



**NEWS LETTER NO. 25 — 2012**

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# Newsletter of the African Arachnological Society



## LETTER FROM THE EDITOR

The year 2012 passed by in a flash. For many, it was a busy year, as you will see from this jam packed newsletter. A total of 72 papers were published on the Afrotropical arachnid fauna throughout the year, showing that local and international researchers have been working hard to improve knowledge in all fields of arachnological research.

The 19th International Congress of Arachnology to be held in Taiwan in late June 2013 will definitely be a highlight for the year. Planning is underway for the 11th African Arachnology Colloquium to be held at Amanzi Private Game Reserve near Brandfort, Free State Province, South Africa in January 2014. Please keep an eye out for the first circular. If the previous colloquiums are anything to go by, it will be a blast.

All the best for arachnid-lovers for 2013. May it be a great year for everyone!

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## 11th African Arachnological Colloquium

**The 11th African Arachnological Colloquium will be held in January 2014.**

**Date: Still to be confirmed.**

**Venue: Amanzi Private Game Reserve (<http://www.amanzigame.co.za>), near Brandfort, Free State Province, South Africa.**

**Costs: Still to be determined.**



**Please keep an eye out for the first circular coming soon!**



## INSTITUTIONAL NEWS

### SPIDER UNIT, AGRICULTURAL RESEARCH COUNCIL

The Spider Research Unit at the ARC-PPRI had a busy year. Members in the unit attended several congresses during 2013:

- Ansie Dippenaar-Schoeman and Robin Lyle attended the 9<sup>th</sup> Kimberley Biodiversity Research Symposium, which was hosted by the Northern Cape Department of Environment and Nature Conservation, in collaboration with the South African National Parks (SANParks), the McGregor Museum, De Beers mining company and the South African Environmental Observation Network (SAEON). It was held at the McGregor Museum in Kimberley on the 4<sup>th</sup> of September 2012. The aim of the symposium was to share and promote research being done on the biodiversity of the Northern Cape Province. Owing to budget and capacity restraints within the Department of Environment and Nature Conservation, research is often done by outside organisations, such as tertiary institutions and science councils. Research of this nature is strongly encouraged and supported by the Department.
- Ansie and Robin also attended the Royal Society Spring Science Festival held in Johannesburg on the 9 September 2012, and presented a poster on spiders in agro-ecosystems.
- Again together, they attended the third Diamond Route Congress hosted by De Beers in Johannesburg on 30-31 October 2012, presenting two posters and a talk.
- Robin Lyle attended the Department of Science and Technology (DST) congress for young scientists held in Pretoria on 16-18 October 2012, where she presented a poster on the role of spiders as natural control agents.
- Petro Marais attended the Annual Meeting of the Suid-Afrikaanse Akademie vir Wetenskap en Kuns in Potchefstroom and gave a talk about the National Collection of Arachnida.

- Ansie Dippenaar-Schoeman and Stefan Foord attended the DST Global Change Congress, and presented the results of the long-term surveys of spiders in the Cederberg Mountains.

#### **PRESENTATIONS AND POSTERS**

**DIPPENAAR-SCHOEMAN, A.S.** 2012. *The diversity and adaptations of the orb-web spiders (Araneae: Araneidae)*. 3rd De Beers Diamond Route Research Conference, Johannesburg, South Africa, 30-31 October 2012 (Oral Presentation).

**DIPPENAAR-SCHOEMAN, A.S., FOORD, S.H. & LYLE, R.** 2012. *The spiders (Arachnida: Araneae) of Venetia Limpopo Nature Reserve*. 3rd De Beers Diamond Route Research Conference, Johannesburg, South Africa, 30-31 October 2012 (Poster Presentation).

**FOORD, S.H. & DIPPENAAR-SCHOEMAN, A.S.** 2012. *Drivers of spider diversity along an elevational transect in a floristic kingdom sensitive to climate change*. DST Global Change Congress (Oral Presentation).

**LYLE, R. & DIPPENAAR-SCHOEMAN, A.S.** 2012. *Baboon and trapdoor spiders on some of the De Beers Diamond Route Reserves*. 3rd De Beers Diamond Route Research Conference, Johannesburg, South Africa, 30-31 October 2012 (Poster Presentation).

**LYLE, R. & DIPPENAAR-SCHOEMAN, A.S.** 2012. *Spiders as biological control agents*. DST/NRF Young Scientist Conference, Pretoria, South Africa, 16-18 October 2012 (Poster Presentation).

**MARAI, P., DIPPENAAR-SCHOEMAN, A.S., ANDERSON, C., MATHEBULA, S. & LYLE, R.** 2012. *Die Nasionale Versameling van Arachnida: huidige status*. Annual Congress of the Biological Sciences Division, South African Academy for Science and Arts, held at the North West University, Potchefstroom Campus, South Africa, 5 October 2012 (Poster Presentation).

Some of the posters presented at various conferences in 2012.



## INSTITUTIONAL NEWS

## ***Well done to the National Collection of Arachnida on an excellent report!***

The "AUDIT REPORT OF SOUTH AFRICA'S NATURAL SCIENCE COLLECTIONS" was released in October 2012, and based on the 22 Zoological collections that were accessed, the National Collection of Arachnida (non-Acari) (NCA) received an excellent report.

- NCA was only one of four collections in the country that have received an assessor's curation score of EXCELLENT.
- NCA is listed second in the top 25% quartile for the highest growth rate over the last ten years relative to average growth rate/ ten-year interval between 1950 and 2000. The input of SANSA was specially mentioned here.
- NCA scored low for risk from environmental conditions.
- It also have the lowest rating for LE/LS= Low Environmental Risk / Low Staffing Risk.
- The scientific curation score was 3, the highest score that a collection can receive for uses of collection.
- It is regarded as one of the largest arachnid collections in country.
- It received an overall score of 6, the best score for collections in the ARC.

Please access the following reference for the full report on the collection audit findings:

**HAMER, M.** 2012. An assessment of zoological research collections in South Africa. *South African Journal of Science* 108(11/12), Art. #1090, 11 pages. [http:// dx.doi.org/10.4102/sajs. v108i11/12.1090](http://dx.doi.org/10.4102/sajs.v108i11/12.1090).



Storage facilities for the collection. Plenty to still be identified.



Staff member, Connie Anderson, at work in the collection.



The specimens housed in the collection room.

## INSTITUTIONAL NEWS

### CALIFORNIA ACADEMY OF SCIENCES

Last year (2011), Charles Griswold, Teresa Meikle, Hannah Wood and Lina Almeida, along with Charles Haddad and Esther van der Westhuizen, traveled in the Eastern and Western Cape, Free State, and KwaZulu-Natal provinces of South Africa collecting spiders.

#### Assassin Spiders (Palpimanoidea)

Hannah Wood completed her PhD thesis and is now a postdoctoral researcher at the University of Copenhagen. She is publishing her research on the assassin spiders (Palpimanoidea), focusing on detailed taxonomies of the pelican spiders (Archaeidae) and trap-jaw spiders (Mecysmaucheniidae). A detailed assassin spider phylogeny, published in *Cladistics*, shows that the living archaeids, occurring in Africa, Australia and Madagascar, form a clade distinct from the northern hemisphere fossil taxa. Mecysmaucheniids also form a clade, distant from the archaeids. Archaeids are primitively warm-loving spiders, whereas the mecysmaucheniids love the cold. In a paper recently accepted for publication in *Systematic Biology*, Hannah's team used molecular phylogenetics, comparative morphology of fossils and living spiders, and molecular clock dating to show that archeid evolution is consistent with the breakup of Pangaea (northern vs. southern hemisphere taxa), with the separation of eastern and western Gondwanaland (Australian vs. Afrotropical archaeids), and the ancestors of *Afrarchaea* invaded Africa from Madagascar.

#### Amaurobiidae

Lina Almeida, now completing her PhD at Universidade de Sao Paulo, is revising the austral amaurobiids of the subfamily Macrobininae. She is including a survey of the South African Amaurobiidae, which includes *Chresiona*, *Macrobunus*, *Obatala*, *Pseudauximus* and at least 13 new genera.

#### Giant Goblin Spiders (Orsolobidae)

Tamas Szuts, now a professor at University of Western Hungary, and Summer Systematics Institute student Jasper Bash, are surveying the African Orsolobidae, which comprise several new species of *Afrilobus* and *Azanielobus* and at least one new genus. Along with Natalia Chousou Polydouri and Anthea Carmichael, Tamas is studying the world phylogeny of Orsolobidae.

#### Goblin Spiders (Oonopidae)

Darrell Ubick, Fernando Alvarez Padilla, and Alma Saucedo are describing several new goblin spiders from Madagascar. Along with Tamas Szuts and the goblin spider PBI team, Charles Griswold suggested a basic phylogeny for Oonopidae and described some new Sulsulinae from southern Africa. Sulsulines are large, soft bodied goblin spiders, which resemble Orsolobidae.

#### Drymusidae

Facundo Labarque is doing a world revision and phylogeny of Drymusidae, including a survey of South African drymusids. There is at least one new species of *Drymusa* from Fernkloof in the southern Cape.

#### Eresidae (velvet spiders)

Jeremy Miller, Tamas Szuts, Charles Griswold and others have just published a world phylogeny and key to the Eresidae in the open access journal *ZooKeys*. A notable discovery is that the sand dwelling *Seothyra* (southern Africa) and *Dorceus* (northern Africa) may have evolved their remarkable similarities in parallel. The study also corroborates the Kraus and Kraus suggestion that social *Stegodyphus* are not monophyletic.

#### Lace web builders (Phyxelididae)

Charles Griswold, Anthea Carmichael and Hannah Wood recently published a study of Madagascar phyxelidids that suggest a single invasion from Africa for the ancestor of Malagasy phyxelidids. For SANSA, Charles is surveying all the South African phyxelidids, and has found new *Lamaika* species in the southern Cape.

#### Cyatholipidae

Charles, Anthea and Summer Systematics Institute student Erika Garcia are revising *Cyatholipus* based on more than 100 new specimens. For SANSA, Charles is surveying all the South African cyatholipids.

#### Zoropsidae (primitive wolf spiders)

Daniele Polotow is examining the world phylogeny of Lycosoidea (wolf spiders and their relatives), including the placement of the Griswoldiinae. Daniele has recently described the first griswoldiines from South America, *Itatiaya*, from Brazil.

### THE NATIONAL MUSEUM, BLOEMFONTEIN

Leon Lotz worked on a number of publications in 2012 and has a number of projects that are continuing, including work on the Afrotropical Miturgidae, Archaeidae and Sicariidae.

The first publication on Afrotropical Sicariidae was published in *Zootaxa* (see Publications 2012 at the end of the newsletter). A manuscript on the Afrotropical genera *Cheiracanthium* and *Cheiramiona* (Araneae: Miturgidae), including the *Cheiracanthium* species from Madagascar, is in preparation. A second manuscript that includes two new species of Afrotropical Archaeidae is also being prepared.

Throughout the year Leon has spent most of his time preparing the Sicariidae publication, working on the SANSA Spider Atlas and investigating the Agelenidae of South Africa. Additionally, the National Museum Arachnology database has been migrated to SPECIFY and cleaned up as part of a JRS Biodiversity Foundation grant. The funding will allow for the purchase of a new microscope and will fund Leon's doctoral studies.

#### JRS Biodiversity Foundation Grant:

'Improvement and Integration of Arachnid Biodiversity Information in South Africa'

By Lorenzo Prendini

A multi-institutional, multi-investigator grant to identify and database the scorpion and solifuge holdings in the museums of Namibia, South Africa and Zimbabwe, lead by Bridgit Davis of BioCollections-InfoSolutions, was awarded by the JRS Biodiversity Foundation. The project will further develop aspects of the work undertaken by Lorenzo Prendini during the South African National Survey of Arachnida (SANSA). Over the course of three years, Prendini will visit and identify the unidentified scorpion holdings of the following collections: Albany Museum, Grahamstown; Natal Museum, Pietermaritzburg; National Museum of Namibia, Windhoek; Natural History Museum of Zimbabwe, Bulawayo; South African Museum, Cape Town; Ditsong National Museum of Natural History, Pretoria. Davis and her team will migrate the data (and database those collections, e.g. Albany Museum, that are presently not databased) to SPECIFY 6.

## INSTITUTIONAL NEWS

### THE SPIDER CLUB OF SOUTHERN AFRICA

In 2012 we had a variety of events, the identification/sorting workshops that take place during the winter months. They are really popular. Two were held at the Arachnology Unit of ARC-PPRI Biosystematics, hosted by Ansie Dippenaar-Schoeman, Robin Lyle and Petro Marais. These workshops are the highlight of the year for many of us when we help to sort specimens, at the same time as putting into practice our identification skills. It is always a huge learning experience, for many learning how to use a binocular microscope, spider anatomy, and getting a handle on scientific names, for a start. We are really grateful for the opportunity to work with and get to know the professionals, so on behalf of The Spider Club, many thanks! Another identification workshop was held at the Johannesburg Zoo to introduce spider identification to the zoo's volunteer guides and interested members of the public.

Our field trips and other events are designed both to introduce arachnids to the general public and learn about them ourselves. There were "Spider Walks" in Kloofendal Nature Reserve in Roodepoort, Genesis Game Farm near Cullinan, Elandsvlei Conservancy near Bapsfontein, Klipriviersberg Nature Reserve in Johannesburg South, Tranquillity farm, which is part of a new conservancy near Walkerville, and a farm near Rustenburg in Northwest. The night walks in the Walter Sisulu National Botanical Garden also proved to be really popular. Further afield the clan spent a weekend at the wonderful Terra Nostra Private Game Reserve near Marble Hall, arranged by Ruan Lambrechts, and a spring weekend near Barberton in Mpumalanga Province. Here the Spider Club members introduced spiders to the local bird club.

As always, our stand at the annual "bug show" Yebo Gogga at the University of the Witwatersrand in May, and in August the National Women's Day Market at Sammy Marks Museum is wildly popular, particularly with children. Their parents are often more reserved.

Following on from our field trip to Klipriviersberg Nature Reserve (KNR), the Spider Club was asked to carry out a survey of the arachnids by the Klipriviersberg Nature Association as part of their inventories of the flora and fauna of the reserve. The KNR falls under the auspices of Johannesburg City Parks and is the largest area under conservation in the Johannesburg metropolitan area, with a variety of habitats. Joan Faiola and Paul Cowan from the Spider Club and Morné Brits from the Klipriviersberg Nature Association have undertaken to do this. Surveying began in September 2012 by putting in 40 pit traps that are serviced approximately once a fortnight. In addition, sweep netting and hand collecting are carried out. They are preserving and sorting the specimens found and all specimens will be deposited in the National Collection of Arachnida at the ARC-PPRI. The club is very grateful to Johannesburg City Parks and the Klipriviersberg Nature Association for the opportunity to carry out the survey, and we thank the arachnologists at ARC-PPRI for their help and encouragement.

### UNIVERSITY OF THE FREE STATE



During 2012, the Arachnid Systematics and Ecology unit at the University of the Free State continued work into the systematics of Corinnidae and Salticidae from the Afrotropical Region. Charles Haddad completed and was awarded his PhD degree, titled "Advances in the systematics of Afrotropical Corinnidae spiders (Arachnida: Araneae), with emphasis on the Castianeirinae". Three of his chapters, revisions of the genera *Cambalida* and *Echinax*, and a redescription of the southern African *Merenius alberti*, were recently published in *ZooKeys*, *Zootaxa* and *African Invertebrates*, respectively. Furthermore, the revisions of *Copa*, *Messapus* (including descriptions of two new castianeirine genera and a cladistic analysis) and *Apochinomma*, have been submitted for publication.

A paper has also been submitted to *African Invertebrates*, with Wanda Wesolowska as first author, describing 19 new species of jumping spiders from South Africa, together with many new records from the country and redescrptions of some poorly known species.

As part of Charles' involvement in SANSa, a review paper of the spiders of the South African Grassland Biome has recently been accepted for publication. Further research continues into the assemblage patterns of leaf litter spiders in grassland habitats and the diversity of bark-, ground- and canopy-dwelling spiders of the Ndumo Game Reserve in northern KwaZulu-Natal Province.

At the start of the year, Jan-Andries Neethling began his MSc studies on the South African species of the pseudoscorpion family Geogarypidae. This is the first modern revision on pseudoscorpions to be undertaken by a South African student and we are eager to see the end results of this work. Jan-Andries has been collecting extensively in the eastern and southern parts of South Africa and has already collected 15 morphospecies of Geogarypidae and more than 90 pseudoscorpion morphospecies in total. He will continue field work in the southern and western parts of the country in the coming months, where the type localities of most of the South African species are situated. Apart from the revision, the freshly collected material will be included in a molecular phylogeny of the South African species, which will be performed in collaboration with Mark Harvey of the Western Australian Museum in Perth. Following the International Congress of Arachnology in Taiwan next year, Jan-Andries will visit Mark's laboratory for a few weeks to do the extractions and analyses.



A geogarypid pseudoscorpion from forest leaf litter at Hogsback

## INSTITUTIONAL NEWS

### UNIVERSITY OF VENDA



Staff members and students from the Zoology Department set off on a two week invertebrate survey conducted at a large scale throughout the Vhembe region. This expedition formed part Colin Schoeman's research, a lecturer and PhD candidate at the University. His thesis will investigate invertebrate diversity and compositional turnover in the region. The sampling design includes replicated sites in representative vegetation types within the larger east-west climatic gradient in the region. This required a considerable sampling effort, ca. 800 pitfall traps left open over a 7 day period. Spiders are one of the groups Colin will focus on and the results should provide some insights into the scales at which ground-living spider diversity is generated. Sites included varied from dense Afromontane forests to arid regions with strong Kalahari elements.



*Psammorygma* sp. (Zodariidae) photographed in Nwanedi-Luphephe Nature Reserve



Colin Schoeman (PhD candidate) and Vhuhwavho Gelebe (Honours student) busy in the field.

#### Publication on the project:

**FOORD, S.H., DIPPENAAR-SCHOEMAN, A.S. & STAM, E.M.** in press. Surrogates of spider diversity, leveraging the conservation of a poorly known group in the Savanna Biome of South Africa. *Biological Conservation*.

### IZIKO SOUTH AFRICAN NATURAL HISTORY MUSEUM



The Iziko South African Museum is presently in the early process of moving out of the museum building so that the research centre can be reconstructed. All specimens have long been packed. Suitable premises for the entomology, herpetology, avian and mammal departments, along with the library, have not yet been found. The construction is expected to take three years, probably longer.

Once the move is completed work will continue on the Catalogue of the spiders of Table Mountain. The weekly spider talks at the Cape Union Mart Adventure Centre are ongoing.

The arachnid collection at the museum is growing through sampling trips at various Cape Town Nature reserves. These trips will continue in 2013. There seems to be a number of probable new species and range extensions for a number of species. Norman is presently updating all the arachnid pages for the museums bio site. The Solifugae, Spider Bite and Nephilidae web pages are up, but the finishing touches can only be added once the ant site is up.

Please contact Norman Larsen at [avellopsis@telkomsa.net](mailto:avellopsis@telkomsa.net)  
Web: [www.biodiversityexplorer.org.za](http://www.biodiversityexplorer.org.za)

### DITSONG NATIONAL MUSEUM OF NATURAL HISTORY (FORMER TRANSVAAL MUSEUM)



Robin Lyle is no longer employed at the museum. In early 2012, she accepted a position at the Agricultural Research Council— Plant Protection Research Institute as a Senior Research Technician in the arachnid unit.

A new curator for the Lower Invertebrate collection was appointed in early 2013. Audrey Ndaba, previously curator of arachnids at the KwaZulu-Natal Museum in Pietermaritzburg, has taken up the challenge of curating the Ditsong arachnid collection. Please feel free to contact Dr Martin Krüger at [kruger@ditsong.org.za](mailto:kruger@ditsong.org.za) for any enquiries about the Lower Invertebrate collection.

## RESEARCH HIGHLIGHTS

**HARNESSING NATURE'S HIGH PERFORMANCE MATERIALS FOR REGENERATIVE MEDICINE**

By Astri Leroy

On the 7<sup>th</sup> of September I had the huge honour of opening the conference named above, in the Nobel Forum of the Karolinska Institute in Stockholm, Sweden using John's photos. It was such an overwhelming experience that I clean forgot to introduce my presentation with the normal "Good day ladies and gentlemen, honoured guests ... etc.!" However, once I got into my stride, it was fine and I finished with the necessary thanks and greetings.

Sweden is the birthplace of such giants of modern science as Carl Linnaeus (aka Carl von Linne'), Anders Celsius, Carl Peter Thunberg and Alfred Nobel, of which the country is justifiably proud. The present-day scientists we met are upholding this proud tradition with their work on biomedical applications amongst other endeavours.

The conference was held in the Nobel Forum which has, up to now, been the hall in which votes are counted for the Nobel prizes in the various disciplines. The whole institute is being rebuilt - we were told that it is the largest building project at present underway in Europe - and this historic hall will be replaced soon, so we were thrilled to be there. The day before the conference we visited Linnaeus' summer house, preserved as a living museum with many of the fruit trees in the garden that he planted himself. For us this was all thrilling, goose bump stuff!



Astri Leroy opening the conference (Photograph by J. Leroy)!

Starting with images of our beautiful spiders set the tone for the rest of the day, and although there was some heavy science it was surprisingly easy to understand the ground-breaking medical work that was presented. We were told, over and over again that their work would have been impossible if we had not supplied the first couple of hundred live spiders (see the article *Euprostheno australis* Project – SLU Uppsala, Sweden by Anna Rising, Marlene Andersson and Jan Johannsson in The Spider Club News, September 2011, Vol. 27 # 3 pages 14 & 15).

The various presentations were:

**The spider repertoire of South Africa – how spiders use silk.** John & Astri Leroy, The Spider Club of Southern Africa, South Africa.

**Spider silk enables peripheral nerve regeneration.** Joern W. Kuhnier, Medical School, Hannover, Germany.

**From spider silk genes to biomaterial.** Anna Rising, Karolinska Institute and Swedish University of Agricultural Sciences, Sweden.

**Biomimetic materials: copying nature's building blocks for organ repair.** May Griffith, Linköping University, Sweden and University of Ottawa, Canada.

**Tissue engineered airway: a regenerative solution.** Paolo Macchiarini, Karolinska Institute, Sweden.

**Engineering proteins for stem cell differentiation.** Sarah Heilshorn, Stanford University, USA.

**Tissue engineering of skeletal muscle – a molecular approach.** Marco C. Harmsen, University of Groningen, The Netherlands.

**Recombinant spider silk processing.** Thomas Scheibel, Universität Bayreuth, Germany.

**Biomaterials and an anterior eye chamber model for cell biology studies.** Per-Olaf Berggren, Karolinska Institutet, Sweden.

In case you don't know how it all came about, in 2003 the Leroy's hosted two young Swedish postgraduates, Anna Rising and Stefan Gripp, and took them to André Lambrechts camp at Terra Nostra in Limpopo to collect as many *Euprostheno australis* (funnel-web pisaurids or funnel-web nursery-web spiders) as possible. Thanks to Ruan and André Lambrecht we found sufficient spiders over the course of two consecutive weekends for Anna and Stefan to start the project. The spiders went to a laboratory to be "silked" (milking them for silk!), the silk eventually synthesized and the rest, as they say, is history.

People have been fascinated by spider silk from way back and there are records of the natural product being used as wound dressings, fishing nets, fishing lines, and cross-hairs in gun sights. In the 1990's spider silk genes were cloned and patented in the United States for military use. It is great to know that it is also being synthesized for more peaceful uses as well.

Of course we visited the laboratories in Uppsala, a lovely university city some 70 km from Stockholm where Anna and her colleagues work. There were some really high-tech machines, super computers and a lot of things I didn't understand but it is good to know that normal laptops, refrigerators and even pencils and paper are important bits of equipment! But without our *Euprostheno australis*, it may have been very different!



Anna Rising working hard in her lab (Photograph by J. Leroy).

## RESEARCH NOTES

**Is *Ancylotrypa vryheidensis* a myrmecomorphic trapdoor spider?**

**By Charles Haddad**

Mygalomorph trapdoor spiders are well-known to arachnologists as being drab brown or black in colour, sometimes with chevron markings on the abdomen, as in most *Ancylotrypa* species (Cyrtacheniidae). During field work at Ndumo Game Reserve in northern KwaZulu-Natal, South Africa, my students and I regularly collected an unusual trapdoor spider species whose males were quite small (for *Ancylotrypa*) and have peculiar blue-grey setae on the abdomen with a black transverse band. Ansie Dippenaar-Schoeman of the ARC—Plant Protection Research Institute tentatively identified this species as *A. vryheidensis*.

The males of *A. vryheidensis* are usually active at night and in the early morning, up to two hours after sunrise. Their size and markings are quite consistent with the body shape and size of the large African stink ant, *Pachycondyla tarsata*. These aspects, together with the co-occurrence of the two species in the same habitats, suggests that this trapdoor spider may be a mimic of the ant. Amongst cyrtacheniids, only the American genus *Myrmekiaphila* is known to mimic ants, which would make this record of myrmecomorphy a first for the Afrotropical Region.



*Ancylotrypa vryheidensis* and its probable ant model, the African stink ant *Pachycondyla tarsata*

**Defence posture of a large huntsman spider, *Panaratella immaculata* Lawrence, 1937 (Sparassidae)**

**By Sheana Campbell and Astri Leroy**

On New Year's Eve 2012 a spider was found at night sitting close to an ant trail inside a house in Polokwane, Limpopo Province in northern South Africa (coordinates: -23.87563, 29.542011).

Sheana says:

*"When I stepped closer, the spider turned away from me, lowering its head and raising its abdomen, to show two large black patches, surrounded by paler rings which give the impression of big, dark eyes. When I took the spider outside to take the photos in better light, it again turned so that it was facing away from me, raising the end of its abdomen even higher and dropping its head even closer to the ground which made the "eye-patches" even more impressive. It was otherwise very calm and peaceful, not at all agitated or upset by my moving it."*

This must be a defence posture showing off false "eyes" to deter potential predators, which in effect makes this small animal seem larger.

Sheana sent these pictures to the Spider Club of Southern Africa to see if it could be identified. At first we could only say it was in the family Sparassidae, and since the spider had not been collected, it took a while to get positive identification even to genus level, but we got there in the end. Sheana has given it the nickname "butt-eyed spider", which seems very apt!

**REFERENCE:**

**JÄGER, P. & KUNZ, D.** 2005. An illustrated key to the genera of Africa huntsman spiders (Arachnida, Araneae, Sparassidae). *Senckenbergia biologica* 85: 163–213.



*Panaratella immaculata* defence posture, showing eyespots on its abdomen.

## RESEARCH NOTES

### PREDATORY BEHAVIOUR OF AFROTROPICAL PALPIMANIDAE

By Norman Larsen

In southern Africa the family Palpimanidae (palp-footed spiders) is represented by three genera, namely *Diaphorocellus* in South Africa, Namibia and Botswana, *Ikuma* in Namibia and *Palpimanus* in southern Africa, but surprisingly it has not yet been recorded from Zimbabwe (Dippenaar-Schoeman & Jocqué 1997).

At rest a palpimanid's legs are flexed against the body, and when walking the legs are held forward off the ground while the pedipalps are held against the chelicerae. The first pair of legs is greatly enlarged with spatulate scopulae present distally on the prolateral surfaces of the tibiae, metatarsi and tarsi. It appears that the scopulae may have a sensory function but it may also serve as a method of holding onto its prey.

Palpimanids are araneophagic spiders preying on various families in a stealthy fashion similar to the families Mimetidae and Archaeidae. The Afrotropical genera of Palpimanidae are in urgent need of taxonomic revision, as well as information on their biology. Cerveira & Jackson (2005) have recorded prey capture by *Palpimanus* of jumping spiders (Salticidae). They found that *Palpimanus* slowly approached the silk retreats of salticids with their first pair of legs held aloft and waved in an up and down motion, sometimes touching the substrate on the downward stroke. When detecting the silk retreat with salticid inside the nest, the *Palpimanus* rests its first pair of legs on the retreat, pulling and pushing the silk and chewing through it. Once a hole has been created it rests its front legs on the salticid, ready to pounce. Due to the palpimanid's stealthy movements, it appears that the salticid has not got the visual ability to detect this slow movement.

The attack results with a bite on the salticid's legs, and once dead the palpimanid eats its prey in the retreat, and if caught outside the retreat it will move it inside. *Palpimanus* makes most of its attacks inside the retreats of other spiders. This spider was also observed to eat the eggs in the retreat. Cerveira & Jackson (2005) recorded that vision does not play a role in prey capture.

Henschel (1997) recorded *Palpimanus stridulator* capturing *Seothyra henscheli* as well as *Caraparachne areoflava* inside their burrows. It is not clear how such a large spider falls prey to such a small spider, but it may be the result of its stealthy movements and strong legs. Marie de Jager (pers. comm.) recorded *Palpimanus* in *Stegodyphus* webs and John Murphy (pers. comm.) reported that they may prey on trapdoor spiders.

In the western Cape I have recorded *Palpimanus capensis* entering the web of *Malaika longipes* and capturing it. This species was also collected at Kommetjie, in a limpet shell after it devoured an *Amaurobioides africana*. A juvenile *Diaphorocellus* was observed capturing a gnaphosid spider.

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*Palpimanus capensis* capturing *Malaika longipes* (Phyxelididae)  
(Photograph by N. Larsen).



*Diaphorocellus* sp. with captured gnaphosid prey (Photograph by N. Larsen).



*Palpimanus* sp. from De Hoop Nature Reserve  
(Photograph by N. Larsen).



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Best wishes for 2013!

