# The Spider Club NEWS

June 2023 Vol. 39, No. 2

"The Spider Club provides a fun, responsible, social learning experience, centred on spiders, their relatives, and on nature in general."

## WINTER EDITION

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# About the Spider Club

The Spider Club of Southern Africa is a non-profit organisation. Our aim is to encourage an interest in all arachnids and to promote this interest and the study of these animals by all suitable means.

Membership is open to anyone. People interested in joining the club may apply to any committee member for information.

Field outings, day visits, arachnid surveys and demonstrations, workshops, and exhibits are arranged from time to time. A diary of events and outings is published at the end of this newsletter.

## Contact us

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at "The Spider Club of Southern Africa"

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### Acknowledgements:

Our sincere gratitude goes to the following people for this edition of the newsletter:

- All the photographers of the photos used in this edition. Without you, these pages would be very dull.
- Astri Leroy, of course, for all her contributions, and informing me of any new content, as well as the entire SCSA Committee (Roulla, Jarrod, Henning, Desiré, Ruan, Joanie, Caren, and Jèan-Pierre) for their contributions.
- Jeanne van Aswegen, my colleague at Grammar Guardians and superior half, for proofreading the newsletter.
- Everyone on SCSA for all the interesting content.
- All the readers of this newsletter, and all the positive feedback we receive. Of course, keep the negative feedback coming, so that we can improve on this newsletter. All the readers of this newsletter, and all the positive feedback we receive. Of course, keep the negative feedback coming, so that we can improve on this newsletter.

# From the hub

Hi spider people!

I'm one of those weird people who actually love winter, but one of the things I hate about it is the scarcity of spiders (I love the scarcity of mosquitoes and flies, though). Winter also means that we don't have many (or any) spider walks lined up until the spiders emerge from their "slumber" in spring. Incidentally, for the first time since I've become the editor of the newsletter four years ago, we don't have any spider walks to report on. At least we can still report on our stall at the annual Yebo Gogga exhibition.

Last year was the first time ever that the Spider Club didn't attend Yebo Gogga, so we were glad to attend again. I've never been to Yebo Gogga (Astri has been to all of them), but it always seems like the Spider Club stall is very popular, especially because we always make the effort to take live specimens with, which usually include what our members have voted our "national spider", namely the common rain spider (*Palystes superciliosus*). I want to thank the people who have made this possible again, namely Astri Leroy, Henning Boshoff, Garrie Wright, Jarrod Todd, Caren Neal, and the latter two's better halves, Bianca Hindmarch and Michael Swart, as well as the student, Makgoshi, who helped out on the Friday.

Ian Engelbrecht was also at Yebo Gogga to promote his new scorpion field guide, which is the first to include all known scorpion species in South Africa. See a review of this field guide on pages 6-7.

Another event we can report on, even though it is not a Spider Club event, is iNaturalist's City Nature Challenge. Some Spider Club members participate each year, and showcase our wonderful diversity of spiders. Cecile Roux, as always, shows us how it is done by photographing anything that moves (and doesn't move, but lives). She reports on the CNC on pages 17-22.

The Snippets section for this edition is quite short. We usually have at least one taxonomic change or new species that was described, but it seems like the taxonomists were quiet the last three months. If there are any publications or taxonomic changes I'm not aware of, I apologise.

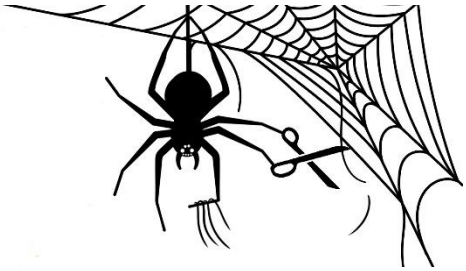
For the first time in 2023, we had a spider of the month (SOTM) that's not a jumping spider. We also had slightly more diversity in the last SOTM, consisting of four families. It seems like the bigger-eyed spiders are a favourite. In fact, the last "small-eyed" spider to win SOTM was in November 2022, when a theridiid won.

We have a new section in the newsletter, named "The wonderful world of spiders", which will hopefully become a regular feature. I often see people posting strange spiders from other parts of the world that I think deserve some exposure here.

I hope you enjoy this edition, and keep on sending us feedback. Also, thank you to everyone who contributed to this edition! Stay warm!

Yours truly
Rudi Steenkamp (Chairperson)

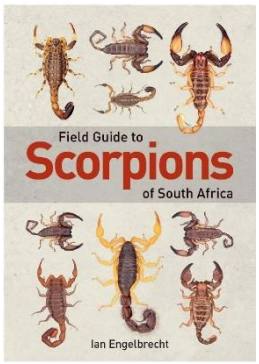
# Snippets



## AFRAS Colloquium date and venue


The date and venue for the 14th AFRAS Colloquium have been confirmed. It will be held from 28 January to 1 February 2024 at ATKV Buffelspoort near Rustenburg. This is the first AFRAS Colloquium since January 2020, right before the COVID-19 restrictions.

## New scorpion field guide




Dr Ian Engelbrecht's *Field Guide to Scorpions of South Africa* is now available in all major book stores. It is the first South African scorpion field guide that includes all known species. See book review on pages 6-7.

## In memoriam

The International Society of Arachnology (ISA) recently announced the passing of the following four arachnologists: Andrés Felipe García Rincón, Rainar Nitzsche, Reinhard Schuster, and Franz Renner.

Andrés Rincón, from Colombia, focused on Opiliones research, and has 21 scientific publications behind his name. He passed away on 18 May 2023.

Rainar Nitzsche was a German arachnologist and author who is best known for his work on the mating behaviour of Pisaura mirabilis. In the March 2022 newsletter, we included a book review of one of his books (*Spider Sex and More: Spider Biology, Human, and Spider* [translated from German]).

Reinhard Schuster, from Austria, was a professor of zoology in Graz, and focused on mite research, but also supervised many Austrian arachnologists who have excelled in arachnology.

Franz Renner, from Germany, was involved with the museum in Stuttgart, and played a role in the formation of the *Südliche Arachnologische Arbeitsgemeinschaft* and the *Arachnologische Gesellschaft*.

Our condolences to the family and friends of these noteworthy people.

From left to right: Andrés Felipe García Rincón, Rainar Nitzsche, and Reinhard Schuster. No photo available for Franz Renner.

## Autocorrect tool for spider species

The following was posted in the Newsletter of the American Arachnological Society. Unfortunately these are only for North American species. I tried to create one for South African species, but couldn't manage. I might try again in the near future if I can figure out how to do it.

If you write papers that include the scientific names of spiders, you may find the following resource developed by Nate Venarske useful. Nate has developed a spellcheck dictionary for over 2,200 arachnid family, genus, and specific epithets that can be added to Microsoft Word. This tool will remove the red squiggly lines under scientific names and help you catch typos. The tool can be downloaded from https://www.patreon.com/posts/73349436
Nate welcomes use of this tool and does not require credit or attribution.

Once it is downloaded, it's easy to set up: Open Word ◊File ◊Options ◊Proofing ◊ Custom Dictionaries ◊ click CUSTOM.dic then click New ◊ navigate to downloads and click NASPIDERS.dic ◊click Yes on the ominous popup box ◊ click OK for Proofing and then OK for Options. If you have Word documents open, you may have to close and reopen them before it starts working.

Nate said that if there is sufficient interest, he will continue to update this resource (adding terminology, names of prominent spider people, and species he missed). Contact Nate directly at natae.venarske@yahoo.com

## Results of ISA Conference

The 22nd International Congress of Arachnology (ICA) was held from 5 to 11 March 2023 in Montevideo, Uruguay. Students are asked to give oral and poster presentations in two categories: Taxonomy, Systematics, and Biogeography; and Behavior, Ecology, and Morphology. The winners are as follows:

**Taxonomy, Systematic, and Biogeography**

*Oral presentation:* Benjamin C. Klementz for his presentation, "Mistaken synapomorphy: The evolutionary developmental origins of the patella".

*Poster presentation:* Pietro Tardelli Canedo for his poster, "Phylogenetic revision of the Opiliones family Neopilionidae with an UCE phylogeny".

**Behavior, Ecology, and Morphology**

*Oral presentation:* Júlia Andrade de Sá for her presentation, "Sicariidae from the state of Bahia (Araneae; Arachnida) with focus in the genus Loxoceles" [Translated from Spanish]

*Poster presentation:* Anna Luiza Oliveira Martins for her poster, "Behavioural manipulation of the spider *Leucauge argyra* (Tetragnathidae) induced by the Darwin wasp *Hymenoepimecis pinheirensis* (Ichneumonidae).

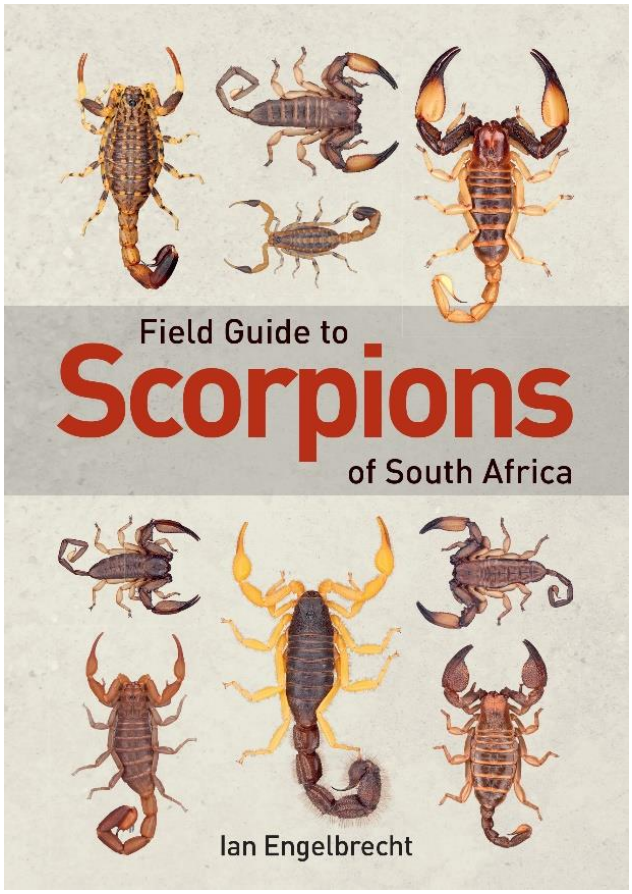
## Next ICA in India

The 23rd International Congress of Arachnology (ICA) will be held in Kochi, India, in 2026. According to the ISA, this will only be the second time that the congress is held in Asia, and the first time in India.

# Book review

## Field Guide to Scorpions of South Africa

**by Ruan Booysen**




**Author:** Dr Ian Engelbrecht
**Publisher:** Penguin Random House South Africa
**Format:** Paperback
**Price:** ±R400
**Pages:** 293
**ISBN:** 9781775845744
**Available at:** Most book stores, or online.

Recently I have had the opportunity to read, and use, Dr Ian Engelbrecht's new book, titled *Field Guide to Scorpions of South Africa*. As the title says, this book is a guide to the scorpion fauna of South Africa, intended for amateurs, enthusiasts, and professionals to use in the field, or at home. I ordered my copy from the Kirstenbosch Bookshop on the day of Ian's introduction to the book and received it the next day. I was pleasantly surprised by how thick this book was compared to Jonathan Leeming's Scorpions of Southern Africa, which was my go-to scorpion guide until now. The book is sold in a paperback format with an impressive 293 pages.

The content of the book is structured conveniently, starting with a "Quick-ID" page behind the cover page to quickly find the group you are looking for. Thereafter is a guide on how to use the book, followed by some information on what scorpions are, their taxonomy, biology, behaviour, anatomy, stings, where to find them, and how to photograph them. These are all essential topics for amateurs to get familiar with, and professionals to brush up on.

After learning everything about scorpions, arguably, the most important section of the book starts: the identification section, or "Species Accounts" as it is referred to. I think for most readers this would be the section of interest. If you are familiar with the layout of field guides, this will look familiar to you. You don't have to reinvent the wheel, just tweak it to perfection, and this is what this book has achieved. At the start of each chapter, an overview of the family, or genus, is provided. These sections provide information on the etymology of the genus name, pronunciation, general distribution, how to distinguish them, and photographs of some representative species.

Turning the page, the first thing that caught my eye are the photographs on the right-hand side. The quality of these photos is immaculate, with very good lighting. There are usually two sets; the first are all set on a neutral grey background to easily get an idea of their true colouration. These can be used to compare males with females, or perhaps variation within a species. The second set are of scorpions in their natural environments.


On the left-hand side, the species information is provided. Naturally, the species name, taxon author, and common name are provided at the top of the page. This is followed by the main text body, providing important information regarding the species, such as a short description, differences between sexes, their distribution, preferred habitats, notes on their behaviour, and finally similar species to keep in mind. The information provided is concise, providing only the most useful information to help the reader identify the species. At the top of the main text body is a short summary for quickly identifying the species. To the left of the main text, a box with several pieces of information is shown. This includes information on the pronunciation of the species name, a distribution map, a venomosity scale, and a diagram to show the relative size of the scorpion. Some species also have short taxonomic footnotes available for clarification. Additionally, each family of scorpions is colour-coded on the top left- and right-hand side of the page for quick reference.

In summary, if you are someone who regularly goes to the field, enjoys learning about scorpions, or perhaps just lives in an area where you frequently encounter scorpions, then this book is for you. It covers all the currently described species of scorpions of South Africa, their venomosity, and distribution, accompanied by great photographs for reference without having to resort to scientific jargon. Take note that some careful reading will have to be done when distinguishing some similar species as some features may be very specific, but this is something that comes with the territory.

# Observations

## Two trapdoors

Pat Coetzee took these photos of a trapdoor burrow (most likely that of *Stasimopus* sp.) with two trapdoors. The spider probably couldn't close the first door, and decided to create a new one.


## Bee's stinger removed

Graeme Gibbs photographed this hairy field spider (*Neoscona* sp.) that caught a bee. Graeme noted that the spider first removed the bee's head, and then the stinger, by "biting it around the base, leaving the stinger free from its body and not part of the feeding wrap".


## Woodlouse spider after moulting

Daneale Heyns photographed this woodlouse spider (*Dysdera crocata*, Photo 1) shortly after a moult. Recently, Tone Killick from the UK also posted photos of one while moulting (Photos 2-6). The last photo was taken 12 hours after the moult.

## Predation record

In the previous newsletter there were two cases of a common daddy longlegs spider (*Smeringopus* sp.) preying on a small baboon spider (Harpactirinae). It seems it's not such an uncommon occurrence, as Jarrod Todd also photographed one recently. They surely are formidable spiders for their size.


## Bark spider with rock anchor

Sandi Leigh Moore filmed a video of a bark spider (*Caerostris* sp.) spinning or repairing a web with a small pebble at the bottom, where the web is not anchored to anything. Could this spider have deliberately used this pebble to weigh down the web? It would be fascinating if that is the case.

The video can be seen here:
https://web.facebook.com/groups/101951926508391/posts/6014463535257171/?comment_id=6014609321909259&notif_id=1680443206380039&notif_t=group_comment_mention

## Inter-genus mating

Nikie Scott posted these photos on iNaturalist of a male *Trichonephila* cf. *senegalensis* attempting to mate with a female *Argiope australis*. The male is clearly shown attempting to copulate with the female, so it's not merely a case of coming in for a closer look.

## Tent web

Michele Tarboton photographed this web in Modimolle, Limpopo, belonging to a tropical tent-web spider (*Cyrtophora citricola*). It's a rather fascinating example of the intricacies of their web.

## Spider with fungus

Janine Jones found this fishing nursery-web spider (*Nilus* sp.) submerged in water in her jacuzzi. It seems like the spider is infected with an entomophathogenic/araneopathogenic fungus. The spider was still alive, and, according to Janine, quite at home under the water. If the water had chlorine in it, it would probably get rid of the fungus, but it is probably already too late for the spider.

## Strange harvestman

Cecile Roux recently photographed this rather funny-looking harvestman (Opiliones) in Malmesbury, Western Cape, which has since been identified as *Cadella* sp.

## Rain spider nests

In a previous newsletter (see *The Spider Club News*, Vol. 36, No. 2, p. 13) we've shown various manmade and other unusual items that rain spiders (*Palystes superciliosus* and *P. castaneus*) use to protect their nest containing their eggs. Here are two more. On the right is one that used a glow-in-the dark star, posted by Marijke Rabe. She said that her niece has these stars on the ceiling in her room, which is probably where the spider got it. On the left is a nest lined with flowers from the garden, posted by Keren Meave Moss.

## Strange jumping spider

Not a Southern African species, but interesting enough to show here. This jumping spider (*Athamas* sp.) has anterior lateral eyes that are almost as large as the anterior median eyes, and located almost directly above. Photographed by Tiana Reimann in West New Britain Province, Papua New Guinea.

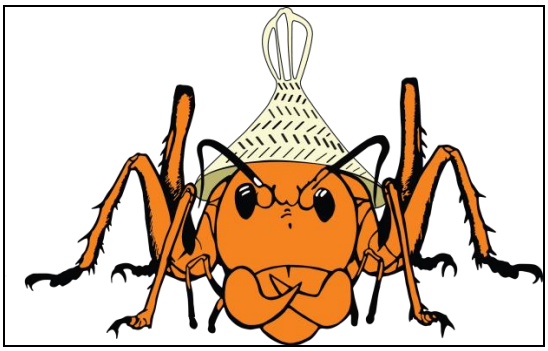
## *Uloborus plumipes* egg construction

Tone Killick from the UK photographed this feather-legged lace weaver (*Uloborus plumipes*) constructing her egg sac. It took 3 hours and 2 minutes to complete. The full post on The Silk Road can be seen here: https://web.facebook.com/TurnFear2Fascination/posts/pfbid022Gz3HYVLqPjnWricJzb86ngBHSTYNAQFKaTAtcJzn8QmPVFhjztkRroGYX17SAGMl

# Yebo Gogga

## University of the Witwatersrand – 17-21 May 2023

**by Astri Leroy**



This year the iconic Parktown prawn (*Libanasidus vittatus*) logo has a fine Lesotho hat to protect it from the heat

Each Yebo Gogga has a theme and for obvious reasons, considering the threat of rising temperatures due to climate change, this year's was "Beat the Heat". We were asked for a catchy phrase for our exhibit and I came up with "Cool spiders eat the heat", which I thought was pretty good!

The Spider Club stall was quite popular, since it was the only non-permanent exhibition with live specimens. Photo: Caren Neal.

The Yebo Gogga exhibition began many decades ago (I can't remember how many) at the Johannesburg Zoo and subsequently moved to the Oppenheimer Life Sciences building at Wits University. Although I have only missed one Yebo Gogga since its inception, it has been a very long time since I manned our stand on weekdays. It is very different from being there over a weekend. Hordes, and I mean HORDES, of children from primary school age to Grade 11 kept on arriving, sometimes several schools at a time. The noise can be incredible when several hundred kids all talk at once and I thoroughly enjoyed the interactions, but trying to make sense of the questions from 20 or 30 kids all asking at the same time in a variety of South African accents was confusing and, by the end of each day, exhausting.

Our stand was the only one with genuine live exhibits so it was very popular and on Wednesday I was on my own. On Thursdays a delightful student, Makgoshi, was assigned to help. Once I'd explained which spiders were which, she was amazing and happily handled the large female rain spider. I'm surprised the poor spider didn't just lie down and sleep by the end of the day, but she behaved like a real lady and is back home now, eating crickets and keeping cosy until I release her in the spring.


Some photos of the Spider Club stall at the Yebo Gogga exhibition. Photos 1 & 3 by Astri Leroy. Photos 2 & 6 by Caren Neal. Photos 4, 5, 7 & 8 by Garrie Wright.

As always I am surprised how much children know nowadays; must be because of TV and Google, but the varied reactions to spiders are quite amusing. Big high school boys try to show how macho they are by holding a spider but they are often actually petrified. Most high school girls giggle and pretend to be scared and it's often the primary school kids that will tell us what they know.

# City Nature Challenge 2023

**by Cecile Roux**

**1,870,763**
Observations

**57,227+**
Species

**66,394**
People

| City | Observations | Species | People |
|---|---|---|---|
| La Paz, Región Metropolitana de La Paz, Bolivia | 126,435 | 5,344 | 3,025 |
| Hong Kong SAR, Hong Kong SAR, China | 39,071 | 4,469 | 689 |
| Cosalá, Sinaloa, Mexico | 36,644 | 3,912 | 187 |
| City of Cape Town, Western Cape, South Africa | 52,518 | 3,847 | 1,284 |
| Houston-Galveston, Texas, United States of America | 41,736 | 3,707 | 1,477 |
| Graz bis Tierpark Herberstein, Styria, Austria | 33,106 | 3,688 | 333 |
| South Florida (#SOFLO), Florida, United States of America | 22,685 | 3,094 | 1,049 |
| Dallas/Fort Worth, Texas, United States of America | 48,021 | 3,065 | 1,305 |
| Washington DC Metropolitan Area, DC/VA/MD/WV, United States of America | 37,503 | 2,931 | 1,527 |
| San Francisco Bay Area, California, United States of America | 31,911 | 2,852 | 2,488 |

**Left:** The worldwide results of the CNC, as well as the top 10 cities sorted by number of species observed. **Right:** Louise Ferreira, Lize du Toit, Jaco Joubert, and Cecile Roux during the 2023 CNC (photo by Rupert Koopman).

Many Spider Club members participated in the annual City Nature Challenge (CNC) from 28 April to 1 May 2023. You may ask, what is the CNC? The official website states: “Invented by community science staff, Lila Higgins at the Natural History Museum of Los Angeles County (NHM) and Alison Young and Rebecca Johnson at the California Academy of Sciences (CAS), the City Nature Challenge is an international effort for people to find and document plants and wildlife in cities across the globe. It’s a bioblitz-style competition where cities are in a friendly contest with each other to see who can make the most observations of nature, who can find the most species, and who can engage the most people.”

The challenge grows every year and lucky for those of us outside the bigger cities, more rural areas can also register to take part. It is always a busy and fun weekend where we go out with our cameras and cell phones and record as many living things as possible. Everything from snakes to mosses to birds and mushrooms, insects, spiders, fungi, and plants. It is always special to get new people involved, and seeing their eyes opening to the abundance in nature. For us nature lovers, it is also a learning experience because one looks wider and photograph and try to identify organisms that are normally just part of the background. Even well-known creatures one tends to skip, thinking, “oh that is just another…”, are photographed, and one appreciates the beauty anew, and sometimes surprising discoveries are made. Events like these have enormous potential to educate as well. People tend to go out in groups and it is valuable for the botanists, birders, etc. to see our excitement about spiders, the lack of fear, the appreciation, and joy. Most people are astounded to learn that there are so many spiders all around us, that they are so small and so shy.

The overwhelming majority of observations made during the challenge are plants, as expected, but we tried to give spiders the necessary attention and many stunning specimens were found and photographed. The numbers are secondary to the enjoyment and exploration, but are also interesting.

This year, 1 996 spiders were photographed by 625 observers countrywide. I was the top observer with 283 observations, Wessel Pretorius topped the species list with 21 species, and Ruan Booysen was the top identifier with 806 identifications made. Predictably, the most observed spider was the lovely large and visible *Trichonephila fenestrata*, followed by *Euprosthenopsis pulchella* and *Latrodectus geometricus*.

Thanks to dedicated observers like Wessel, Fiona, Nerine, and me, our West Coast region boasted a quarter of all the spider observations in Southern Africa during this CNC. We'd like to issue a friendly challenge to the rest of the country for next year. Let us see if we can get spiders to be more than the current 1.6% of total observations!

We did most of our spider observations on two different slopes of Kasteelberg and also Klipkoppie Nature Reserve at Malmesbury, as well as our own backyards. The richness and diversity of our Renosterveld made it an exciting four days of discovery and surprises. No surprise, though, that *Oxyopes* spp., the grass lynx spiders, topped our list at 29 observations. Closely followed were *Theridion* spp., *Latrodectus geometricus*, and *Clubiona* spp. There were also many *Tibellus*, *Zelotes* and *Smeringopus* spp. to be found.


**1:** Grass lynx spider (*Oxyopes* sp.; Oxyopidae). **2:** False house button spider (*Theridion* sp.; Theridiidae). **3:** Grass sac spider (*Clubiona* sp.; Clubionidae).

I was really happy to find my first beautiful *Drassodella* sp., and Wessel found his first one two days later. He also added Filistatidae to our count, and I saw a stunning spotted palp-footed spider (*Diaphorocellus* sp.). Other good finds were two *Ammoxenus*, *Psammorygma*, and a small "white widow" spider (*Latrodectus pallidus*). Along with the usual theridiids we also found some rarer *Anelosimus*, *Episinus*, and *Phoroncidia* spp. One tiny *Euryopis* was conveniently holding an ant in its jaws!


**4:** Long-jawed ground spider (*Drassodella* cf. *vasivula*; Gallieniellidae). **5:** White widow spider (*Latrodectus pallidus*; Theridiidae). **6:** Spotted palp-footed spider (*Diaphorocellus* sp.; Palpimanidae).


**7:** Termite hunter (*Ammoxenus* sp.; Gnaphosidae). **8:** Butterfly theridiid (*Episinus* sp.; Theridiidae). **9:** Comb-footed spider (*Anelosimus* sp.; Theridiidae). **10:** Ant-eating theridiid (*Euryopis* cf. *episinoides*; Theridiidae). **11:** Ant-eating zodariid (*Psammorygma* sp.; Zodariidae).

We saw quite a few of the adorable *Rhene* jumping spiders at Klipkoppie, and some juvenile *Kima* salticids; we are not sure if they are *K. africana* or *K. variabilis*. Another salticid we were unsure about is a large one with beautiful palps that could be either *Habrocestum* or *Phlegra*. There were also many *Heliophanus*, *Pellenes tharinae*, *Menemerus*, *Evarcha*, *Thyene*, *Pseudicius*, and *Icius*. We had the privilege of watching a mating pair of *Icius insolidus*. We noticed the male doing its mating dance and luckily the female accepted him and they proceeded to mate, hopefully successfully; the male had some trouble manipulating the female with his single foreleg. Among the gnaphosids we saw there were *Xerophaeus*, *Zelotes*, *Asemesthes*, *Drassodes*, *Micaria*, *Aphantaulax*, *Nomisia* and *Megamyrmaekion*.


**12-14:** Jumping spiders (Salticidae). **12:** *Kima* sp. **13:** *Harbocestum* or *Phlegra* sp. **14:** *Icius insolidus* mating. **15-18:** Flat-bellied ground spiders (Gnaphosidae). **15:** *Megamyrmaekion* cf. *schreineri*. **16:** *Aphantaulax* sp. **17:** *Xerophaeus* sp. 18: *Asemesthes* sp.

Apart from the ubiquitous *Oxyopes*, we found a crowned lynx spider (*Hamataliwa* sp.) and some stunning green lynx spiders (*Peucetia* spp.). Two igloo spiders (*Diores* sp.) surprised us, and there were two tiny *Opopaea* (goblin spiders) that were quite a challenge to capture. Another challenge was photographing *Cyclosa insulana* swaying on their webs in the wind. *Argiope* spp. were scarce. Wessel found one *Cyrtophora citricola* and Fiona captured one of the *Neoscona triangula* that loves her house. Other orb weavers we saw were *Larinia*, and a couple of small *Hypsosinga* that Nerine and I found.


**19:** Green lynx spider (*Peucetia* sp.; Oxyopidae). **20:** Garbage-line spider (*Cyclosa insulana*; Araneidae). **21:** Igloo spider (*Diores* sp.; Zodariidae). **22:** Goblin spider (*Opopaea* sp.; Oonopidae).

Interestingly enough, the most observed thomisid was *Pherecydes*, the beautiful wide-eyed crab spider. We also found *Monaeses*, *Tmarus*, *Synema*, a few *Xysticus*, and of course *Thomisus citrinellus*. We saw many funnels where Agelenidae were hiding, but only a few of these shy spiders showed themselves. The only pisaurids we found were a couple of *Euprosthenopsis pulchella* and some small *Rothus* spp.

Lycosids were mostly small black ones that were too hard to photograph! There was one interesting observation though – I found a small wolf spider that seems to have made a retreat with sand and silk inside a dry seed head. It ventured out sometimes, but dived back into the retreat when disturbed.


**23-25:** Crab spiders (Thomisidae). **23:** *Tmarus* sp. 24: *Xysticus* sp. **25:** *Pherecydes* sp. **26:** A wolf spider (Lycosidae) that built its sand retreat in a seed pod.

Kloovenburg had some stunning spiders, as usual. We found a lovely large zoropsid (*Phanotea* sp.), two *Spiroctenus*, a couple of *Parapalystes* (to Wessel's delight), an unusual red trachelid, *Mimetus*, *Capiona*, some *Scytodes*, and a very sturdy *Palpimanus* sp.


**27:** False wolf spider (*Phanotea* sp.; Zoropsidae). **28:** Trapdoor spider (*Spiroctenus* sp.; Bemmeridae). **29:** Arid rain spider (*Parapalystes* sp.; Sparassidae). **30:** Ground sac spider (cf. *Afroceto* sp.; Trachelidae).

The four days of the CNC went by in a happy blur, and the limited time to edit and upload photos to the iNaturalist website was taxing, but good. Looking back, it is astounding how much a handful of dedicated people can observe in nature while also realising that we really only see what we know. There are so many hidden gems to still discover.

# Unknown huntsman spider from the Western Cape

**by Wessel Pretorius**

In the hardy Renosterveld, wild rosemary/snow bushes, *Eriocephalus africanus*, are quite a familiar sight. Once the flowers are done blooming, they produce felted seed heads from which they got their Afrikaans common name, “Kapokbossie”. These woolly seed heads are home to some amazing spiders, and it is one of these that I am writing about.

Unknown to science as I am writing this, we are currently calling this beauty the golden huntsman, a name suggested by Paul van der Walt. Belonging to the Sparassidae family, it has some features that resemble the *Palystes* genus, yet there are some distinct differences.

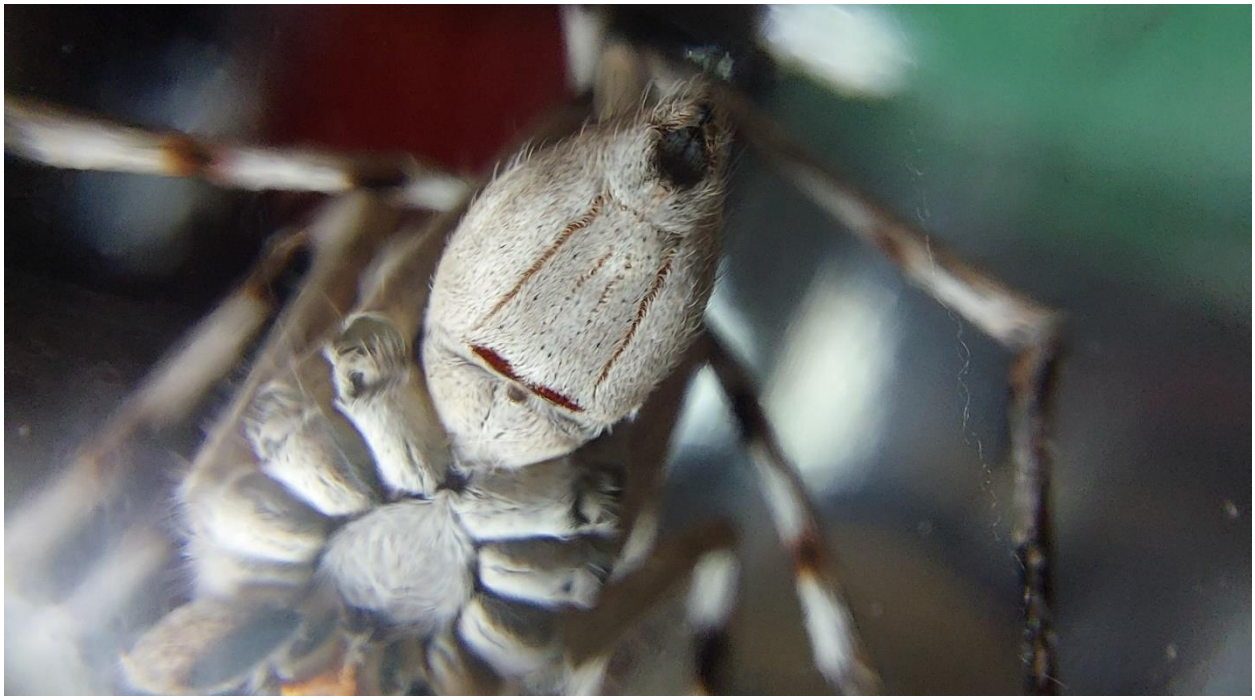
Similarities with (*) *Palystes* spp. and (**) *Parapalystes* spp. include:

- (*) (**) 4:4 eye pattern, with anterior eye row (AER) (eye row in front of the face) straight. Anterior lateral eyes (ALEs) (outside front eyes) larger than anterior median eyes (AMEs) (centre front eyes). Posterior eye row (PER) (eye row on top of head) straight and wider than AER.
- (*) (**) Clypeus consisting of white or light-yellow setae under first eye row (AER).
- (*) (**) Bell-shaped pattern on the abdomen, although the *Palystes lunatus* species group does not share this feature.
- (*) (**) Bands under the ventral patellae and tibiae.
- (*) Habit of resting with one or both back legs extended while other legs are pulled against the body.

Suspected female specimen from Klipkoppie Nature Reserve, Malmesbury – 30 October 2022.

Differences between this spider and *Palystes* spp. and *Parapalystes* spp. include:

- Vivid golden to burnt orange appearance.
- Dorsal patterns on the abdomen and carapace (although the *P. kreutzmanni* males look very similar).
- Lack any marking on the sternum, coxa, or ventral femora.
- Much smaller, with mature specimens observed thus far being between 12 mm and 18 mm in total body length.
- Livelier than *Palystes* and especially livelier than the more docile *Parapalystes*.
- Chelicerae light with longitudinal dark band in front.
- Pointed abdomen not seen in any *Palystes* spp.
- They make retreats, as mentioned, by bundling the woolly seeds heads of *E. africanus* together. Unfortunately I have been unable to capture the retreat on a photo as of yet.



Ventral side of male from Klipkoppie Nature Reserve showing pattern on abdomen, but no pattern on sternum or coxa.

Male specimen from Klipkoppie Nature Reserve. They are able to control the movement of their leg spines. On the left they are erect, but not on the right. On the right the RTA and embolus are slightly visible.

I have yet to observe a mature female, which leaves a few unanswered questions at this stage.

From my personal observations, as well as the observations of Cecile Roux, Paul Bester, and others from the Facebook pages of The Spider Club of South Africa, Huntsman Spiders of Southern Africa, and the

iNaturalist platform, I estimate that this species' distribution stretches over the entire Swartland Renosterveld.

There are clearly other related species out there. How closely they are related only time will tell. Are we looking at a new genus, or multiple?

Specimens from abandoned *Stegodyphus dumicola* nests can be seen below, captured on 9 April 2023. This was not the only time I have found this species in these community spider nests. The very first time I saw this species, I was spidering with Cecile Roux in the Klipkoppie Nature Reserve when one sprang out of an *S. dumicola* nest. It vanished into the underbrush, never to be seen again, leaving us scratching around in disappointment for a good time after.

Above on the left one can see the typical resting stance that this species shares with *Palystes* spp., where one or two back legs are extended.

This specific specimen seems to have some variation in eye ratio in the AER as can be seen below, with the ALEs similar in size than the AMEs. We know from experience and multiple observations that the eye ratios of the ALEs and AMEs differ between instars of many huntsman species.

An observation by Paul Bester from Riebeek West in 2014. Notice the typical long legs for these male specimens, similar patterns, and stances, as well as the thin line down the carapace from the eyes. This species had a similar ventral side as the others.

A juvenile specimen, observed by Cecile Roux in Riebeek Kasteel on 18 March 2023.

Another one by Cecile Roux at Hopefield on 17 November 2022.

This specific specimen also seems to have a variation in eye ration of the AER, with the ALEs similar in size than AMEs.

I am not originally from the Western Cape and was never sure if I would stick around here, but these arid bushes filled with all the marvellous worlds of micro life has swept me off my feet. I cannot wait for my next encounter with one of these sparassids so I can discover more about them.

Here are a few similar species, but with distinct differences:

**1. "Kenilworth huntsman"**

Currently referred to as the Kenilworth huntsman, there have been quite a few observations of similar ones, mainly from the Kenilworth Racecourse Conservation Area. This one has spots on the sternum and coxa, like *Parapalystes* spp., but similarly sized as the golden huntsman. The abdominal pattern is similar in all the observations of these, but unique in the family. This mature male was observed by me and Norman Larsen, with a total body length of around 7 mm.

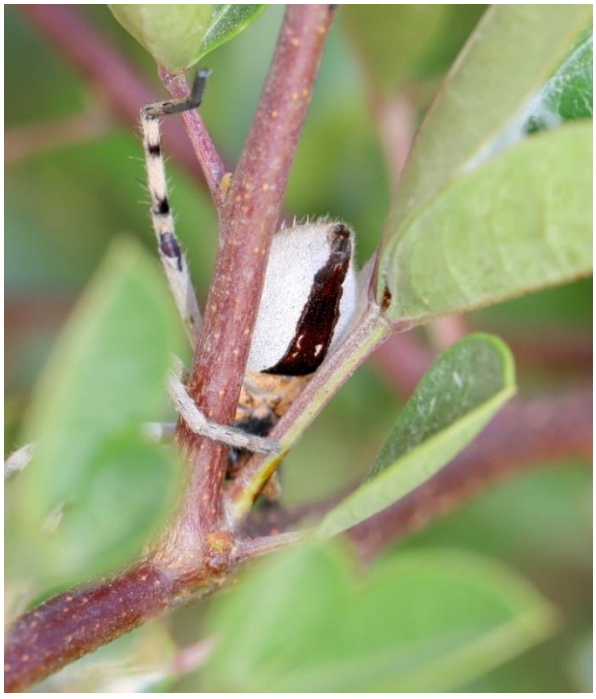
Left: Dorsal view taken by me. Right: Ventral photo by Norman Larsen.

Below is another one making a retreat inside woolly seed heads, but this time they belonged to a different plant. Dorsally, this female looked similar to the golden huntsman, but ventrally there are some differences in colouration, with a black sternum and red bell-shaped pattern on the abdomen. The total body length is estimated to be around 20 mm. Photos by Cecile Roux.

This female was on her egg sac inside the woolly retreat.

**2. "White huntsman"**

Then there is the white huntsman found by Cecile Roux around Darling, with a very similar dorsal side, albeit much lighter. The ventral side, however, is like *Palystes kreutzmanni*, having yellow coxae, a black sternum, and a blood-red bell pattern on the abdomen. This specimen also has a long pointy abdomen.



Every time I find one of these unknown beauties, or stumble onto an observation of one by someone else, it always makes my day, sometimes even my week. Never underestimate how close you are to something amazing. Honestly, on multiple occasions we spent five or more hours in the field, and when it is time to return to the vehicles, we are only a hundred steps away.

These collections of information have been made possible by all the passionate people who share their finds on the Facebook pages of The Spider Club of Southern Africa, Huntsman Spiders of Southern

Africa, and the iNaturalist platform. Special thanks to Cecile Roux and Charl du Plessis. Cecile, who spends many hours with her nose close to the ground, with her camera making calluses on her hand, thanks for inviting me to share in your adventures. Charl du Plessis, for all the technical support and his keen spirit to pedantically look at all the small details of these beauties with me, and for deciphering all the riddles of the old scientific papers and interpreting them. Also, to all the actual experts out there who spend their time to help us laymen to understand to complicated taxonomy and science. To Rudi Steenkamp, the most dedicated member of the Spider Club, and also to his better half, Jeanne.

“Look at the spider.”
-Wessel Pretorius-

# The widow and the rattlesnake... and other LD50 tales

**by Benjamin Carbuccia**

The following was taken directly from the Nopeland Discovery blog, written by Benjamin Carbuccia. The blog can be found here: https://nopelanddiscoveryblog.blogspot.com/2023/04/the-widow-and-rattlesnake-and-other.html?fbclid=IwAR1zjBlqQzI-AalwE28e-aylDHUJSrKdOqVtjKc-q3euzO4GecBLJpVn0eA

*"A black widow's venom is 15 times more toxic than a rattlesnake's"*
National Geographic documentary

It's definitely one of the most commonly shared pieces of spider trivia. It's hard to escape it: every time a wildlife documentary features a black widow, you can bet this comparison with rattlesnake venom will pop up at some point. You may be surprised to learn that this claim doesn't say much about how "deadly" those spiders are. Actually, it doesn't say much about anything: although it does sound a lot like a fact, it's just a meaningless factoid, little more than a mere urban legend.

Venom 15 times as potent as a rattlesnake's? That sure sounds scary... But what does it mean?

Similar comparisons, based on LD50 values, are also often shared about some species of venomous snakes (particularly some Australian Elapidae famous for being "the most venomous snakes on Earth")

and some other venomous or poisonous animals. They do sound scary, and make these animals sound very deadly. But how relevant are they?

"Drop for drop, boomslang venom is the most potent of all African snakes" is another common factoid based on LD50 comparisons

## What is LD50?

Venoms and other toxic substances can have an enormous variety of different effects on living organisms. Some overstimulate or shut down nerve receptors, causing a wide array of neurological issues such as extreme pain, involuntary muscle contractions, heartbeat irregularities, or paralysis. Some thin or thicken the blood, causing anaemia, haemorrhages or clotting. Some cause the destruction of cell membranes, which results in tissue necrosis in skin or internal organs, or hemolytic anaemia. Some toxic substances even alter the DNA or mess with the way we assimilate some vital chemical elements.

The effects of toxic substances vary from barely noticeable to lethal, and how fast their effects appear also varies a lot. Some have perceptible effects almost immediately upon exposure, while others can take months or even years of prolonged or repeated exposure before the first symptoms of poisoning appear.

It all depends on the type of poison, and, even more importantly, on the dosage. With toxic substances, it's all about the dose. Anything, including elements necessary to our survival, is toxic in large enough amounts: even water poisoning is a thing!

However, some things are more toxic than others, and some can cause death or harmful effects even in minute amounts. How much is needed to cause observable poisoning, or death, is what measurements such as lethality and toxicity tests strive to show.

In the broad lines, these tests are simple: different, and increasingly large, doses of the tested substance are administered to subgroups of a sample population of animals or cell cultures, until the investigated effect is observed in all the individuals of a subgroup; that's how the doses of substance required to cause these effects are determined[1]. In lethality tests, the effect in question is the death of the individuals. The LD50 is the minimal dose, in mg of substance per kg of organism, that kills 50% of the sample population[1] (LD50 means "Lethal Dose 50%"). The more potent the substance, the lower the LD50 value will be.

The venoms of some cone snail species (thankfully not this *Conus ventricosus*) have some of the lowest LD50 ever recorded in venomous animals (NEVER TOUCH OR HANDLE A LIVE CONE SNAIL)*

Of course, it is extremely useful to know how lethal a substance can be. It can, for instance, show how efficient some potential pesticide could be against a targeted "pest" species, and how harmful it could be for those we don't want to harm. It's also really useful in the early stages of the pharmacological study of a molecule, in order to assess whether or not its toxicity is likely to be a problem for use as a drug.

In venom studies, these LD50 measurements can provide a rough idea of how potent the venom of a species is to mammals, including humans.

Generally, lethality tests (when it's the toxicity to humans that is investigated) are conducted on 20-gram mice.

## A measurement to be taken with MANY grains of salt

It is, however, very important to always keep in mind that LD50 values are obtained from tests on mice or other non-human animals. Toxicity is relative, and the same substance often affects different species differently.

It is, for instance, a well-known fact that some mushrooms are so toxic to humans that a few grams are enough to kill an adult. Meanwhile, slugs eat those mushrooms, apparently unaffected by their toxins.

Mediterranean black widow (*Latrodectus tredecimguttatus*) venom has been shown to be considerably more toxic to mice than to frogs, much more to flies than to cockroaches, and that guinea pigs are much more sensitive to it than mice. Injected to guinea pigs, that venom was more than 1 000 times as potent as... Itself, injected to a frog!

Even genetically different stocks of mice can have different sensitivities to the same substance[1], so precise LD50 comparisons aren't really relevant if the animal species (or even, ideally, the genetic stock) on which the tests were conducted is not specified.

That's also why LD50 can only give a rough idea of the potential toxicity of a substance to humans, and should never be extrapolated directly from mouse to human. Brown button/widow spider (*L. geometricus*) venom, for instance, was found to be much more lethal to mice than Northern (*L. variolus*) and Southern black widow (*L. mactans*) venoms, in the same experimental conditions. There is, however, no indication that it is also the case for humans; actually, envenomations on humans by *L. geometricus* are, on average, markedly less severe than bites from black widow species (but, as we will see later, there are other factors involved).

The opposite is also true; for instance, Sydney funnel-web spider (*Atrax robustus*) venom is much more toxic to primates, including humans, than it is to other mammals such as rats, mice or cats.

Therefore throwing LD50 values around when talking about venomous animals is entertaining, but not very useful. Saying that something is "highly toxic" without specifying "highly toxic *to what*" is not informative, and comparing different measurements of lethality *to mice* like they're directly applicable to humans is actually misleading.

Again, as mice and humans are quite closely related, something that's very toxic to them is likely to also be harmful to humans, but saying some species of snake or spider is "twice (or 15 times) as venomous" as another, because the LD50 of its venom is twice lower than the other one, actually makes little sense.

Brown button spider (*Latrodectus geometricus*) venom was found, in a comparative study, to be much more lethal to mice than venom from other widow species, but this doesn't mean much about its toxicity to humans

Another thing about lethality tests is that they're not only highly influenced by the species they're tested on, but also by the way the substance is administered. Different methods of delivery can be used in the tests.

In lethality experiments, venom is most often injected intravenously (directly into blood vessels), in muscles (intramuscular), under the skin (subcutaneous), or through the peritoneum (intra-peritoneal). Depending on the type of venom and its main effects, the differences in LD50 induced by these different methods of injections can be vast: administered through intra-peritoneal injection, western diamondback rattlesnake (*Crotalus atrox*) venom has an LD50 26 times lower (0.72 mg/kg) than the same venom, injected intramuscularly (19.04 mg/kg)!

That's one of the most important reasons why the "black widow and rattlesnake" comparison makes no sense: while it can be safely assumed both of the compared LD50 were obtained on mice, there's no way to guess how the experiments that yielded these values were conducted. If the experimental conditions are not specified, LD50 comparisons are completely meaningless.

In addition, the "15 times more potent than rattlesnake venom" factoid makes things even worse by not mentioning which exact species of "black widow" and "rattlesnake" are compared. Both black widows (genus *Latrodectus*) and rattlesnakes (genus *Crotalus*) are not species, but genera, i.e. groups of related species.

There are 34 different species of widow spiders, most of them black and called black widows (African species are locally known as "black button spiders"), and about 50 currently recognised rattlesnake species; and different species have different venoms.

In the same experimental setting, significant differences in lethality between venoms of different *Latrodectus* species have been shown.

Rattlesnake venoms vary even more in terms of effects and lethality from one species to another, sometimes even from one subspecies to another. Injected intravenously to mice, the LD50 of the South American rattlesnake's venom, *Crotalus durissus*, is 113 times lower than the Tancitaran dusky rattlesnake's (*Crotalus pusillus*).

"Venom 15 times more toxic than a rattlesnake's"? Which "black widow" species? Which rattlesnake species? Toxic to what? In what experimental conditions? Without these crucial elements, it doesn't mean anything...

Without specifying the exact species and the mode of injection, it would be just as easy to cherry-pick LD50 values showing black widow venom "is 15 times more potent than a rattlesnake's" (for instance, by comparing the LD50 of Mediterranean black widow venom injected intraperitoneally, 0.59 mg/kg, with *Crotalus atrox* venom injected subcutaneously, 7.8 mg/kg) as it would be to "prove" the opposite (by comparing the same black widow LD50 with *C. scutulatus* venom injected intravenously, 0.03 mg/kg)!

Interestingly, when LD50 values with the same modes of injection are compared, our factoid seems to be mostly false: in the experiments conducted by McCrone in 1964, intraperitoneal LD50 on mice was 0.59 mg/kg for the Mediterranean black widow (*Latrodectus tredecimguttatus*), 0.43 mg/kg for the brown widow (*L. geometricus*), 1.30 mg/kg for the Southern black widow (*L. mactans*), 1.80 mg/kg for the Northern black widow (*L. variolus*) and 2.20 mg/kg for the red widow (*L. bishopi*).

These values are in the same range as the intraperitoneal LD50 of many rattlesnake venoms, such as the eastern diamondback (*C. adamanteus*, 1.67 mg/kg), the western diamondback (*C. atrox*, 0.72 mg/kg), or the northern Pacific rattlesnake (*C. oreganus*, 2.3 mg/kg), and much higher than the South American rattlesnake (*C. durissus*, 0.0478 mg/kg), whose venom seems to be one of the most potent (to mammals) among rattlesnakes.

That claim is only somewhat true with the highest intraperitoneal LD50 value among the sampled rattlesnake species, *C. willardi* (12 mg/kg).

Contrary to popular belief, black widow venom is not much more potent than the venom of most rattlesnake species

These issues also apply to similar claims about other venomous animals, such as "the inland taipan (*Oxyuranus microlepidotus*) has the most toxic venom of all snakes", "the Brazilian wandering spider (*Phoneutria nigriventer*) is 16 times more venomous than the black widow" or "drop for drop, the boomslang has the most potent venom among African snakes".

These claims generalise something that cannot, by definition, be generalised. LD50 values only make sense within the experimental setting in which they are obtained. Depending on how the venom is injected, and (of course) to what, each of them can be true or false. They are therefore worthless and do not achieve anything besides sounding scary.

However, even if the right information was added to these assertions to make them correct, they would still not say much about how dangerous to humans these animals actually are. It takes more than just potent venom to make a species dangerous.

## Venom potency and danger

Steel is about eight times denser than the average watermelon, and much harder. It would be quite silly, though, to understand that fact as "steel hurts more than watermelon". Of course, a 5-kg watermelon, hurled at a human face, will hurt much more than a 5-g steel ball launched at the same speed. Sure, steel is harder and denser, but that doesn't really matter when the size difference is so great. Same goes with venom: potency is one thing, but one thing that matters much more is the dose.

Even if the comparison between black widow and rattlesnake venom actually made sense, it would absolutely not mean that a black widow's bite on a human would be more dangerous than a rattlesnake's. At all. Why? Because the volume of venom a rattlesnake injects when it bites is several orders of magnitude greater than what a black widow delivers.

In one defensive bite, a Western diamondback rattlesnake (*Crotalus atrox*) typically delivers 3 to 28 mg of venom per fang, i.e. 6 to 56 mg if both fangs penetrate the skin. Meanwhile, an adult female Western black widow (*L. hesperus*) will typically inject 5 to 10 µg (0.005-0.01 mg) of venom in a defensive bite.

Therefore, a rattlesnake typically injects a volume of venom roughly 1000-10 000 times larger than what a black widow does. Thus, *even if it was indeed* 15 times less potent than a black widow's, the sheer amount of venom injected by a rattlesnake (at least by one of the larger species of rattlesnakes) would still make its bite much more toxic than a black widow's.

In addition, widow spiders have short fangs, are web-bound and only bite humans if pressed against the skin. Statistically, a close encounter between a human and a black widow is therefore very unlikely to result in a bite. The people unlucky enough to get bitten and envenomated are generally in for an excruciatingly painful, exhausting, and scary experience that will last a few hours to several days (and sometimes lingering after-effects for weeks), but even without antivenom, the prospects of survival and eventual complete recovery are very high (96-99.8%). Antivenom or not, fatalities are extremely rare.

Rattlesnake bites, on the other hand, are not only more likely to happen in case of close confrontation between human and snake (although, like any snake, it will take any opportunity to escape without a fight if possible), but are also a much more serious medical emergency.

While the effects of black widow venom are almost purely neurotoxic in nature (it affects the nervous system) and reversible, rattlesnake venom (the intensity of the different effects vary depending on the species) is neurotoxic, haemotoxic (messes with blood coagulation), and cytotoxic (it destroy tissues). Envenomations by the larger species almost always require multiple vials of antivenom to counteract the effects of the venom, and can cause permanent damage to skin, limbs and internal organs (most notably kidneys), particularly if the antivenom is administered too late.

Therefore, less potent venom or not, rattlesnakes are much more dangerous than black widows; there is no debate about that.

In case of close encounter with humans, widow spiders will try to avoid wasting their venom in a defensive bite; those generally happen when a spider finds itself accidentally trapped against the skin*

Lethality and dangerousness are actually two independent notions. Lethality is the ability of a substance to cause death, but death is only one of the negative consequences (arguably, the most extreme) that envenomation can have. Just because the venom of an animal species is rarely or never deadly to humans (or not as lethal as the venom of another species) doesn't mean it can't cause some harrowing, or even incapacitating symptoms.

A non-fatal bite from a venomous snake can still be an ordeal, sometimes causing irreversible damage to skin, limbs, internal organs or parts of the nervous system; it can even result in permanent invalidity. Even when the effects are reversible, victims can find themselves temporarily unable to work and provide for themselves and their families, and, in some cases, have expensive hospital costs to cover; it can therefore be economically devastating to people who were already in precarious financial situations.

In countries with very high prevalence of snakebites, their impact on public health and the economy is significant, even though the vast majority of victims survive the bites.

Venom lethality of the involved snake species (as long as the venom in question is potent enough and injected in large enough quantities to cause severe envenomations in humans) actually does not matter much in the picture of snakebite significance.

While Australia is famous for being home to many of the "most venomous snake species on the planet" (in terms of LD50), it is also one of the places on Earth where the prevalence of both snakebite cases and fatalities are the lowest.

On the other hand, many of the world's most dangerous snakes, in terms of actual impact on public health (in number of bites on humans, likelihood of an encounter with humans, and of this encounter

resulting in a bite, and common consequences of an envenomation) are far from being among the most potent in terms of LD50 on mice.

For instance, in South and Central America, the snakes armed with the most toxic (to humans as well as mice) venom are, arguably, coral snakes (genus *Micrurus*); human envenomations by coral snakes are very dangerous and can be life-threatening. The neurotoxic venom causes neuromuscular blockade, which results, in severe cases, in paralysis and respiratory failure.

However, the most dangerous and feared snakes on the continent are not coral snakes, but pit vipers, particularly species in the genus *Bothrops*, known as "lanceheads" or "fer-de-lance". While their venom is less potent (particularly in terms of subcutaneous LD50) than most coral snakes, *Bothrops* spp. have long fangs, large venom glands, cryptic colours, and a tendency to freeze and rely on camouflage instead of fleeing from potential threats, and strike readily. Rodents make up a large part of their diet, and because of that, they can be abundant in agricultural zones and around human settlements.

Although fatalities are rare, and only a minority (4-14% of envenomation cases, depending on the species) of bite cases are severe, *Bothrops* bites can still result in coagulopathy, haemorrhaging, necrosis, acute kidney injury, and are prone to infection.

That combination of traits makes *Bothrops* species the most dangerous snakes in South America, as they are the most commonly involved in snakebite cases: in Brazil, up to 70% of bites by venomous snakes are caused by this genus.

Meanwhile, coral snakes, with their bright colours, shy nature and tendency to frequently administer dry (venomless) bites, only account for 1-2% of snakebite incidents; despite their more potent venom, they are therefore less dangerous than lanceheads.

While their venoms aren't the most potent among South American venomous snakes, their abundance, camouflage, large fangs, and tendency to stay still and strike readily when threatened, make *Bothrops* species (like this *B. atrox*) the most dangerous snakes on the continent (Photo: Jérémie Lapèze)

A similar situation exists in Southern Africa: the boomslang (*Dispholidus typus*) has venom with a lower (intravenous, mice) LD50 than the puff adder (*Bitis arietans*) or the Mozambique spitting cobra (*Naja mossambica*), and even (again, only intravenously) than the black mamba (*Dendroaspis polylepis*). However, bites by this shy, fast, mainly arboreal species are quite rare, and are most often induced by attempts at handling the snake.

Meanwhile, although not the snakes with the most lethal venom in the region, the puff adder and Mozambique spitting cobra are the most common causes of severe bite incidents, despite sharing the area with 15 other dangerously venomous snake species.

In addition to their very toxic venom that can cause extensive tissue damage, these snakes display behaviour that make them susceptible to conflict with humans: the Mozambique spitting cobra has a nervous, highly defensive disposition towards potential threats[2]; the puff adder often freezes in its tracks and relies on camouflage when approached[2] instead of fleeing, and can strike with impressive speed[2]. In addition, these species are fairly often found at ground level[2] in the vicinity of human dwellings and farms, attracted by rodents, and the Mozambique cobra is even known to sometimes enter houses at night.

The black mamba (*Dendroaspis polylepis*) causes much fewer bites, but its large size, nervous temperament and its ability to inject large doses of highly neurotoxic, fast-acting venom, which makes its bites frequently life-threatening, make it a very dangerous animal. It is often regarded as the most dangerous snake on the continent[2], and is indisputably much more dangerous than the boomslang.

Its venom may not be as potent as other species in the area such as the black mamba or the boomslang, but a puff adder's bite can still cause extensive, sometimes permanent, and potentially life-threatening damage to the human body, and its camouflage and behaviour make it susceptible to conflict with humans.

Animals with extremely lethal venoms are therefore not always the most dangerous: many factors matter more in the picture than just venom potency! Much more than the drop-for-drop toxicity, the ability of the animal to efficiently deliver large quantities of venom, the propensity to do so in case of confrontation, and the likelihood of encounter and hostile interaction with humans, are what determine the danger level of a venomous species.

Lethality tests can be very useful for scientific research, for multiple applications, and in that context, LD50 values definitely matter. From a nature enthusiast's perspective, they can be entertaining and fun to talk about and compare, and the fact that some animals have evolved such impressively efficient weapons definitely inspires a sense of awe and respect. They are not, however, a tool for understanding, and even less for precisely measuring, how dangerous to humans the animal that carries the venom would be in the field. This is not their purpose, and they should never be understood as such.

In addition to that, they make very little sense when taken out of their context, and comparisons of values obtained from unspecified experimental settings will only be empty, meaningless factoids; all these can do is mislead and spread unnecessary fear.

* I am a trained professional, experienced in working with medically significant arachnids and other venomous wild animals in the field. Please do not attempt to replicate what you see on these images; free handling wild animals, particularly those potentially capable of harming humans, is never advised, and is not something I do or condone outside of specific circumstances.

## References

References are integrated in the text of the article; the words in blue are clickable and will redirect you to the sources of the information.

Paper references:

[1] Rollard C., Chippaux J-P. & Goyffon M., *La fonction venimeuse*. Ed. Lavoisier, Paris, 2015.
[2] Alexander G. & Marais J. *A Guide to the Reptiles of Southern Africa*. Ed. Struik Nature, Cape Town, 2007.

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# Anka se goggastories

deur Anka Eichhoff

Die volgende stuk is direk vanaf Anka Eichhoff se blog. Om haar stories te lees, besoek haar webwerf by https://www.kyffhauser.co.za/Goggastories.htm

## Langspintepel-boomspinnekop-wat-nie-skaduwee-gooi *Hersilia setifrons*

Om hierdie spinnekoppe raak te sien, moet jy gelukkig wees of 'n geoefende oog hê. Hulle is nogal groot, van langste poot na oorkantste langste poot gemeet, maklik 5 tot 6 sentimeter in deursnee of selfs meer; die lyf is maar slegs omtrent 1 cm lank Hulle kleur en versierings bied 'n perfekte kamoeflering op die bas van die boom, waarop hulle sit. Hulle kan selfs van kleur verander om aan die agtergrond aan te pas. Daarby sit hulle heeltemal plat, gooi geen skaduwee nie, en **doodstil** vir dae, weke!! op dieselfde plek in dieselfde posisie. Links bo op die foto sien ons 'n mannetjie, op die regter foto sit die wyfie met 'n wyer lyfie by haar eiers. Die mannetjie, herkenbaar aan sy baie lang pote en die skraler lyfie, sit gewoonlik 'n entjie weg van haar. Of hy vir nog 'n kans wag om te paar of haar net bewaak, weet ek nie. Wat ek wel weet is, dat die wyfie meer as net eenkeer eiers lê. Die eiersak is 'n plat ronde sak vasgemaak teen die boom se bas. Dan word die eierkokon bedek met 'n "kombersie" waarin stukkies van die boombas ingeweef is; sodoende is die plek skaars sigbaar.

*"kombersie" teruggeslaan*

*stukkende eiersak met ongeveer 50 eiers*

*miere dra onbeskermde eiers weg*

Na 'n ruk word die "kombersie" vaal, lyk soos die boombas. As die wyfie-spinnekop opnuut eiers lê, doen sy dit effens langs die eerste plek met die versteekte eiers; die nuwe kombersie oorvleuel die ou ene ietwat. Daar sit sy dan en hou wag, moontlik totdat die kleintjies uitgebroei is.

Kort nadat ek die nessie oopgemaak het om af te neem, het miere (moontlik *Hagensia* spesie) verskyn en eiertjie vir eiertjie weggedra…dis seker kos met hoë proteïengehalte. Na vyftien minute was alles opgeruim en skoon asof daar nooit 'n spinnekopnes teen die boom gesit het nie.

↙Aan die spintepel-kant van die spinnekop sit die eerste eierpakkie onder die skaars sigbare sykombers; aan die kop-kant van die spinnekop sien ons die nog ligte sykombers wat die tweede eierpakkie bedek.

Op 'n veilige afstand van die wyfie waak die mannetjie oor haar.

Wat gebeur nou, as die wyfie iets oorkom en nie meer oor die eiers kan waak nie?

Ek het getoets en die wyfie verwyder om te identifiseer. Die **mannetjie het die taak van die wyfie oorgeneem** en sit nou na tien dae nog daar; af en toe verdwyn hy, maar dan sien ek hom weer daar rond. Ouer- of dan Pa-sorg van die aard is by spinnekoppe tog iets buitengewoons en verdien regtig hoogagting.

*Hersilia* spinnekoppe is meesterjagters, en hulle geheim is kamoeflering en **geduld.** Hulle sit doodstil en wag hulle prooi in. As dit naby genoeg gekom het, druk hulle dit met hulle besonder lang spintepels teen die boombas vas. Dan swaai die spinnekop blitsvinnig sy hele lyf kloksgewys om die prooi, gesigkant weg van die prooi en pen so die prooi met sydrade teen die boom vas. Dit lyk asof die spinnekop om die prooi swaai-dans sonder om die pote te beweeg. Hierdie gedrag is kenmerkend vir *Hersiliidae* spinnekoppe. Kenmerkend is ook die derde paar **kort** beentjies,wat dikwels dig teen die agterstepaar pote lê en skaars sigbaar is, dus aan die spinnekop 'n voorkoms van 'n 'sespoot' gee.

Ander *Hersiliidae* lewe ook op bome, rotse en selfs onder klippe, eienaardige en baie indrukwekkende spinnekoppe!

Inligtingsbronne: Stefan Foord (Baie dankie!) Spiders of the Savanna Biome (Ansie Dippenaar-Schoeman, Stefan Foord & Charles Haddad Spiders of the Grassland Biome (Ansie Dippenaar-Schoeman &Charles Haddad) GOGGAgids (Erik Holm, Ansie Dippenaar-Schoeman) Filmer's Spiders (Martin Filmer revised by Norman Larsen)
Teks en Fotos: Anka Eichhoff November 2020

# Spider of the Month

Here are the spiders of the month for April, May, and June. Members on our Facebook group nominate photos throughout the month, and at the beginning of each month, vote in a poll.

## April



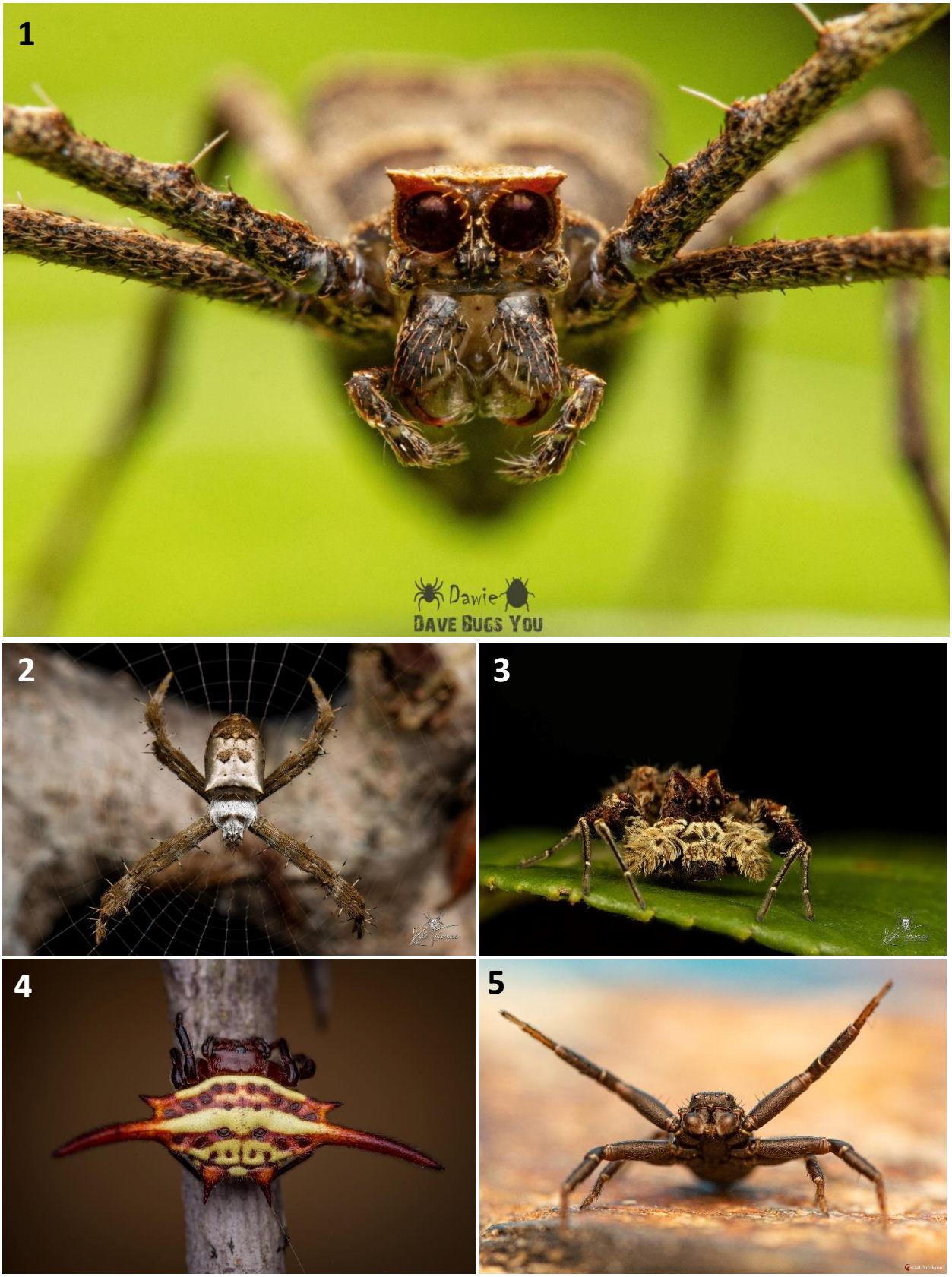



**(1)** Tanzania jumping spider (*Tanzania* sp.; Salticidae), Vida van der Walt. **(2)** Flat crab spider (*Platythomisus deserticola*; Thomisidae), Quartus Grobler. **(3)** Jumping spider (*Pellenes modicus*; Salticidae), Rudi Steenkamp. **(4)** Comb-footed spider (cf. *Exalbidion* sp.; Theridiidae), Daniel Rautenbach. **(5)** Jumping spider (*Rhene konradi*; Salticidae), Rudi Steenkamp.

# May


**(1)** Beetle jumping spider (*Pachyballus* sp.; Salticidae), Robert Wienand. **(2)** Wall jumping spider (*Menemerus* sp.; Salticidae), Mike Green. **(3)** Wall jumping spider (*Menemerus* sp.; Salticidae), Cecile Roux. **(4)** Konrad's broad-headed jumping spider (*Rhene konradi*; Salticidae), Rudi Steenkamp. **(5)** Flower crab spider (*Thomisus* sp.; Thomisidae), Beverley Barnard.

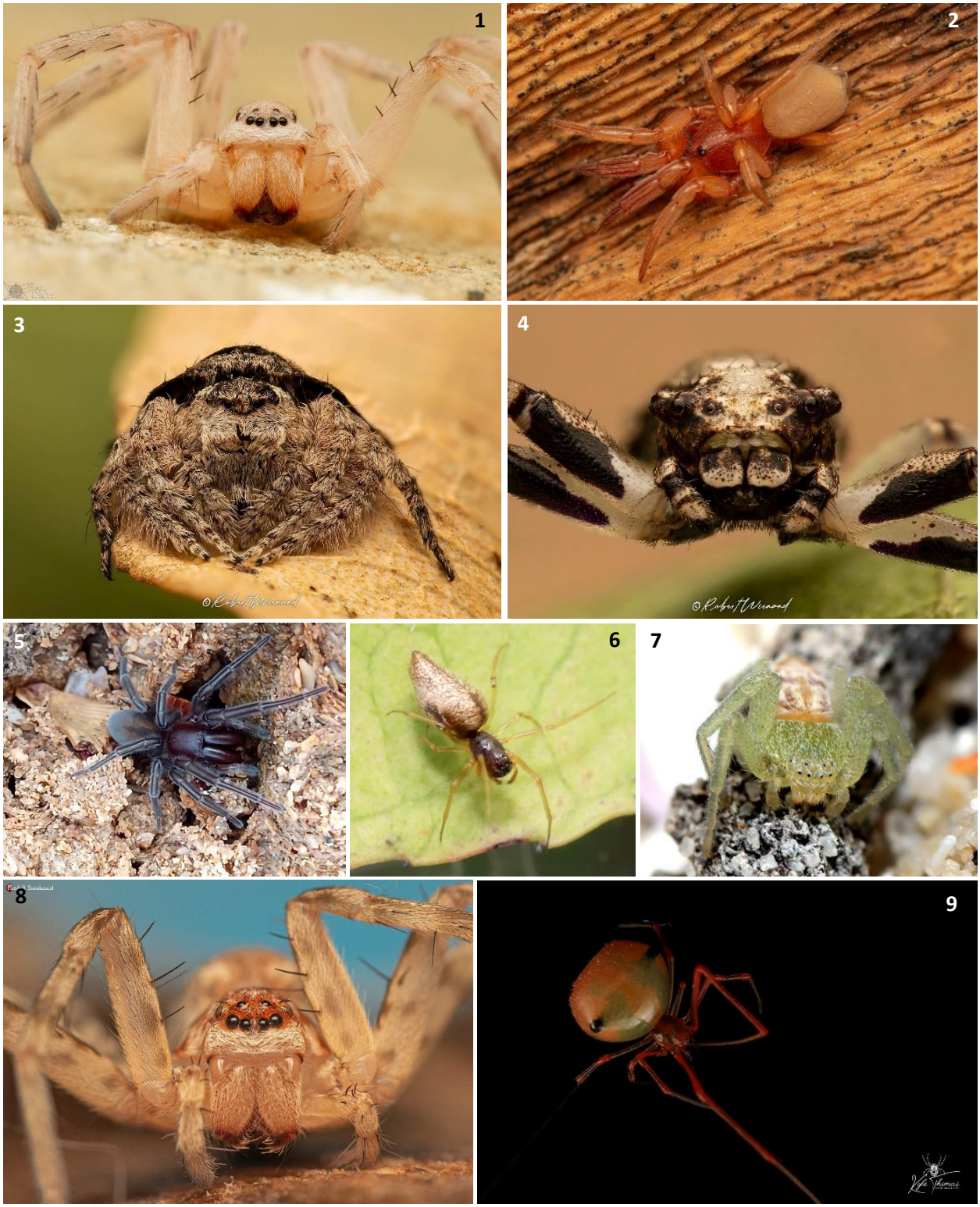
# June




**(1)** Ogre-faced net-casting spider (*Asianopis* sp.; Deinopidae), Dawie Broekman. **(2)** Doily orb-web spider (*Gea* sp.; Araneidae), Kyle Thomas. **(3)** Dandy jumping spider (*Portia schultzi*; Salticidae), Kyle Thomas. **(4)** Kite spider (*Gasteracantha milvoides*; Araneidae), Hannes Claassens. **(5)** Ground crab spider (*Xysticus* sp.; Thomisidae), Rudi Steenkamp.

# Honourable Mention

These are a few spiders that didn't win Spider of the Month, but deserve to be showcased.



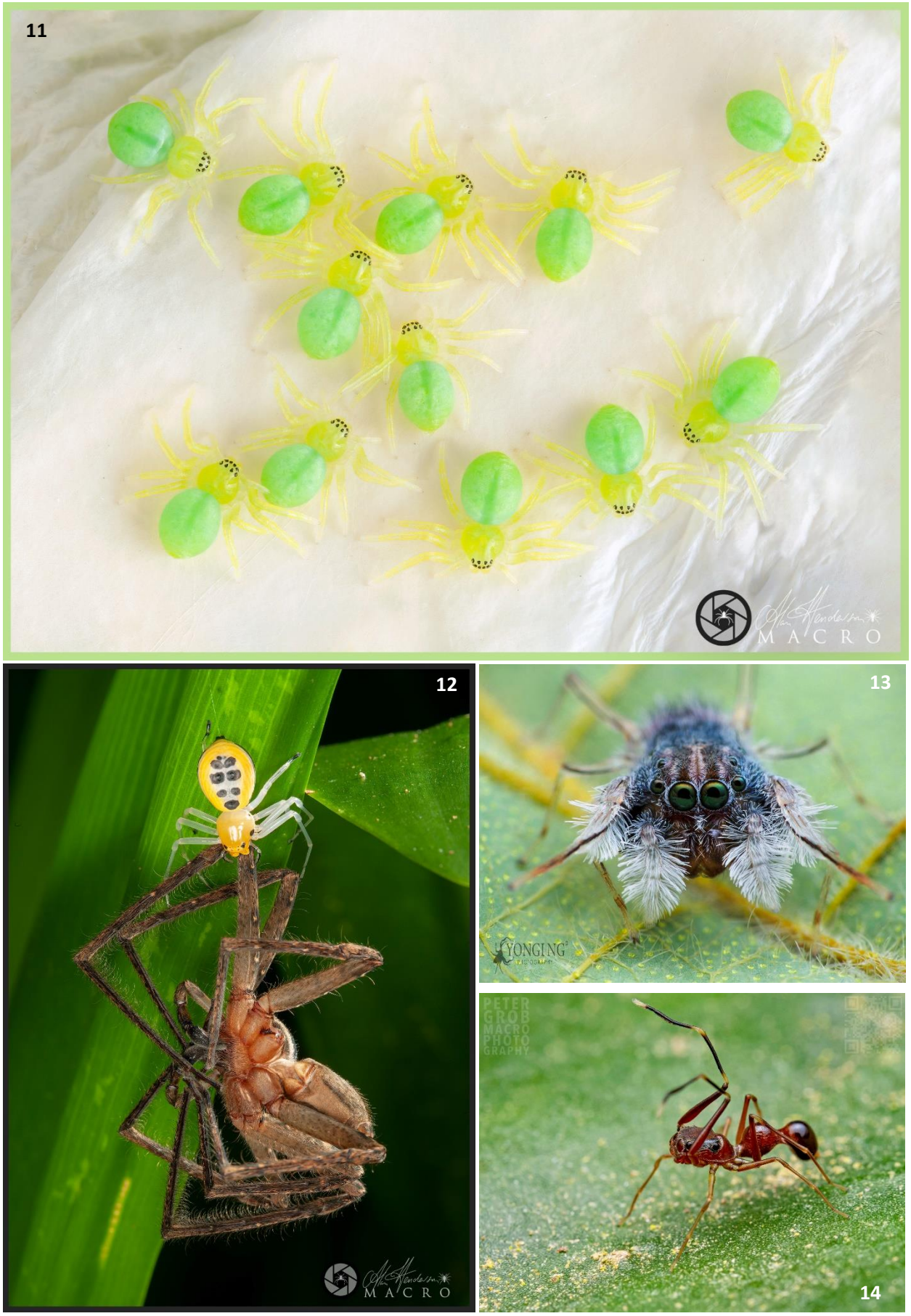

**1.** Witsand white lady (*May bruno*; Sparassidae), Ruan Booysen. **2.** Two-eyed orange lungless spider (*Diploglena* sp.; Caponiidae), Rudi Steenkamp. **3.** Crowned lynx spider (*Hamataliwa* sp.; Oxyopidae), Robert Wienand. **4.** Hammerhead crab spider (*Pherecydes* sp.; Thomisidae), Robert Wienand. **5.** Formidable intertidal spider (*Desis formidabilis*; Thomisidae), Basil McLellan. **6.** Tree sheet-web linyphiid (*Mecynidis* sp.; Linyphiidae), Cecile Roux. **7.** Running spider (new genus; Philodromidae), Cecile Roux. **8.** Huntsman spider (new genus; Sparassidae), Rudi Steenkamp. **9.** Comb-footed spider (*Propostira* or *Thyenula* sp.; Theridiidae), Kyle Thomas.

# The wonderful world of spiders

This new section showcases spiders from other parts of the world.


**1:** *Acusilas malaccensis*; Araneidae (Kedah, Malaysia). Photo: A.S. Anson. **2:** *Poecilopachys australasia*; Araneidae (Queensland, Australia). Photo: Lifeunseen – Nick Monaghan's Macro Photography. **3:** *Padillothorax* sp.; Salticidae (Southeast Asia). Photo: Chris Ang Photography. **4:** Dolophones sp.; Araneidae (Central Victoria, Australia). Photo: Maurice Allan Photography. **5:** *Ordgarius magnificus*; Araneidae (Woy Woy Bay, NSW Australia). Photo: Michael Doe.


**6-10:** *Arkys* spp.; Arkyidae. **6:** *A. alatus* (Patronga, NSW Australia). **7:** *A. cornutus* (Woy Woy Bay, NSW Australia). **8:** *A. curtulus* (Woy Woy Bay, NSW Australia). **9:** Juvenile *A. curtulus* (Woy Woy Bay, NSW Australia). **10:** *Arkys* sp. (Woy Woy Bay, NSW Australia). All photos by Michael Doe.



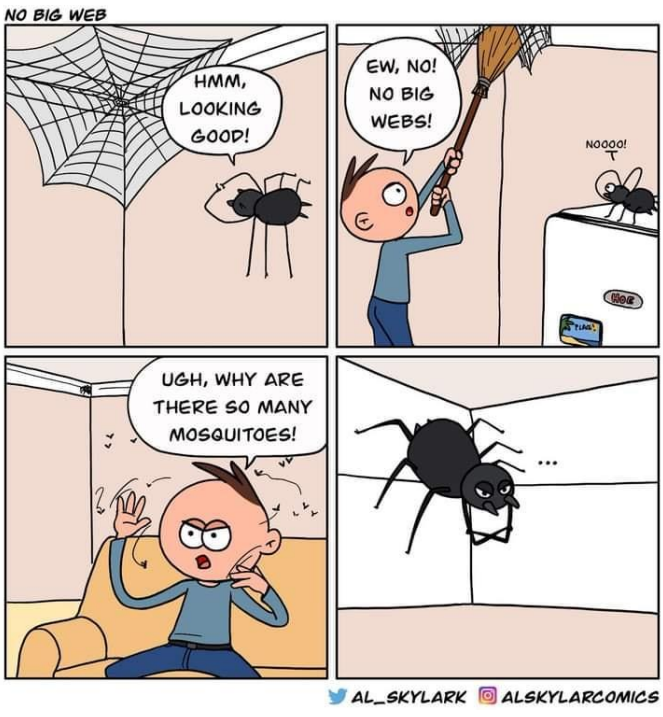

**11:** *Neosparassus salacius*; Sparassidae (Queensland, Australia). Photo: Minibeast Wildlife. **12:** *Poecilothomisus speciosus*; Thomisidae (Queensland, Australia). Photo: Minibeast Wildlife. **13:** *Neobrettus tibialis*; Salticidae (Pahang, Malaysia). Photo: Yongi Ng. **14:** *Agorius* sp.; Salticidae (Berjaya hills, Malaysia). Photo: Peter Grob.

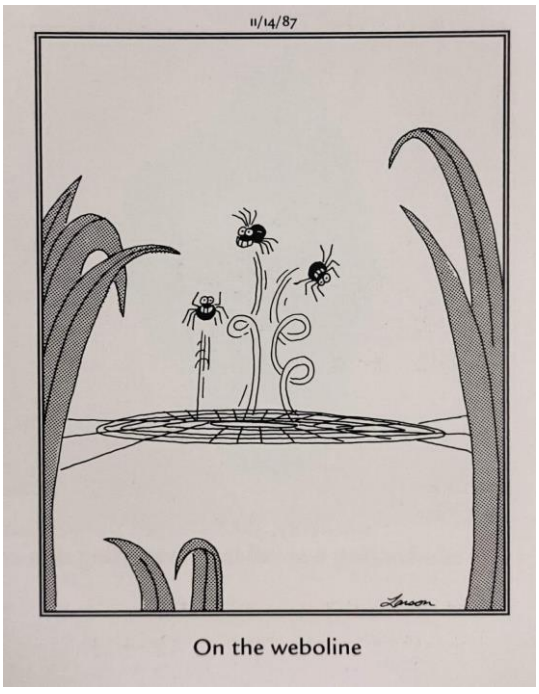

**15:** *Demadiana* sp.; Arkyidae (Western Australia). Photo: PWI Photography. **16:** *Irura bidenticulata*; Salticidae (Malaysia). Photo: Yong Ng. **17:** *Dolophones turrigera*; Araneidae (Woy Woy Bay, NSW Australia). Photo: Michael Doe. **18:** *Aetius* sp.; Corinnidae (Singapore, Indonesia). Photo: Md Jusri. **19:** *Psytira ephippigera*; Salticidae (Indonesia). Photo: PeekTure Photography.

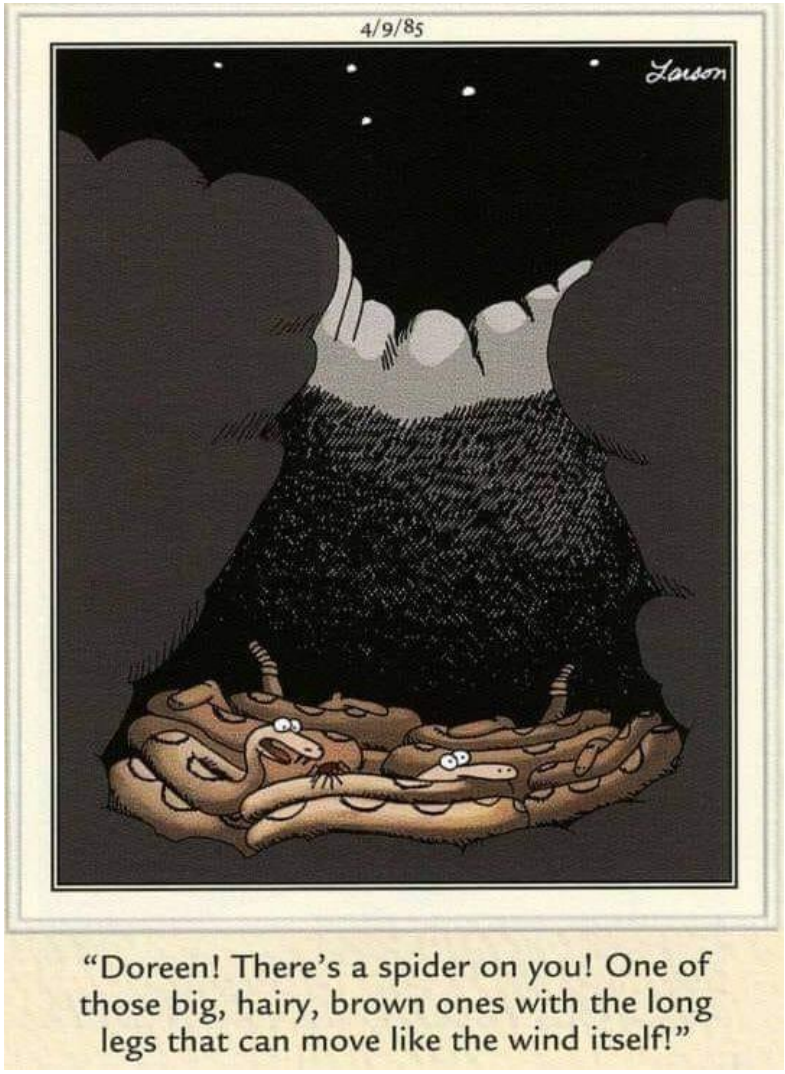
# On a lighter note









The above images were posted by Shewon Evin on the Facebook group "Ethereal Vibes". Photographer, costume designer, and model unknown. Some people say they're AI images.

# Upcoming events

**DIARY 2023** www.spiderclub.co.za

Please keep an eye on our Facebook group (https://web.facebook.com/groups/101951926508391/) or on our website (https://www.spiderclub.co.za/events/category/events/). Alternatively, register as a member of The Spider Club of Southern Africa (https://www.spiderclub.co.za/register/) to receive email notifications about any confirmed events.

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**JULY**
**?**

**SPIDER PRESENTATION**
**VetHealth Animal Clinic**
**Bloemfontein**

The chairperson of the Spider Club, Rudi Steenkamp, will give a presentation on spiders at VetHealth Animal Clinic in Bloemfontein some time in July (date not yet confirmed). Cost to attend is R20 per person. The talk will cover the basics of spider morphology, common spider families in South Africa, interesting facts, medically significant spiders, etc.

**JULY**
**16**

**SPIDER IDENTIFICATION COURSE**
**Agricultural Research Council – Roodeplaat campus**
**Pretoria**

We will have another identification course at the ARC in Pretoria, facilitated by Petro Marais. Keep an eye on our events on our Facebook page for updates.

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*We charge for attendance at field and certain other events:* ***R100 per adult and R20 per child 11 years and under, cash only, with the option of paying R200 PER NUCLEAR FAMILY for annual subscription. Members who paid the subscription fee do not have to pay at events.*** *Some venues will also require an entrance fee that must be paid by each individual. For field trips we will supply vials, magnifiers, plastic pill bottles, and some other basic collecting equipment, but please bring your own if you have as well as any reference books, a picnic lunch, adequate water, a hat, and good walking shoes.* ***Book on info@spiderclub.co.za or 067 833 2191 or on our Facebook page****. When booking, please give us your cell phone number and we will set up a WhatsApp group for the event.*

Join our community on Facebook to meet like-minded people and stay updated on upcoming events https://www.facebook.com/groups/101951926508391/

**Watch this space!**
*Keep your eyes on your e-mail and our Facebook page as other events may be organised, sometimes at quite short notice. We will attempt to give you fair warning.*