ for prey immobilisation (Zodariidae), and specific prey tracking, attacking and feeding behaviour (all three families). Both ecological phenomena have evolved along distinctly separate lineages, and as for other specialist predators, occur in unrelated families (except for in the Gnaphosoidea).

ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

A REVISION OF THE ENDEMIC SOUTH AFRICAN SPIDER GENUS *AUSTRACHELAS* LAWRENCE, 1938, WITH ITS TRANSFER TO THE GALLIENIELLIDAE (ARACHNIDA: ARANEAE)

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As part of revisions of the Afrotropical tracheline sac spiders (Araneae: Corinnidae), the genus *Austrachelas* Lawrence, 1938 is revised. This unusual group of generally rare spiders was previously only known from two species from KwaZulu-Natal, South Africa, both described from females only: the type species *A. incertus* Lawrence, 1938, and *A. natalensis* Lawrence, 1942. In this study the females of these two species are redescribed, the males are described for the first time, and an additional eight new species are described: *A. barbertonensis* in litt., *A. bergi* in litt., *A. erasmusi* in litt., *A. jocquei* in litt., *A. merwei* in litt., *A. reavelli* in litt., *A. sexoculata* in litt. and *A. wassenaari* in litt.. Most species in the genus have very localised distributions and were collected within a range of less than 200km, or are only known from the type locality. *Austrachelas* lacks many characteristics typical of tracheline sac spiders: ventral cusps are absent on the anterior legs and are replaced by dense scopulae; the sternum is oval rather than shield-shaped; the anterior legs generally lack spines, except for prolateral femoral spines; the posterior legs are very strongly spined; the female epigyne has lateral and anterior hoods; the male palpal tegulum has a distinctive median apophysis, and; the posterior median eyes are much smaller than the laterals. The somatic morphology of the genus suggests a strong relationship to the Gallieniellidae, while genitalic morphology conforms more closely to some liocranid genera (e.g. *Rhaebоctesis* Simon, 1897). A peculiar morphological characteristic of the genus is the occurrence of two distinct rows of prolateral and retrolateral dorsal leg spines on the posterior metatarsi; the occurrence of such spination may provide vital clues as to the correct placement of the genus and its relationships to other taxa. A cladistic analysis including representatives of the Gnaphosoidea (Gallieniellidae included), Corinnidae and Liocranidae will be prepared soon to provide support for the transfer of *Austrachelas* to Gallieniellidae, or provide an alternate placement for consideration.

A MULTIDISCIPLINARY ANALYSIS OF THE SYSTEMATICS OF THE AFROTROPICAL CRAB SPIDER SUBFAMILY DIETINAE (ARANEAE: THOMISIDAE)

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Crab spiders of the family Thomisidae are a relative large family that has a worldwide distribution. In the Afrotropical Region there are 69 genera, allocated to seven subfamilies: Bominae, Coriarachninae, Dietinae, Stephanopinae, Stiphropodinae, Strophiinae and Thomisinae. Simon's (1895) worldwide revision of the family Thomisidae still provides the basis of thomisid taxonomy. Presently in the Afrotropical Region, only 31% of the thomisid species have been revised. The subfamily Dietinae consist of 18 genera and 58 species in the Afrotropical Region, allocated to 6 genera-groups. The aim of the present study is to assess the taxonomic status of species and generic relationships within the subfamily Dietinae. This includes the Mystariaea genus-group and comprises 4 genera namely, *Hewittia* Lessert, 1928; *Mystaria* Simon, 1895; *Paramystaria* Lessert, 1919 and *Sylligma* Simon, 1895. The study follows a multidisciplinary approach that includes classical taxonomy, morphometric analysis and cladistic analysis of morphological data. Dietinae is characterized by tarsal claw tufts consisting of tenent hairs however, this character might be variable and is being assessed. SEM photographs are used in addition to illustrate some of the diagnostic characters. Preliminary results are given on the taxonomic descriptions, illustrations and relationships of species and genera in the Mystariaea-group Dietinae. So far, four species are recognized of *Sylligma* and three species belong to M*ystaria*. The genus *Paramystaria* is synonymized with *Mystaria*.

. SOME LIKE IT SHORT: THE RADIATION OF THE GENERA *CAPHERIS* AND *SYSTENOPLACIS* (ARANEAE, ZODARIIDAE) WITHOUT LENGTHENING OF THE EMBOLUS

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Since the latest, and only, cladistic analysis of the Zodariidae the number of genera in the family has been raised from 54 to 74. That study was the first providing an analysis of the generic relationships of a medium sized spider family on a worldwide scale. But as the methodology was still in its infancy, the analysis had different flaws one of them being that the outgroup was the purportedly most ancestral genus in the family. Genitalic characters were used without consideration for the intrageneric variation. The new analysis has remedied these shortcomings. It is based on a matrix of 74 ingroup taxa and 101 characters. The occasion is grabbed to disclose the position of the Zodariidae, one of the few families for which the placement in the Araneae remains obscure. The outcome of the analysis is similar to that of the former one. The subfamilial composition of the group remains unaltered and only some minor shifts of a few genera are obtained. The corroborated placement of the Cydrelinae is important for the explanation of the radiation in the genera *Systenoplacis* and *Capheris* without lengthening of the embolus or other remarkable complexity increase of the secondary genitalia. This is in contrast with what is found in all other genera in the family that have been revised so far in which somatic stability combines with spectacular increase in genitalic complexity.

AN OVERVIEW OF THE HISTORY AND DISTRIBUTION PATTERNS OF THE SPIDER FAMILY ARANEIDAE (ARANEAE) IN THE AFROTROPICAL REGION

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As part of the African Arachnida Database (AFRAD) and the South African National Survey of South Africa (SANSA), an elaborate database on all the spider families has been established at the Plant Protection Research Institute in Pretoria, South Africa. This is the first formal inventory of the Araneidae of the Afrotropical Region and involves digitizing all the information contained in the literature and collections. The spider family Araneidae, one of the largest, most diverse and widely distributed families in the world (*n*=2844 species) is noted for their orb-shaped webs. This family occupies a wide range of habitats and is still the subject of much descriptive and revisionary work. Five subfamilies are recognized for the Region, namely the Araneinae Argiopinae, Cyrtarachninae, Cyrtophorinae and Gasteracanthinae. So far, 64 genera and 341 species of the araneids are recorded from the Afrotropical Region. Maps to illustrate the current distribution of the genera and species are discussed with special attention to South Africa, where 28 species are endemic. Although much work has been done on the araneids over many years, these maps highlight the lack of published data from most countries in Africa. Presently only about 6 % of the Afrotropical araneid genera have been revised, illustrating the need for taxonomic revisions to identify the large amount of unsorted specimens housed in museums and sampled during surveys. The absence of a key to identify the African species contribute towards this problem. Before the rich araneid fauna present in Africa can be conserved and utilized, the input of experienced systematists are needed.

ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

SPIDER SURVEYS IN THE SOUTHERN AFRICAN NATIONAL BOTANICAL GARDENS

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Conservation biologists are starting to recognize the importance of the invertebrate component in the functioning of healthy ecosystems, therefore any approach to conservation needs to take into account the composition of the invertebrate fauna. The South African National Biodiversity Institute (SANBI) was established on 1 September 2004 through the signing of the National Environmental Management Biodiversity Act 10 of 2004. The Act expanded the mandate of SANBI's forerunner, the National Botanical Institute, to include responsibilities relating to the full diversity of South Africa's fauna and flora.

SANBI manage nine National Botanical Gardens covering over 1,350 hectares of natural vegetation. The Gardens are known worldwide for the indigenous plants cultivated. On request from SANBI, surveys of the National Gardens are now underway to document the animal component as well, where they previously focused only on plants. In 2006 a dynamic new phase of The South African National Survey of Arachnida (SANSA) was launched, with SANBI as new funding partner for SANSA. The focus of the National Botanical Gardens is to raise environmental awareness in South Africa and focusing on the conservation of our unique indigenous fauna and flora. Surveys have already been carried out in the Walter Sisulu NBG, the Lowveld NBG and presently underway in the Pretoria and Bloemfontein NBG's. Given that spiders, being wingless animals, frequently have a high bio-indicative value and are usually strongly associated with a biotope, it is especially foreseen that spiders will benefit from the present protection provided within the National Botanical Gardens.

PRESENTING A BEGINNERS' I.D. COURSE FOR THOSE WHO KNOW NOTHING ABOUT SPIDERS

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The authors have presented four basic spider identification courses for small groups of interested adults over the last year. Prior to presenting these courses a more technical lab and fieldwork based course was presented over two days at the University of the Witwatersrand, but it was found that this course was too advanced for those who had generally never before looked at a spider in any detail. Consequently, a half day course was formulated aimed at introducing commonly encountered spiders, using their most obvious identifying features, which can be seen with the naked eye or a hand lens. Only common names are used but scientific naming is explained as is the need for these names that the lay public often finds intimidating. The course also provides information on basic spider biology and presents interesting examples of spider behaviour and adaptation. Feedback from course participants indicates that this approach is more successful in capturing peoples' interest in spiders and provides the level of identification skill most often sought by members of the general public.

SPIDERS COLLECTED AND PHOTOGRAPHED IN THE NORTHERN CEDARBERG IN OORLOGSKLOOF NATURE RESERVE, NORTHERN CAPE (ARANEAE)

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Spiders were sampled over a two week period during midsummer and four days in early winter in Oorlogskloof Nature Reserve. Oorlogskloof Nature Reserve is situated in the northern part of the Cedarberg mountain range, Namaqualand, Northern Cape, South Africa. It represents an ecotone between the Succulent Karoo, Namaqualand Broken Veld and Fynbos vegetation with varied topography, climate and vegetation in a very small area. This means a great variety of habitats can be sampled in a short time. Specimens were photographed then preserved in situ if this was possible but if field photography was difficult they were brought back alive and photographed under controlled conditions, then preserved and identified as far as possible.

THE SPIDERS OF THE FREE STATE PROVINCE: THE START OF A LONG-TERM PROJECT

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A project to sample the spiders of the Free State Province, South Africa, was registered with the National Museum in 2007. This project will form part of the larger SANSA project. A preliminary list of species has been compiled from the SANSA database, the National Collection of Arachnida and the National Museum collection. So far the spiders of the Free State are represented by 46 families, 146 genera and 248 species. For this project fieldwork sponsored by SANSA will be undertaken throughout 2008 in the gap areas determined by a GAP – analysis of the province.

TRACHELINE SAC SPIDERS OF THE AFROTROPICAL REGION, WITH A REVISION OF THE GENUS *CETONANA* STRAND, 1929 (ARANEAE: CORINNIDAE)

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The dark sac spider subfamily Trachelinae (Araneae: Corinnidae) is currently represented in the Afrotropical region by seven genera, *Austrachelas* Lawrence, 1938, *Cetonana* Strand 1929, *Paccius* Simon, 1897, *Pronophaea* Simon, 1897, *Spinotrachelas* Haddad, 2006, *Thysanina* Simon, 1910 and *Trachelas* L. Koch, 1877.

The genus *Cetonana*, presently known from Africa, Europe, South America and Asia, is revised in the Afrotropical region. *Cetonana* Strand, 1929 was established as a replacement name for *Ceto* Simon 1874, a name occupied by a genus of *Echinodermata* (Ceto Gistl, 1848). Consequently, all spiders in the genus were transferred to *Cetonana*. The species, *C. martini* (Simon, 1897), *C. coenosa* (Simon, 1897) and *C. curvipes* (Tucker, 1920) are redescribed and the genitalia drawn. *C. tridentata* (Lessert, 1923) and *C. simoni* (Lawrence, 1942) are proposed as junior synonyms of *C. martini*. Ten new species are described from the Afrotropical region, with notes given on the distribution and ecology of the each.

EFFECTS OF GENETICALLY MODIFIED BT MAIZE ON SPIDER (ARACHNIDA: ARANEAE) POPULATIONS IN THE DELMAS DISTRICT, MPUMALANGA, SOUTH AFRICA

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An environmental impact study on ground-dwelling arthropods, including spiders, was undertaken to determine the possible effect of transgenic maize cultivation. The survey took place during the 2004-2005 and 2005-2006 summer growing seasons in the Delmas District, South Africa.

ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

Ground dwelling spiders (n= 2330) were collected with pitfall traps during both seasons. During the first season a total of 547 spiders were collected from the pittraps: 188 from Bt maize, 149 from sprayed and 210 from unsprayed maize plots. During the second season the numbers collected (n=1783) increased to 483 from Bt maize, 521 from sprayed and 779 from unsprayed maize plots. The spiders collected during the first season were identified to species level. They were represented by 15 families and more than 49 species. The Linyphiidae and Lycosidae were the dominant families found and accounted for 78.6% of the total number of spiders collected in the pitfall traps. Two linyphiid species were most abundant, one as yet unidentified species, and *Ostearius melanopygius*, followed by *Pardosa crassipalpis* (Lycosidae). There was no evidence that Bt maize had any negative influence on the seasonal distribution patterns or population dynamics of spiders when compared with other maize treatments.

FIRST ARACHNID SURVEY FROM THE NORTH WEST PROVINCE: THE RUSTENBURG NATURE RESERVE

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As part of the South African National Survey of Arachnida (SANSA), projects are underway to determine the biodiversity of arachnids present protected in conserved areas in South Africa as well as compiling checklists for each province. Spiders have been collected monthly over a period of 4 years from the Rustenburg Nature Reserve (RNR), South Africa using beating, sweep netting and active search. The reserve lies in the Savanna Biome, south west of the town of Rustenburg and the land was proclaimed in 1967. It is situated on the northern slopes and summit of the Magaliesberg Mountain. The reserve is dominated by the rocky ridges of the Magaliesberg, with well-wooded ravines on the rugged slopes. The Waterkloof River has its source here and runs through a reed basin. A large valley basin and an extensive plateau form an important water catchment area from which the main watercourse flows into a large, reed-filled marsh. Although broadly defined as sour bushveld, the Rustenburg reserve's vegetation is varied, comprising grassland, scrub, mixed woodland, and even scattered pockets of fynbos. A total of 139 spider species, 95 genera from 33 families have been collected. The Thomisidae is the most diverse spider family with 28 species (20 % of total) followed by the Araneidae with 21 species (15 % of total) and Gnaphosidae with 13 species (9.3 %). The majority of species (91) are wandering spiders (65.5 %) while 48 species (34.5 %) build webs. The free-living ground dwelling spiders comprise 35 species while 56 species have been collected from the plant layer. A total of 130 species are new records for the reserve and 7 % of the total known South African spider fauna are protected in this reserve.

RESILIENCE AND PHENOLOGY OF SOIL DWELLING SPIDERS IN A LOWLAND RAINFOREST

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Spiders were collected in five habitats of the Masako Reserve lowland rainforest (Kisangani, DR Congo): primary forest (>100 y. old), old secondary forest (± 80 y. old), young secondary forest (± 40 y. old), old fallow (12 y. old) and young fallow (5 y. old). The density, the spatial and temporal distribution of their populations was estimated by means of nocturnal distance sampling (Buckland et al. 1993) of specimens with cephalothorax size > 2.3 mm, performed in all habitats except old secondary forest and pitfall trapping, applied in all five habitats. The soil dwelling spiders of the Masako Forest belong to 24 families, 47 genera and 62 species. The most important families are Ctenidae, Lycosidae, Sparassidae (in the distance samples), Zodariidae, Salticidae and Corinnidae (in the pitfalls). For all of these families, one single species dominates in our samples: *Ctenus pilosus* (Ctenidae) accounts for more than 40 % in the nocturnal distance samples whereas *Systenoplacis maculatus* (Zodariidae) is with 29% the most important spider in the pitfalls. The density of the different families changes markedly with the habitat.

For Ctenidae it increases in a logical sequence from 0.007 ind./m² in young fallow to 0.103 ind./m² in primary forest. For Lycosidae the sequence is inversed: they are by far the most common in young fallow (0.028 ind./m²) and virtually absent in primary forest. Sparassidae are rare but the density hardly varies from one habitat to the other. A remarkable statement is the presence of typical forest spiders in old fallow which means that after 12 years, the typical forest fauna is already re-established. Only the young fallow fauna is clearly different from that of the other habitats. A typical forest species already present in old fallow is *Ctenus atitabundus* (Ctenidae). This confirms the high resilience of soil dwelling spiders. As for the phenology of the spiders in Masako, no peak activity periods were discerned. This is in accordance with the hypothesis that the activity of spiders in wet rainforest without a marked dry season, remains at comparable level throughout the year.

FEEDBACK ON THE BIOTA SURVEY IN SOUTH AMERICA

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Officially created in March 1999, BIOTA-FAPESP is the result of three years of articulation of the scientific community concerned with the implementation of the Convention on Biological Diversity. The major aim of the program is to inventory and characterize the biodiversity of the State of São Paulo, and define the mechanisms for its conservation and sustainable use.

Within this scope, the project "The Biodiversity of Arachnida and Myriapoda of the State of São Paulo & rdquo" represented an extensive collection effort, covering various different areas of the state of São Paulo and other states in the country, enabling comparisons between different phytogeographic areas and their fauna composition. Collecting expeditions were carried out over a period of three years and covered 42 areas in 15 states. Four collection methods were used: manual nocturnal collection, beating trays, pitfall traps and Winckler extractors. Preliminary data show that these collections resulted in over 100 000 adult arachnid specimens, the majority of which belonging to the order Araneae (approximately 70 000 specimens). To date, only the material resulting from nocturnal manual collecting and beating tray has been examined. Fifty-four araneomorph families were recorded amongst the samples, the most abundant being Theridiidae, Ctenidae, Araneidae and Anyphaenidae. For Mygalomorphae, 10 families were recorded and the most abundant were Theraphosidae and Nemesiidae.

CAN SPIDERS CHANGE THE WORLD? - ARACHNIDS IN ENVIRONMENTAL EDUCATION

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Spiders (and arachnids in general) hold a universal fascination, almost always provoking a powerful response in people of all ages, races, gender and backgrounds. Environmental education (EE), for the purposes of this paper, is seen as a process intended to bring about awareness, appreciation, love and action towards caring for the natural environment and all it's inhabitants. Some of the challenges facing an EE practitioner include: making science accessible and interesting, encouraging involvement in investigating the natural world, explaining often complex and seemingly irrelevant ecological concepts, overcoming myths and 'old wives tales' about nature, and endeavouring to promote love and care for nature and it's innumerable and fascinating components. It has been this author's experience that arachnids and their stories have been, and continue to be, powerful vehicles for overcoming these challenges, and it is in this vein that this paper considers some highlights of the author's experiences involving people and arachnids in EE, in a variety of contexts, over 19 years.

ABSTRACTS OF THE 9TH AFRICAN ARACHNOLOGICAL COLLOQUIUM (CONT.)

SPECIES RICHNESS OF THE SPIDER FAMILY LINYPHIIDAE (ARANEAE) IN TROPICAL AFRICA

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African spiders are still poorly studied. Seven and a half percent of total spider species richness in tropical Africa is represented by the family Linyphiidae. This group is among most intensively studied for taxonomy in the region. With more than 400 species described, this family is outpaced for diversity only by Salticidae (640 sp.) and Lycosidae (470 sp.) in the Afrotropical region. From the other hand, comparing to Western Palaearctic (Europe and Northern Africa), linyphiid species richness in the Afrotropic is more than three times lower. The proportion of monotypic genera in correlation with known diversity is also more than twice as high in Afrotropic as in West Palaearctic. Shortage of experienced taxonomists, rather than true biogeographical situation, might account for such pronounced differences. While European fauna is rather well known and new species are rarely described, the situation is opposite with the tropics. We attempt to estimate the total number of linyphiid species in Afrotropical region using the unknown/known species ratio in samples obtained by forest canopy fogging (pyrethrum knockdown) from several localities across tropical Africa. By estimation, the species richness in the region is close to that in West Palaearctic. The research is supported by the Belgian Federal Science Policy Office.

A REVISION OF THE SPIDER GENUS *SIMORCUS* SIMON (ARANEAE: THOMISIDAE) OF THE AFROTROPICAL REGION

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The Afrotropical representatives of the genus *Simorcus* are revised. The genus belongs to the subfamily Strophiinae and is known from Afrotropical and the Oriental Region. They are rarely encountered and mainly found on vegetation on various field layers. Ten species are now recognized, six from both sexes. Of the four previously known species, three are redescribed (*Simorcus capensis* Simon, 1895, *S.coronatus* Simon, 1895 and *S. cotti* Lessert, 1936) and one *S. zuluanus* Lawrence, 1942 synonomized with *S. cotti*. The genus is redescribed to include new data from the seven newly described species. The male of *S. cotti* is described for the first time and a key and map to the species is provided. A total of 200 specimens were examined.

THE GOBLIN SPIDER PBI DATABASES AND ITS MULTI-USER APPROACH: EXPLORING THE SPECIES DESCRIPTIVE DATABASE

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The substantial tasks of sorting and describing the available goblin spider specimens demand that each participant be able to enter and access descriptive data using a shared format, via the project's website. No similar approach to acquiring basic taxonomic information has been designed and successfully implemented. The Goblin Spider PBI team designed and implemented a multi-user, Internet-accessible website/database application, using MySQL and PHP technologies, to accept descriptive information from all participants, store maximal information in a highly structured format, and output the stored information in such a format that will allow direct use of that information in formal descriptions for printed publications, species web pages, matrices for phylogenetic analysis, and in interactive keys. The Goblin Spider PBI Project begins with more than 247 multistate characters and many others, and more characters and their states will be added during the data entry process. In addition to the descriptive information, the database also collects images of each species that will be used to accompany the species description and to compare the images side by side for all images of the select species or for images of the selected character and species. All the images are named with the designated 23-letter string which includes all the critical information about the image, such as its genus, species, sex, image type, body part, orientation, specimen ID, and image creator.

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