

# The pollinator information network newsletter



January 4, 2024. Vol. 7, Issue 1

## Welcome to the first issue of volume 7 of the *Pollinator Information Network Newsletter*

Happy New Year!

The *Pollinator Information Network Newsletter* is one of the projected outputs of the “Diversity of Pollinating Diptera of the Afrotropical Region” project, a project funded by the Belgian Development Cooperation through the framework agreement with the Royal Museum for Central Africa. The first phase of the project is now coming to an end but the project will continue for another five years. More on this in the second issue of the *Newsletter* of this year!

In this issue, you will find a report on a field trip to the Western Cape (South Africa) by Genevieve Theron and John Midgley of the KwaZulu-Natal Museum. We also introduce a new project between Belgian and South African institutions entitled “Pollination services as a tool to study interactions between agriculture and Man and the Biosphere Reserves in South Africa (AGRIMAB)”. The kick-off meeting of the project recently took place at the University of Stellenbosch in South Africa. Oageng Modise of the University of KwaZulu-Natal reports on the 12th International Symposium on Pollination which took place from 16-20 October at the Kirstenbosch Botanic Gardens, Cape Town, South Africa. Further, we put Happy Leonard in the spotlight! Happy is a research assistant at the Tanzania Agricultural Research Institute, Morogoro, Tanzania and has participated at our last training course. Finally, if you have missed the first announcement for the 12th International Symposium on Syrphidae in the previous issue, you may find it here once again. The symposium will be held in the Czech Republic in September 2024.

We invite everyone interested to submit relevant information for the *Newsletter*, including summaries of your own research and projects on pollination biology – or publications that you want to see highlighted, relevant literature, upcoming conferences and symposia, possibilities for cooperation and grant applications related to plant-pollinator networks, *etc.*, before the first of March 2024.

We wish all of you a productive and healthy 2024. Enjoy reading the first *Newsletter* of 2024!  
the DIPoDIP team

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You want more updates on the DIPoDIP project ?  
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<https://www.facebook.com/pollinatingdiptera/>



## No good specimen goes unpunished: a fieldtrip to the Western Cape, South Africa

Genevieve Theron & John Midgley

The Cape Floristic Region, in the Western Cape of South Africa, gets most of its rainfall in the winter months of the year. This makes December a hot and harsh time of the year for both the fauna and flora.

We kicked off this trip with a somewhat unplanned stop in Jonkershoek Nature Reserve, where the weather proved to be less hot and more cloudy than we had hoped for. We explored various trails and avenues around the reserve before opting to head for town where it was slightly warmer and we could enjoy the pancakes from the Christmas market in between collecting. The following day we finally headed for the Overberg and Marloth Nature Reserve. Both Marloth and the nearby Grootvadersbosch Nature Reserves have sections of Fynbos and Forest vegetation that one can explore, and this made for some interesting collecting. On one of our visits to Marloth we spent a couple of hours collecting both adult and larval Athericidae at a stream which will contribute towards a phylogeny of the family. We also briefly visited the northern, more arid, side of the mountain and walked a trail from the town of Barrydale. Here we collected some Vermileonidae larvae, Bombyliidae and several species of Asilidae.

The next leg of the trip veered back towards Cape Town as we sampled Fernkloof and Grootbos Nature Reserves. Our visit to Fernkloof was a real scorcher and the Fynbos quickly got too hot for the flies to be out. Thus after some good early collecting, we all had a well-deserved dip in the dam. The following day started rather cold and so we were escorted around the Grootbos reserve by Paula Strauss, their in-house entomologist, and Carly Vlotman, their collection curator. Once the weather cleared up slightly we managed to collect for an hour or two before it turned on us once again. All in all a productive day, with some good *Psilodera* specimens for a revision of the genus and brilliant new potential collaborations.



John collecting in Jonkershoek Nature Reserve (top). Kurt, John, Paula and Carly in a forest patch in Grootbos Nature Reserve (bottom). © G. Theron





# Pollination services as a tool to study interactions between agriculture and Man and the Biosphere Reserves in South Africa (AGRIMAB)

Marc De Meyer, Kurt Jordaens & Pia Addison

The AGRIMAB project is a new network project between the Royal Museum for Central Africa (RMCA) in Belgium and several partner institutions in South Africa, and is funded by the Belgian Science Policy (BELSPO) and the National Research Fund (NRF) of South Africa. The project team comprises the following people: Pia Addison (Stellenbosch University (SU), South Africa), Marc De Meyer (RMCA), Kurt Jordaens (RMCA), John Midgley (KwaZulu-Natal Museum, South Africa), Colin Schoeman (University of Venda, South Africa), and Vanessa Couldridge (University of the Western Cape).

The focus of the network project is on the interactions between between agriculture and Man and the Biosphere (MAB) Reserves in South Africa. Two MAB systems were selected: the Cape Winelands in the Western Cape and Vhembe in the Venda region.



A typical view on the Cape Winelands © K. Jordaens

The main objective of this network project is to explore the interaction between MABs and adjacent man-made environments regarding ecosystem services in pollination by non-bee pollinating insects.

The focus of this first meeting and field trip was the Cape Winelands MAB. Orchards with different crops (apples, pears, cherries, blueberries) were visited as well as the adjacent natural areas dominated by fynbos vegetation.

A number of other South African colleagues joined us for a vibrant meeting, viz. Ruan Veldtman (South African National Biodiversity Institute, South Africa), Zion Jodamus (SU), Allan Ellis (SU), and Genevieve Theron (KwaZulu-Natal Museum, South Africa), and their invaluable expertise will contribute a lot to the following steps of the project!



From left to right: John Midgley (KwaZulu-Natal Museum, SA), Vanessa Couldridge (University of the Western Cape, SA), Ruan Veldtman (South African National Biodiversity Institute, SA), Colin Schoeman (University of Venda, SA), Kurt Jordaens (Royal Museum for Central Africa - RMCA, BE), Pia Addison (Stellenbosch University - SU, SA), Zion Jodamus (SU) and Marc De Meyer (RMCA). © RMCA

Based on the discussions we specified four putative future research areas in fruit production in the MAB systems:

- 1)The diversity of non-bee pollinators
- 2)The role of non-bee pollinators in the system
- 3)The enhancement of pollinators/pollination in the system
- 4)The interactions between MABs and orchards with respect to pollinators



The Cape Winland MAB is characterized by a mosaic of diverse ecosystems and physiographic environments and a range of land uses and human settlement patterns associated with the renowned Cape Winelands viticultural landscape. © K. Jordaens





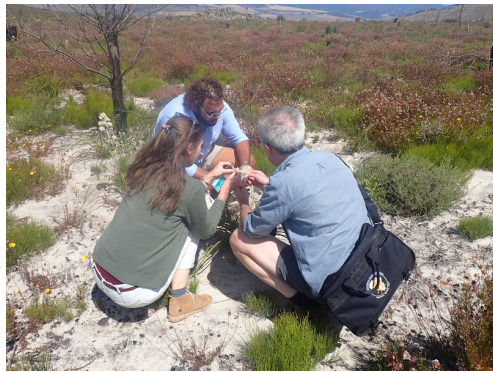
In April of this year, we will train a number of honors students from the Stellenbosch University and University of the Western Cape. These students will describe the pollinator communities of a number of fruits in the Cape Winelands, including pear, cherry, and blueberry.

We also plan two new network meetings. From 9–13 September 2024 the South African partners will visit the RMCA. The focus of that meeting will be to strengthen the network, discuss further ideas and to follow-up honors-students.

Then, the Belgian and SA partners will meet at the University of Venda from 25–29 November. This meeting will comprise field visits to Mphaphuli and Nthakeni, areas which have *Macadamia* and citrus orchards, and production sites of Baobab. We will also organize a mini-symposium for students at the university covering aspects of taxonomy and general entomology, with a focus on Diptera. Afterwards, we will conduct field work at Nthakeni, Kremetart, and Bergplaas to collect Diptera for our ongoing taxonomic and phylogenetic work.



Honors students will study the pollinator communities of blueberry farms such as shown here. © K. Jordaens



Part of the AGRIMAB team exploring several putative future study sites. © K. Jordaens (left, middle), M. De Meyer (right)



The Cape Winelands is not only a famous production area for excellent wines, but has several cherry (left) and blueberry (right) farms as well. Both require insect pollinators for fruit setting. © K. Jordaens

Further reading:

<https://www.unesco.org/en/mab/cape-winelands>

<https://www.unesco.org/en/mab/vhembe>





# The 12th International Symposium on Pollination, 16-20 October 2023, Kirstenbosch Botanic Garden, Cape Town, South Africa

Oageng Modise

Conferences present opportunity for researchers to share their hard work and foster future collaborative work. They are also a great opportunity for young, emerging scientists to interact with future colleagues and share their work with a wider audience, where they can obtain wider feedback and assistance, more especially during PhD as they are now becoming specialists in their fields. I was excited (and nervous at the same time) when the abstract call for the Twelfth International Symposium on Pollination (ISPXII) opened to take place in 2022. This was mainly because this would become my first symposium attendance post COVID-19 pandemic and it would be in-person and not online. However, due to unforeseen circumstances, the symposium had to be postponed.



Cape Town (left) and the 'Boomslang' Canopy Trail in Kirstenbosch National Botanical Garden (right).

Hope still remained that the symposium will take place and indeed, it was announced that the symposium would commence in 2023. Myself and several colleagues from the Pollination Ecology lab at the University of KwaZulu-Natal had the opportunity to attend the Twelfth International Symposium on Pollination (ISPXII) at Kirstenbosch National Botanical Garden in Cape Town, from the 16th – 20th October 2023, with a scholarship from the symposium organisers. During this time, I had the opportunity to orally present my work on the “The role of short-tongued flies as pollinators in southern African high-elevation systems: A case study of *Crassula peploides* (Crassulaceae).” This work forms part of a bigger project, which is my PhD research focusing on the role of short-tongued flies as important pollinators of a guild of plant species occurring in the high-elevation Drakensberg Mountain region. My project is fully funded by DIPoDIP project, which focuses on the diversity and taxonomy and of selected true fly families in Biodiversity Hotspots of South Africa.

Some of the key results presented at the ISPXII symposium were that *C. peploides* is exclusively pollinated by true flies (Diptera) of the families Sarcophagidae, Tachinidae and Muscidae. Morphological identifications of these flies were confirmed using DNA barcoding, which was done at the Royal Museum for Central Africa (Belgium) by myself and Kurt Jordaens. We further quantified floral traits that are most likely involved in attracting these flies to the flowers. Using GC-MS technique, we confirmed that the scent bouquet of *C. peploides* flowers is dominated by aliphatic acids, which are common in most flowers that are visited and pollinated by flies. In addition, we showed that there are colour contrasts between different floral parts as seen by flies, and this, in combination with other traits, potentially mediate attraction of flies to *C. peploides*. Our results provided the first evidence of functional specialization of foul-smelling flowers for pollination by short-tongued flies in the family Crassulaceae.

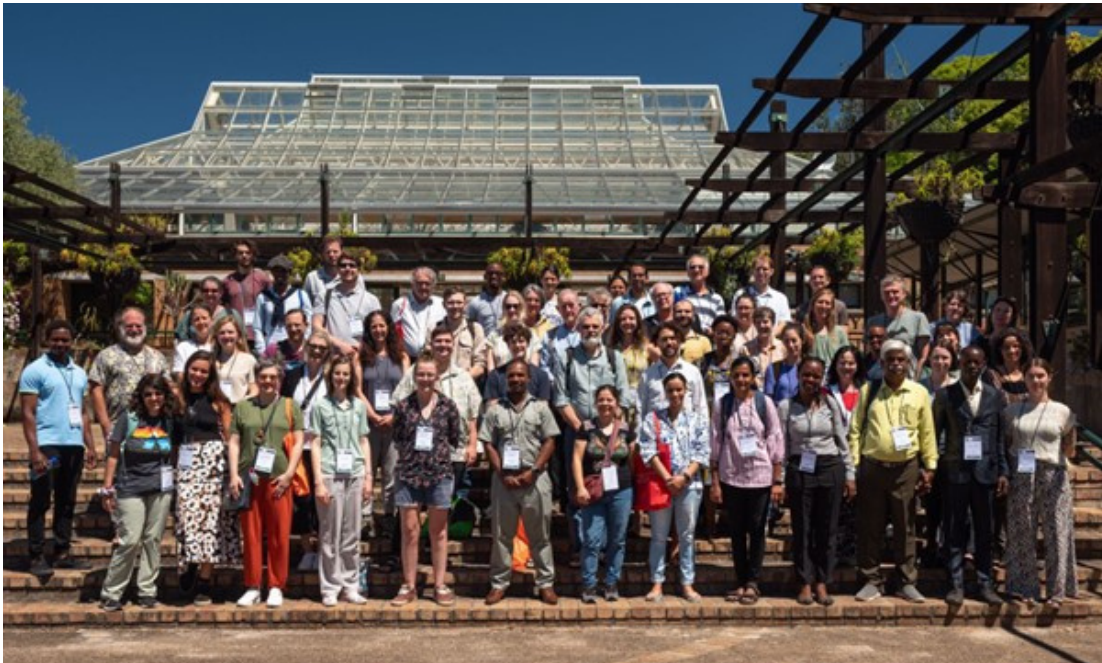






UKZN Pollination Ecology delegates at the 2023 ISPXII symposium (with Prof. Harder (top row, right)).

Overall, the symposium was a success and I met a lot of established scientists in the pollination ecology field, and shared our fascinating and interesting work, which most people are not familiar with. In addition to this, few of my colleagues, including two of my supervisors, received awards for best session presentations. On the fun side, I had the opportunity to explore Kirstenbosch National Botanical Garden for the first time, and explore the city of Cape Town.



Group picture of the 2023 ISPXII symposium delegates in Cape Town, South Africa.

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## **Spotlight: Research Assistant Happy Leford Leonard - Tanzania Agricultural Research Institute, Morogoro**

Happy Leford Leonard

I am Happy Leford Leonard, research assistant at the Section of Plant Protection of the Department of Research and Innovation of the Tanzania Agricultural Research Institute (TARI). I am responsible for collecting, identifying, and preserving insects from experimental plots, as well as for the analysis and interpretation of research results. Moreover, I disseminate agricultural technologies to farmers.

My journey as an entomologist began in 2020 during my third year at the Sokoine University of Agriculture (SUA) in Morogoro, Tanzania. In that year, I undertook an applied entomology course on the effects of insecticides on the abundance and diversity of pollinators and other beneficial insects in agriculture.







After graduating, I volunteered for the AGROVEG and ISeBAF projects (see: <https://www.pindip.org/> for more information on both projects) at SUA where I learned more on the life-history, trapping, sorting, identifying and preservation of insects, with a focus on pollinators and other beneficial species. At that time, I became more interested in hoverflies or flower flies (Syrphidae).

Happy identifying hoverflies in the lab at TARI (left, middle) and collecting hoverflies in the field © TARI.

In October 2023, I was fortunate to receive a scholarship to attend the fifth training course on the Taxonomy and Systematics of African pollinating flies organized by the Institute of Pest Management of SUA, the Royal Museum for Central Africa, Tervuren, Belgium, and the KwaZulu-Natal Museum, Pietermaritzburg, South Africa (see elsewhere in this issue). During the training course, I became more familiar with the taxonomy of Syrphidae, Rhiniinae, Nemestrinidae and Calliphoridae.

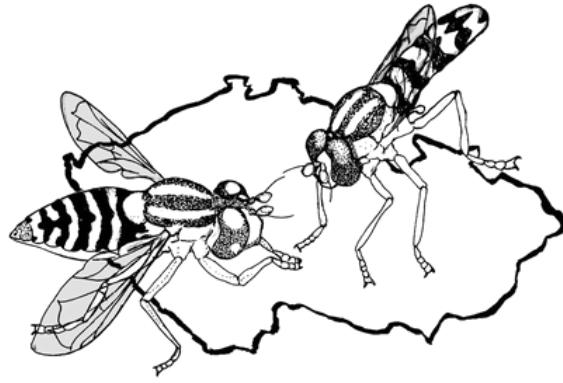
Currently, apart from other institutional responsibilities at TARI, I am involved in the collection of hoverflies of the subfamily Syrphinae, since the larvae of several of these species are predators of aphids. I study the oviposition preference of several syrphine species in response to various aphid species. I also study the diversity and abundance of these species in the field and my data hopefully will contribute to a better control of aphids in rice and sugar cane field. I also teach my other colleagues who are interested in Syrphidae.

In the future, I want to expand my career as an entomologist. I want to obtain a master's degree and PhD in the field of entomology. I am eager to conduct more research on sustainable pest control in agro-ecosystems, where pest species are controlled while conditions for beneficial insects are improved. It is to be hoped that my efforts will contribute to improve food security in the Afrotropical Region.



Happy training colleagues in the collection of Diptera in the field (left) and Happy working in the insect collection at TARI (middle, right) © TARI.





**12<sup>th</sup> International Symposium on Syrphidae**  
Průhonice, Czech Republic  
2–7 September 2024

Dear Fellow Syrphidologists,

It is a great pleasure to invite you to 12th International Symposium on Syrphidae (ISS12). The Symposium will take place in Průhonice near Prague (Czech Republic), in Průhonice Castle, with accommodation in Hotel Floret, located in the immediate vicinity of the castle.

The symposium will start on 2nd September 2024 (Monday) in the evening and will end on 7th September 2024 (Saturday) in the morning. The preliminary schedule is following:

Arrival:	2nd September 2024
Symposium:	3-5 September 2024
Field excursion:	6 September 2024
Departure:	7 September 2024

If you are interested in attending the symposium, please, let us know via Registration of interest form. Please, fill in the form during the next month (until 20th December 2023) to receive further information about the ISS12. After filling in the form, we will inform you by e-mail about news regarding the symposium, including registration instructions, fees, and abstract submission.

For more information, you can also visit our website: <https://web.natur.cuni.cz/zoologie/syrphidae/>.

If you have any questions, feel free to contact us on **Syrphidae12@gmail.com**

We are looking forward to meeting you all in the Czech Republic!

On behalf of the local Organising Committee,  
Jiří Hadrava, Klára Daňková, Antonín Hlaváček, Jakub Štenc, Helena Pijálková, Tadeáš Ryšan, Michael Mikát,  
Eva Matoušková, Tereza Hadravová

12th Symposium on Syrphidae  
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Viničná 7, 128 43 Praha 2, Czech Republic  
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<https://web.natur.cuni.cz/zoologie/syrphidae/>





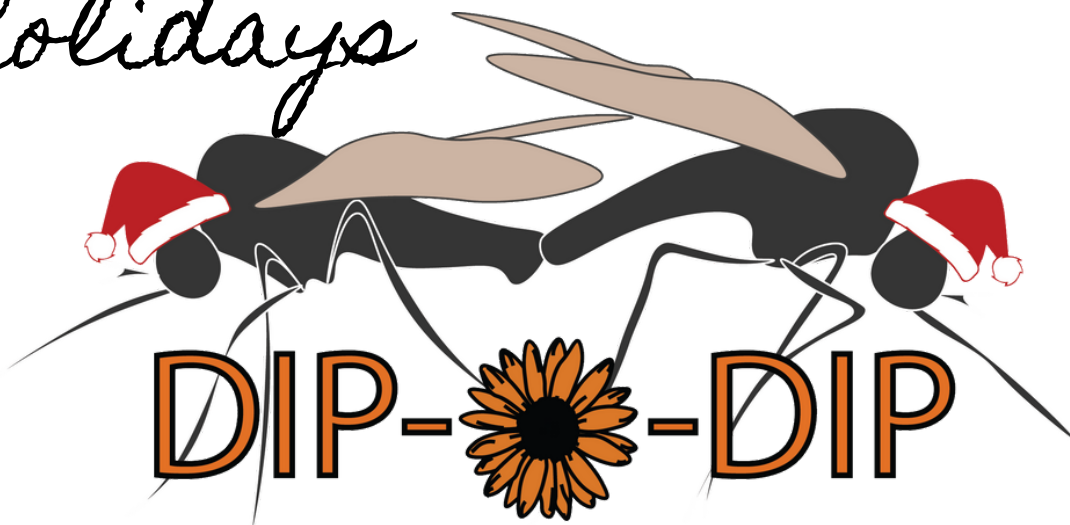


## About the DIPoDIP and DIPoDIP2 projects

The “Diversity of pollinating Diptera in South African biodiversity hotspots” project (DIPoDIP) is a five year project (2019-2023) financed by the Belgian Directorate-general Development Cooperation and Humanitarian Aid through a framework agreement with KMMA. It is a collaboration between the University of KwaZulu-Natal (UKZN), the KwaZulu-Natal Museum (KZNM), Stellenbosch University (SU), the South African National Biodiversity Institute (SANBI), and the Royal Museum for Central Africa (click on the logos for more information). It will be continued as the “Diversity of pollinating Diptera in Afrotropical biodiversity hotspots” (DIPoDIP2) project in the following five years (2024-2028) and will have additional partners from Burundi and Rwanda. Read more on the project in the forthcoming PINDIP *Newsletters* and on our Facebook page!  
<https://www.facebook.com/pollinatingdiptera/>



HAPPY  
*Holidays*



Diversity of pollinating Diptera in the Afrotropical Region

