CONGRATULATIONS

To Charles Haddad for obtaining his PhD from the University of the Free State. The title of his study was “Advances in the systematics and ecology of the African Corinnidae spiders (Arachnida: Araneae), with emphasis on the Castianeirinae”. This is a very comprehensive study and deals with two aspects of the Castianeirinae, namely their ecology as well as their systematics, and it is a very important contribution towards our knowledge of this family of spiders, especially in the Afrotropical Region. An illustrated key to all the genera is provided as well as a phylogenetic analysis of the relationships of the Afrotropical Castianeirinae. Charles revised the eight genera of the subfamily Castianeirinae known from the Afrotropical Region and described two genera as new to science. He studied 62 species, of which 37 are new species and 20 redescribed for the first time. Each of the genera was discussed in detail, with keys to the species and information on their distribution and ecology. Charles has a very good insight into the systematics of the group and has already been involved in the publication of 15 papers on the corinnids, with several ones now to come. He really placed the African Corinnidae on the map - well done Charles!

Charles now has something to smile about

WELCOME

Robin Lyle has recently been appointed as a Senior Research Technician in the Biosystematics: Arachnida Unit of the ARC-Plant Protection Research Institute. Before her appointment, she was working at the Ditsong National Museum of Natural History (former Transvaal Museum) as the Curator of the Lower Invertebrates. At the museum, her responsibilities included the curation and maintenance of the collection and carrying out research on African arachnids. Robin has a master’s degree from the University of the Free State, where she concentrated on the taxonomy of several genera of tracheline sac spiders (Araneae: Corinnidae). Currently, Robin is undertaking research on trapdoor spiders and is enrolled at the University of Pretoria for her doctorate degree, which is titled: “A taxonomic revision of the subfamily Idiopinae (Araneae: Idiopidae) in the Afrotropical Region.” She actively participated in the South African National Survey of Arachnida (SANSA) during the last four years, when she was in charge of surveys undertaken in the Northern Cape. She is welcomed as a new team member at the ARC and, according to her, “we are going to take over”.

Robin now also has something to smile about
SPIDERS OF THE GRASSLAND BIOME

“Grassland: the most threatened biome in South Africa”

Grasslands are ancient, and date back to well before the break-up of the earth’s landmass into continents and oceans. In the Afro-tropical Region, the grassland currently survives only in South Africa, and represents about 16.5% of the total land area. The Grassland Biome includes large parts of Gauteng, Mpumalanga, Free State, parts of North West, and the inland regions of KwaZulu-Natal and Eastern Cape. Frost, fire and grazing are some of the factors that prevent the spread of shrubs and trees. It is a unique ecosystem with a rich and often highly specialized animal fauna. The Grassland Biome is the mainstay of dairy, beef and wool production and contains some of the best agricultural soils in the country. Significantly, it is the cornerstone of the maize crop. Most of the biome has been radically altered by agronomy (49% of the area is cultivated) and urbanization.

As part of the South African National Survey of Arachnida (SANSA), projects are underway to determine the diversity of the Arachnida fauna of South Africa. Data were compiled from published records and specimens housed in collections. Sampling data consists of short term sampling (about 150 localities in the NCA-database), including several sites where long term sampling has been undertaken (1-3 years). There are many unique grass-dwelling spiders found on the vegetation, with special adaptations in body form, colour, and web and retreat construction. Spiders in grassland have developed special adaptations to live on grasses. They use the grass to make retreats, to construct their eggs sacs, and as a framework for the construction of webs. Many species have special adaptations in shape and colour that make them cryptic on grass. Many have become nocturnal to escape the high daytime temperatures in the summer and to utilize the large quantity of insects available at night. By preying on insects and even other arachnids, spiders are an important link in the grassland food chain.

- A total of 57 families represented by 299 genera and 655 species have so far been recorded from this biome;
- 70 spp. are endemic to the biome and 156 are near endemic;
- The Salticidae with 77 species, followed by the Gnaphosidae (75) and Thomisidae (64), are the most species-rich families. Grassland survey results have focused on the Free State, Gauteng, Mpumalanga, KwaZulu-Natal and the Eastern Cape
- Hunting spiders are represented by 38 families, and are represented by 223 genera and 520 species, of which 63 are endemic to the biome. Salticidae (77 spp.), Gnaphosidae (75 spp.), Thomisidae (64 spp.) and Lycosidae (35 spp.) are the most species-rich families. A total of 66 burrow-dwelling Mygalomorph species have been collected from the biome.
- Web-builders include 19 families, 76 genera and 138 species, of which 10 species are endemic to the biome. Araneidae (46 spp.), Eresidae (13 spp.), Theridiidae (12 spp.) and Phyxelididae (12 spp.) are the best represented families.

Surveys of the Suikerbosrand Nature Reserve, Ezemvelo Nature Reserve and Pretoria National Botanical Gardens are underway. Photographic records from the Grassland Biome—we have more than 2000 photographs from the grassland, provided largely by Allen Jones from Mpetsane Conservation Estate in the Free State, Peter Webb from areas around Irene, and Vida van der Walt and Koos Geldenhuys from areas around Pretoria.

GRASSLAND PROJECTS UNDERWAY
- Handbook on the spiders of the grassland
- Poster on the spiders of the grassland
- Several publications in preparation

Contact: Ansie Dippenaar-Schoeman and Charles Haddad
Natural history museums are not only responsible for the curation, preservation and management of specimens in collections, but also for providing accurate and current biodiversity information in the form of up-to-date faunal inventories with locality data. As signatories to the Convention on Biodiversity (CBD), South Africa is obliged to develop a strategic plan for the conservation and sustainable utilisation of this unique biological heritage. The CBD has shown us the importance of good biodiversity data, and has contributed to renewed interest in specimen databases of natural history collections.

The term "Biodiversity Informatics" is defined as the 'application of informatics to recorded and yet-to-be discovered information specifically about biodiversity, and the linking of this information with genomic, geospatial and other biological and non-biological datasets', and this term is now generally in use for this type of data.

The South African National Collection of Arachnida (excluding the Acari) (NCA) was established in 1976 under the Biosystematics Programme at the ARC-Plant Protection Research Institute, and the digitisation of the arachnid specimens in the NCA began in 1981. The first relational database was developed using the programme, Clipper Summer 87, by ARC database developers. It was later upgraded to Clipper 5.2 and 5.3. The database included fields for taxon names, specimen information and literature references.

In 2000 the data were migrated to a Microsoft Access relational database and a new module, the African Arachnida Database (AFRAD), was added. This module comprises a complete taxon database to eventually house information of >6000 Afrotropical arachnid species, and was developed in collaboration with the Royal Museum for Central Africa in Tervuren, Belgium. Facilities for synonyms and taxon name changes, as well as descriptive, behavioural and distributional data and images, were added. This information is now available on the family, genus and species level as a series of online factsheets that can be accessed on the Internet at http://www.arc.agric.za:8080/afred/afradmain.aspx.

South African spider systematics and ecology are in an exploratory phase, and the traditional approach to mapping diversity has enabled spider ecological research results in the country to generate species lists that are often resolved to species level. This descriptive phase provides the foundations for more integrative work between taxonomists and ecologists in future, and any attempts to ignore the importance of providing baseline biodiversity and taxonomic data will hamper subsequent attempts to develop a deeper understanding and appreciation of this unique heritage. The two online bioinformatics systems contribute towards better public awareness of the biodiversity of South African arachnids.

Data from the database has been used to publish more than 50 scientific papers, which include:
- Papers on agro-ecosystems
- Papers from conserved areas
- Papers from floral biomes

Contact: Ansie Dippenaar-Schoeman at Dippenaar@arc.agric.za
ARE VIOLIN SPIDERS REALLY A SERIOUS PROBLEM IN SA?

Each year, the Arachnida Identification Service of the Biosystematics Division receives a large number of queries about violin spiders. This is mainly due to hoax e-mails circulating rumours that venomous violin spiders are commonly found in houses in South Africa, that their numbers are increasing drastically, and that their venom causes severe damage to the skin. At the National Collection of Arachnida (NCA), violin spiders are regarded as being quite rare. Although they can occur throughout the country, the specimens recorded and housed in NCA over the last 40 years show that only 131 of the >50 000 database entries are violin spiders (0.29 % of the total). Of these 131 records, only 11 have been recorded from buildings, in southern Gauteng (Johannesburg), parts of the Free State (Bloemfontein, Clocolan and Vrede) and the northern parts of Eastern Cape (Middelburg). As part of the South African National Survey of Arachnida (SANSA), more than 10 000 specimens are sampled and identified annually, and few if any of these are violin spiders.

Members of the public can participate in SANSA by submitting photographs of spiders, and these are made available online through the Virtual Museum (at www.arc.agric.za - see quick link SANSA). Of the >3000 images that have been received so far from the public, mostly of spiders recorded in and around houses, only 13 records are of violin spiders. Seven of the 13 photographs were supplied by a photographer living near Clocolan in the Free State. Unfortunately, many wounds are diagnosed by physicians as spider bites, although in 99% of the cases no spider was observed causing the injury. The tendency is also now to identify the bite as being one from a violin spider although, at this stage, there is very little evidence that they are the culprits.

Violin spiders belong to the family Sicariidae, genus Loxosceles. Seven species are known from southern Africa, and all of them should be regarded as being of medical importance. Four Loxosceles species are found in the Grassland, Savanna, Nama-and Succulent-Karoo Biomes, with two species occurring in caves. One cave species, L. parrami, was introduced into human habitation and mines on the Witwatersrand, and is found in cracks and crevices in stone foundations of houses, taking refuge in dark corners. Violin spiders are free-running ground-dwellers, and they spin only a few irregular strands of silk that serve as retreats under objects on the ground or in dark corners of buildings, out-houses and caves. They are nocturnal in habit. The grassland species are found under rocks, logs, and the bark of trees, in old termite nests, or under rubble.

The cave species are more commonly found in the total dark zone than in the twilight zone. They wander around on the cave walls in search of prey. They can be recognised by their yellowish or reddish brown bodies, and contrasting dark markings (Fig. 1). The carapace is longer than wide, with a conspicuous, deeply impressed fovea and clypeus, and the chelicerae directed forwards, usually with a “violin-shaped” darker marking on the anterior part of carapace (Fig. 2). However, this mark is not always present in all the South African species. They have only six eyes arranged in a recurved row of three groups, with each group having two eyes. The abdomen is oval, with numerous thin scattered setae, and the legs are long and slender, more so in the male.

Little is known about their biology. In one of the grassland species, L. spinulosa, it was found that the gestation period is roughly three months, and 3-4 egg cocoons are produced, containing about 15 eggs each. The egg sacs are deposited on the soil surface and covered with sand. Spiderlings reach maturity within a year and they can live for up to three years. They prey on a variety of ground-living invertebrates.

These spiders produce a cytotoxic venom that destroys the tissue around the bite site. The bite is painless, apparently superficial, and initially goes unnoticed. About two hours after the bite a red swollen lesion, sometimes with a purple centre, starts to develop. Over the next day or two, bleeding into the site causes a blackened lesion. By day four the swelling and inflammation subside, while cutaneous necrosis continues to spread slowly. Necrotic tissue sloughs off, leaving a deep ulcerating wound that is slow to heal and leaves a nasty scar. Treatment should focus on preventing and treating secondary infection using local antiseptics and systemic antibiotics to promote healing. Ulcers are managed conservatively through cleaning and dressing. Timely surgical cleaning may arrest a rapidly spreading lesion. Dapsone treatment in low doses for 14 days may control extension of the ulceration. Disfiguring scars may require reconstructive surgery with skin grafting at a later stage. The patient should receive a tetanus toxoid booster. No anti-venom has been produced, although, no deaths have been reported in Southern Africa to date.

Many spiders have the dark markings described above on the carapace, and are often misidentified as violin spiders. These similar-looking spiders are in fact pholcids (daddy-long-leg spiders) and spitting spiders (Scytodes spp.).

Contact: Ansie Dippenaar-Schoeman at Dippenaar@arc.agric.za

The savanna grassland species

The species from the East Rand and Free State

Some good news -

The first publication of Sicariidae from the Afro-tropical Region has been submitted to Zootaxa by Leon Lotz
SOME INSTITUTE NEWS

UNIVERSITY OF VENDA

The monitoring of the long-term altitudinal transect across the Soutpansberg, established in collaboration with the Centre for Invasion Biology, completed its third season when University of Venda postgraduate students sampled it in September 2011 and now again in January 2012. The diversity patterns of another arachnid taxon along the transect, scorpions, will now also form the focus of Vhuhwhavho Gelebe’s honours project. Specimens are sent to Lorenzo Prendini for identification and Vhuhwhavho will also be looking at different sampling methods on richness estimation. So far 13 species have already been recorded along the transect and Vhuhwhavho is an experienced collector, who volunteered regularly during SANSA sampling surveys. Further ongoing collaborations include:

- A paper on the spiders along the Cederberg altitudinal transect with Ansie Dippenaar-Schoeman and Steven Chown
- A field guide for the spiders of the Savannah Biome with Ansie Dippenaar-Schoeman and Charles Haddad
- A paper on the spiders of the new Vhembe Biosphere Reserve with Ansie Dippenaar-Schoeman
- A paper on the spiders of the Grassland Biome with the whole SANSA team
- The salticids of South Africa together with Galina Azarkina from Russia
- A poster on the spiders of the Venetia Limpopo Reserve

Contact: Stefan Foord at Stefan.foord@univen.ac.za

UNIVERSITY OF THE FREE STATE

Research on the ecology and systematics of spiders continues at the UFS. At the start of the year, Jan-Andries Neethling started his MSc project, which will include a revision of the Pseudoscorpiones family Geogarypidae in South Africa. Jan-Andries has conducted extensive field work in the Eastern Cape and KwaZulu-Natal this year, collecting mainly in forests and savanna habitats, mainly by litter sifting and canopy fogging. While not forming part of his M.Sc as such, much of the pseudoscorpion material he has collected will be used for a project to examine gene flow between forest populations and cryptic species occurring in forest habitats. He will also contribute material to projects on the barcoding of South African Pseudoscorpiones and molecular work being conducted by Dr Mark Harvey of the Western Australian Museum in Perth. Jan-Andries is also preparing an illustrated key to the families of South African pseudoscorpions together with Leon Lotz of the National Museum.

Several publications are being prepared or have been submitted for publication:

- A book and paper on the spiders of the Grassland Biome with members of the SANSA team
- New and rare salticids from South Africa together with Wanda Wesolowska of Poland, including descriptions of 19 new species (in prep.)
- Revisions of the castianeirine genera *Apochinomma*, *Cam-balida*, *Echinax* and *Merenius* (submitted), and of *Castianeira*, *Copa*, and two new genera (in prep.)
- Ground-, bark- and canopy-dwelling spiders from the Nduomo Game Reserve in KwaZulu-Natal
- Checklists of the Tembe Elephant Park and Ophathe Game Reserve in KwaZulu-Natal

Contact: Charles Haddad at haddadchr@ufs.ac.za

NATIONAL MUSEUM, BLOEMFONTEIN

Research is ongoing at the museum with a number of projects. Leon Lotz is currently working on the following publications:

- The Afrotropical genera *Cheiracanthium* and *Cheiramiona* (Araneae: Miturgidae), including the *Cheiracanthium* species from Madagascar
- The first publication on Afrotropical Sicariidae has been submitted to Zootaxa
- Another manuscript with two new species of Afrotropical Arachaeidae is being prepared

Leon has also been busy with fieldwork in the Zastron District and the Platberg Nature Reserve, Free State.

Contact: Leon Lotz at arachnol@namus.co.za

ARC-PLANT PROTECTION RESEARCH INSTITUTE

At the ARC Spider Unit there has been a lot of activity:

- Surveys completed and identified: Sneeuberg survey [with Rhodes University]; various areas in the Eastern Cape [Rhodes University]; Cederberg survey [Stellenbosch University].
- Survey papers in preparation: spiders of the grassland biome; the bioinformatics of spiders; how SANSA worked; the spiders of three arid Nature Reserves; the spiders of the Suikerbosrand Nature Reserve, Vhembe Biosphere Reserve and the altitudinal transect over the Cederberg.
- Taxonomic papers: revisions of *Heriaeus* and *Parabomis* (Thomisidae), *Trachelas* (Corinnidae) and *Ctenolophus* (Idiopidae).
- Workshops: two workshops to train members of Spider Club to sort and identify spiders; training workshop in KZN to train reserve managers to identify spiders.
- Books: completion of handbooks on the spiders of the Savanna and Grassland Biomes; large spider book for LAPA.

Contact: Ansie Dippenaar-Schoeman at Dippenaar@arc.agric.za
VIRTUAL MUSEUM—SOME INTERESTING STORIES

A DIFFERENT STABILIMENTUM EVERY DAY

A note from Graham McGallum from Manor Gardens, Durban on *Argiope levii*.

‘I live in Durban and photographed a remarkable spider in my garden. Remarkable in that besides being large and handsome, it spun new webs everyday of different appearance. The central area where the spider sat, which was spun in more dense threads, could be hourglass-shaped, circular, cross-shaped, bar-shaped etc.’

ARGIOPE CITY

A note from Allen Jones from Mpetsane Conservation Estate, Clocolan, on *Argiope australis*

After some rain we discovered an “Argiope city” in the northern area of our conservation estate (a) with between 50-60 spider webs present in the bushes. It is amazing that there are so many spiders present just in this one location on the farm, and all *Argiope australis*. Normally they are found throughout the estate. They have obviously found a good food source in this area as high numbers of grasshoppers [Orthoptera Acrididae, *Truxalis* sp.] were found in most webs (b-e).

Most of the webs are large (f), at least 500 mm, and some even larger; some with stabilimenta (g), others without (h). The males have their own webs (i); only a few were found together with a female on her web. For more images of the webs of *Argiope australis* see p 7.

Webs with prey in them

Orb-webs with or without stabilimenta

Web of the male
VIRTUAL MUSEUM—SOME INTERESTING STORIES

ARGIOPE AUSTRALIS WEBS FROM THE FREE STATE
Photographer: Allen Jones

A variety of photographs of Argiope australis showing the variation in web structure

Juveniles in their webs
SOME MORE ON MUD NEST WASPS

The following spiders were removed from a mud nest in Modimolle by Marita Beneke.

We were able to identify the following families and species:
Araneidae: Neoscona blondeli, N. subfuscus, Araneus apricus
Thomisidae: Tmarus sp.
Oxyopidae: Oxyopes sp.
Salticidae: Hyllus sp.

CAUGHT IN ACTION—ON THE MOVE

Observations and photographs by Marita Beneke from Modimolle

Emerging from the egg sac

Gathering together below the empty sac

Starting to move away from the egg sac (see red arrow)

The great trek begins - looking for a high place to start ballooning

LOOKING FOR COMMON NAMES

_Baryphas ahenus_ (Salticidae) — the punk jumping spider?

Peter Webb
SOME ARANEID MYSTERIES SOLVED (we think) - Ansie Dippenaar

Paraplectana thorntoni  Paraplectana walleri  Paraplectana spp.?

Not Araniella but Prasonica seriata

Prasorlica nigrotaeniata?

THANKS TO:
Leon Lotz, who obtained some of the old literature for us.

Pyxanancha hystrix (see forked tubercle)  Pyxanancha tribulus (all tubercles straight)

Cyrtarachne ixoides  Cyrtarachne lactea  Larinioides subinermis
FIRST PHOTOGRAPHIC RECORDS OF TWO INTERESTING SPECIES

OECOBIIDAE: Uroecobius ecribellatus (female and web) from Mphuphuli

ERESIDAE: Paradonea striatipes from N.Cape

NEW RECORDS AND SPECIES FOR SOUTH AFRICA

OONOPIDAE (new genus and spp.)

*Dalmasula* new genus Platnick, Szuts & Ubick, 2012
- *D. griswoldi* Szuts & Ubick, 2012 from Muizenberg
- *D. dodebai* Szuts & Ubick, 2012 from Koingnaas

THERIDIIDAE (new record)

*Euryopis episinoides*

Small spider, total length 3-4 mm; carapace high, clypeus high in males, lower in females; abdomen triangular, pointed behind. Carapace and abdomen dark, legs paler. Sampled in large number from vineyards in the Western Cape. Known from Europe and Northern Africa, new record in SA.

DID YOU KNOW

The spider Anansi, a popular figure in the folklore of West Africa (the Ashanti of Ghana), appearing as a cunning trickster and the King of all Stories.

TENIZIDAE *Stasimopus* spp.

One of three new species of the cork-lid trapdoor spiders described by Engelbrecht & Prendini (2012) are from Gauteng. They are *Stasimopes filmeri* (photo), *S. griswoldi* and *S. hewitti*.

ULOBORIIDAE

*Uloborus walckenaer*, an interesting pale uloborid recognizable by the abdominal tufts, sampled from a few areas in South Africa.

Better images of dictynid taking over the Biosystematics building

**Female genitalia**
NEW PUBLICATIONS ON SOUTH AFRICAN ARACHNIDS


SORTING AND IDENTIFICATION WORKSHOP AT THE ARC SPIDER RESEARCH UNIT

The first of two sorting and identification workshops was hosted by the Spider Research Unit at the ARC on the 9th of June 2012. Fourteen members of the Spider Club of Southern Africa arrived on a cold Pretoria morning to help sort through some of the backlog of unsorted material. The aim of the workshop was to sort material, and depending on ability, to identify to family level. Ansie gave them an overview of the research being done at the ARC.

Since the members of the Spider Club are at various levels regarding skill and arachnid knowledge, an introductory talk was given to all. It looked at the basic skills needed in order to sort successfully. Background information about the collection and its importance were also shared.

One of the youngest members of the spider club, age 10, amazed all with his ability to sort. He is definitely a young scientist in the making! After a successful day of sorting he headed home, very enthusiastic to start collecting for us.

The session was very successful, with more than 200 specimens being sorted. The next workshop will be held on the 25th of August 2012. Please visit the Spider Club website (www.spiderclub.co.za) for more information, or contact Robin Lyle for arrangements.

Contact: Robin Lyle at Lyler@arc.agric.za.

Sorting and identification workshop held at the ARC on Saturday 9th of June 2012. Photographer: Bertus Louw
LAST WORD

O dear ....... must we really look?