

# The Pollinator Information Network Newsletter

Editorial

March 7, 2020. Vol. 4, Issue 1

## Welcome to the first issue of volume 4 of the Pollinator Information Network Newsletter!

The *Pollinator Information Network Newsletter* is one of the projected outputs of an ongoing project of the JRS Biodiversity Foundation, *i.e.* “The Pollinator Information Network for Two-Winged Insects” or simply PINDIP. The PINDIP project has its own website: <https://www.pindip.org/>.

We introduce a new project, which is a follow-on project of PINDIP, between Belgium and South Africa (pages 2-3) and report on the second training course on the taxonomy and systematics of pollinating Diptera which took place in Tanzania from 18-29 November 2020 (pages 4-6). We already announce a new training in general entomology and collection management which will take place in South Africa in 2021, and that will focus on young and emerging South African entomologists (page 7).

Further, you will find a short report on field work in the Drakensberg area (South Africa) between the Royal Museum for Central Africa (RMCA), the KwaZulu-Natal Museum, the National Museum Bloemfontein and the Albany Museum to collect pollinating Diptera (pages 8-9).

In this issue, we put three persons and their work in the spotlight: Lore Geeraert (page 10-11), Dorothy Madamba (page 12) and Sarah Majugu (pages 13-14).

Read more on the upcoming 12<sup>th</sup> International Symposium on Pollination (ISPIXII) on pages 15-16 and on the 11<sup>th</sup> International Symposium on Syrphidae (ISS11) on page 17.

As usual, the issue ends with a list of new, although incomplete, published research related to pollination biology in its broadest sense (pages 18-21).

We invite everyone concerned to submit relevant information for the *Newsletter*, including summaries of their own research and projects on pollination biology – or publications that they want to see highlighted, relevant literature, upcoming conferences and symposia, possibilities for cooperation and grant applications related to plant-pollinator networks, *etc.*, before the 15<sup>th</sup> of July.

Enjoy reading!

Kurt Jordaens  
on behalf of the PINDIP team

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## **New project: Follow-on project The Pollinator Information Network for two-winged Insects (Diptera) (PINDIP)**

The Royal Museum for Central Africa (RMCA), Tervuren, Belgium and the KwaZulu-Natal Museum (KZNM), Pietermaritzburg, South Africa have received a follow-on budget from the JRS Biodiversity Foundation.

### **Background**

This is a follow-on project to the 2017-2019 Pollinator Information Network for Sub-Saharan Two-Winged Insects (PINDIP), a JRS-funded project headed by the Royal Museum for Central Africa (RMCA). PINDIP aims to increase knowledge and data accessibility for sub-Saharan Diptera, a group of insect pollinators that includes true flies and mosquitos. This project has already found success in developing a research network on pollinating Diptera in the Afrotropics, digitizing and sharing data records for six Diptera families, publishing research results and sharing identification tools, and training students and researchers. It has also led to three new “spin-off” initiatives in entomological research in the Afrotropics. These new initiatives support the PINDIP network, training, and research activities and include:

- 1) The Diptera museum collections as a source for taxonomic research and teaching activities (DIPTATEACH), a project to highlight the advantages of entomological museum collections in training emerging entomologists from the Afrotropics, and to stimulate activities between the RMCA and the KwaZulu-Natal Museum (KZNM).
- 2) The Diversity of pollinating Diptera in South African biodiversity hotspots (DIPoDIP), a project that highlights the importance of other Diptera families outside of the six families originally studied in PINDIP. This is a collaboration between the RMCA and four South African partners: KZNM, Stellenbosch University, the University of KwaZulu-Natal, and the South African National Biodiversity Institute (SANBI).
- 3) The Agroecology methodology in vegetable crops (AGROVEG), a project that aims to improve farmers’ health and sustainable food production through the development of the agroecological methodology that mitigates the impact of fruit flies, while emphasizing the beneficial role of pollinators, on vegetable crops. This collaborative initiative includes the RMCA, the Sokoine University of Agriculture in Tanzania, and the Eduardo Mondlane University in Mozambique. This additional funding will support these three new initiatives and extend the impact of PINDIP work. More information and project achievements are detailed on the PINDIP website.

### **Key Objectives and Activities**

The key objective of this additional funding is to increase sharing and access of the biodiversity informatics data and tools developed in the PINDIP project to support three new initiatives: DIPTATEACH, DIPoDIP, and AGROVEG. Key activities include enhancing the PINDIP website with identification keys, photos, and outcomes from DIPTATEACH, DIPoDIP, and AGROVEG; training that features bioinformatics tools in South Africa and Tanzania; and the creation of species data sheets for common Afrotropical hoverflies to increase awareness of their role as pollinators and as key organisms in biodiversity research.

## **Planned Outputs**

1. At least 300 existing high-resolution photos of Afrotropical Diptera uploaded to the PINDIP website.
2. 200 new high-resolution photos of Afrotropical Diptera, other than hoverflies, uploaded to the PINDIP website.
3. A multi-entry identification key to the genera of Afrotropical hoverflies on the PINDIP website.
4. Outcomes of DIPTATEACH, DIPoDIP, and AGROVEG on the website.
5. About 30 emerging entomologists from the Afrotropics trained in general entomology, collection management, and bioinformatics of Afrotropical Diptera.
6. A free online repository of 15-20 species data sheets with relevant taxonomic and ecological data of the most common South African hoverflies on the SANBI website.

## **Planned Outcomes**

Enhancements to the PINDIP website, including information about the three new initiatives, are expected to increase activity on the site and provide greater accessibility to biodiversity data and tools. The extension of the bioinformatics training will provide quality opportunities for emerging entomologists, as well as lead to an increase in the number of data sets published on the Global Biodiversity Information Facility (GBIF), further increasing access to Afrotropical Diptera data. The publication of species data sheets for Afrotropical hoverflies is the first step in developing species pages to include predicted distributions, photos, and data that covers biology, ecology, and behavior. Ultimately, additional funding from JRS will secure and expand PINDIP success in addressing the role of Diptera in plant-pollinator networks in the Afrotropical region.

Budget: \$ 40,000

Period: January – September 2020

Partners and contact:

Dr. Kurt Jordaens, Royal Museum for Central Africa, Tervuren, Belgium;  
kurt.jordaens[at]africamuseum.be

Dr. John Midgley, KwaZulu-Natal Museum (KZNM), Pietermaritzburg, South Africa;  
jmidgley[at]nmsa.org.za

## **Sponsors:**



# Training course in taxonomy and systematics of African pollinating flies

18 – 29 November 2019, Tanzania

The second training course in taxonomy and systematics of African pollinating flies took place at the Sokoine University of Agriculture (Tanzania) from 18-29 November 2019.



Standing (L to R): Christopher Sabuni (local organizer), Sarah Majugu, Terence Bellingan, Sheila Koech, Filemon Mbawambo, Monica Michael (administration), Ashley Kirk-Spriggs (instructor), Pierre Mboma, John Midgley (instructor), Rose Sagwe, Jackson Nashon (administration), Amos Kabota, Benedict Kanyama, Mecklina Mbundi, Kurt Jordaens (instructor), Ruth Achieng, Joseph Gitau.  
Kneeling (L to R): Alexis Mpawenimana, Dorothy Madamba, Emerensiana Benson (administration)

The objective of this group training was to ensure, for the sake of the African scientists or the persons confronted with the problem, a basic training on the identification and ecology of African Diptera, with special emphasis on those families (*e.g.*, Bombyliidae, Calliphoridae, Nemestrinidae, Rhiniidae, Syrphidae, and pangonine Tabanidae) that have a significant role in plant-pollinator networks.

Participants were asked to bring their own material which then was identified up to family or genus level

Participants: In total, we received 47 applications from 11 countries (Benin: 5; Burundi: 5; Cameroon: 3; Ethiopia: 4; Kenya: 9; Mali: 1; Rwanda: 1; South Africa: 3; Tanzania: 12; Uganda: 1; Zimbabwe: 3).

The following thirteen applicants were selected to take part at the training:

- Ruth ACHIENG: National Museum of Kenya, Kenya; [ruachieng@yahoo.com](mailto:ruachieng@yahoo.com).
- Terence BELLINGAN: Albany Museum, South Africa; [t.bellingan@am.org.za](mailto:t.bellingan@am.org.za).
- SijaAmos KABOTA: Kilombero Agricultural Institute, Tanzania; [sijakabota@gmail.com](mailto:sijakabota@gmail.com).
- Benedict KANYAMA: College of African Wildlife Management, Tanzania; [bennykany@gmail.com](mailto:bennykany@gmail.com).
- Sheila KOECH: International Centre of Insect Physiology and Ecology (ICIPE), Kenya; [sheila.koech1@gmail.com](mailto:sheila.koech1@gmail.com).



- Dorothy MADAMBA: National Museums and Monuments of Zimbabwe, Zimbabwe; [madambadc\[at\]gmail.com](mailto:madambadc[at]gmail.com).
- Sarah MAJUGU: Makerere University, Uganda; [sarahmajugu@yahoo.com](mailto:sarahmajugu@yahoo.com).
- Pierre MBOMA: International Institute of Tropical Agriculture (IITA), Benin; [mbomapierre\[at\]yahoo.fr](mailto:mbomapierre[at]yahoo.fr).
- Michael MBUNDI: University of Dar es Salaam, Tanzania; [mbundim\[at\]nm-aist.ac.tz](mailto:mbundim[at]nm-aist.ac.tz).
- Filemon MBWAMBO: The University of Dodoma, Tanzania; [elisante10\[at\]gmail.com](mailto:elisante10[at]gmail.com).
- Alexis MPAWENIMANA : Institut des Sciences Agronomiques du Burundi (ISABU), Burundi; [almpawe2\[at\]gmail.com](mailto:almpawe2[at]gmail.com).
- Joseph NDUNGU: International Centre of Insect Physiology and Ecology (ICIPE), Kenya; [jndungu\[at\]icipe.org](mailto:jndungu[at]icipe.org).
- Rose SAGWE (International Centre of Insect Physiology and Ecology (ICIPE), Kenya, [rsagwe\[at\]icipe.org](mailto:rsagwe[at]icipe.org).

The training consisted of ex-cathedra courses on morphology, classification, identification, identification methods, collection methods, and conservation methods of Diptera, with a focus on the target families listed above. Practical exercises will be used to comment on, and test, the topics presented in the courses.

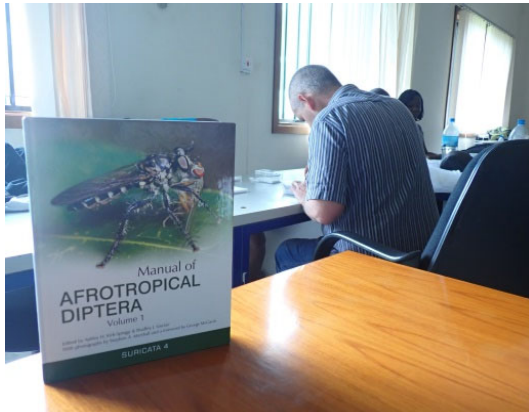


Practical session in the field: participants were trained in different trapping techniques such as hand netting (left), the use of yellow pan traps (middle) and the deployment of Malaise traps (right)

### Organisation and more information:

The training course was organized by the Royal Museum for Central Africa (Kurt Jordaens – Marc De Meyer, RMCA, Belgium), the Sokoine University of Agriculture (Christopher Sabuni, SOI, Tanzania), the KwaZulu-Natal Museum (John Midgley, KZNM, South Africa) and the Natural History Museum, London (Ashley Kirk-Spriggs, NHM, UK). A full program and training materials can be found on the PINDIP-website: [www.pindip.org](http://www.pindip.org). More information on trainings organized by the RMCA can be found at: <http://www.africamuseum.be/research/collaborations/training>





Previous page: Practical sessions in the lab: participants received training in insect in conservation methods (left: direct pinning, middle: micro-pinning and staging) and in the morphology, classification and identification of Diptera (right).

Left: The first two volumes of the *Manual of Afrotropical Diptera* are the main teaching tool during the training. In the background is Ashley Kirk-Spriggs of the NHM London, one of the editors of the *Manual of Afrotropical Diptera*, preparing for one of the practical sessions.

Below: a welcome lunch at the Sokoine University of Agriculture.



#### **contact:**

Kurt Jordaens at [kurt.jordaens\[at\]africamuseum.be](mailto:kurt.jordaens[at]africamuseum.be)

#### **Sponsors:**



**Belgium**  
partner in development

**JRS** Biodiversity  
Foundation

# Training course in entomology and collection management for South African entomologists 2021, South Africa

## Organisation:

The training will be organized by the Royal Museum for Central Africa (RMCA, Belgium) and the KwaZulu-Natal Museum (KZNM, South Africa). The training will take place in South Africa, in the first half of 2021. Ten young and emerging South African researchers will be trained in taxonomy, entomology and collection management.

## Background:

The aim of this training is to stimulate entomological (taxonomic and ecological) research in South Africa, specifically in students and young researchers and to increase sustainability of taxonomic expertise in Dipterology in South Africa.

More information will be provided in forthcoming issues of the *PINDIP Newsletter* and will be posted on the PINDIP website.

More information: If you have a South African nationality and want to be included in the mailing list, send an email to [kurt.jordaens\[at\]africamuseum.be](mailto:kurt.jordaens[at]africamuseum.be) and you will receive regular updates.



## Sponsors:



National  
Research  
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## Fieldwork: Collecting trip in the southern Drakensberg (South Africa)



Entomology has a long history in South Africa, and while old specimens give insight into many historical patterns, they are not particularly useful for DNA analysis. From 7 to 24 October 2019, a field trip was conducted to several sites in to look for fresh material of rare or poorly sampled Diptera species. The aim of the trip was to re-visit several localities from previous expeditions, such as the Lund University expedition in the 1950s and Brian Stuckenberg's expedition in the 1960s. Fresh specimens collected from the historical type localities could then be used for DNA analysis.



High altitude sites in the Eastern Cape and KwaZulu-Natal provinces were the focus of the trip. The collection team, comprising PINDIP partners Kurt Jordaens (Royal Museum for Central Africa, Belgium) and John Midgley (KwaZulu-Natal Museum, South Africa), as well as Terence Bellingan (Albany Museum, South Africa) and Burgert Muller (National Museum, South Africa), visited several sites in the southern Drakensberg. While some areas in the Drakensberg have been well collected, more inaccessible sites have received less attention. The areas around Lundean's Nek, Naude's Nek, Ongeluksnek Nature Reserve, Cobham Nature Reserve and Lotheni Nature Reserve were visited. These out of the way sites yielded many of the same species as the better surveyed sites, but also some rarer species that were unexpected.





Unfortunately, the expedition was a bit early in the season which, along with the late arrival of the summer rains, resulted in fewer overall specimens than expected. However, the collections of rarer species made the trip worthwhile. Plans are already underway for a repeat expedition in early 2021 to collect additional topotypes for DNA analysis.

The expedition was funded by JRS Biodiversity Foundation (PINDIP project) and the Belgian Development Cooperation (DIPoDIP project).



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**PhD: Intensification of Arabica Coffee  
Agroforestry Systems in Southwestern Ethiopia:  
Effects on coffee pollinator communities and  
coffee quality  
(Lore Geeraert – KULeuven, Belgium)**



Wild populations of *C. arabica* are endemic to natural moist Afromontane forests in southwestern (SW) Ethiopia. These forests provide biodiversity and ecosystem services that may benefit the regional and global coffee production. Unfortunately, only small proportions of natural Ethiopian Afromontane forests remain, mainly due to land-use change for agricultural activities, including coffee production. In order to reconcile the conservation of the remaining natural Afromontane forests in SW Ethiopia with the ongoing pressures posed by local human population growth and increasing demand for Arabica coffee, I studied how intensification of coffee agroforests in SW Ethiopia are affecting the biodiversity within, and ecosystem services provided by, these coffee production systems.

A study of forest habitat structure between 2009 and 2017 showed reductions in woody vegetation diversity (-14%) and density (-31%), and an increase in the overall height (+11%) of the woody vegetation. These results suggest a rapid simplification of habitat structure and loss of woody vegetation diversity, in these already relatively intensively managed coffee agroforests. I expect that less intensified systems may be prone to even faster degradation rates.

I found negative effects of increasing management on species richness and abundance of coffee flower visiting insects. As smallholder coffee farmers continue to reduce the woody vegetation density and diversity of their production systems, further reductions in habitat quality and associated declines in coffee pollinator communities are expected.

Initial, but not final, coffee fruit set benefitted from insect pollination within the studied coffee agroforests. We found a positive relationship between non-*Apis* bee diversity within intensively managed coffee production systems and three-year (2016 – 2018) coffee yield stability within the same systems. These results point at the importance of pollination services for long-term yield stability, along with the potential of the surrounding extensively managed landscape matrix to increase pollinator diversity within intensified coffee agroforests.



Finally, I used a space-for-time substitution to assess the effect of natural forest conversion to coffee agroforests on organoleptic quality of the coffee that is produced. I compared coffee bean quality from natural Afromontane forests with the coffee bean quality from intensively managed coffee agroforests of varying size. I standardized the post-harvest processing of the collected

beans, and controlled for variation in soil, elevation, and *C. arabica* genotype during statistical analysis. There was a significant decrease in coffee organoleptic quality from natural forests over larger coffee agroforests, to smaller coffee agroforests. Only coffee beans collected from natural Afromontane forests qualified as specialty beans, according to the Specialty Coffee Association of America's standards. I presume that decreased shade levels and associated changes in micro-climate and biotic interactions are important causes of deteriorating coffee organoleptic quality.

The results of this PhD research add to a growing body of research highlighting the loss of biodiversity and ecosystem services that come with the conversion of natural forests to, and further intensification of, coffee agroforests in SW Ethiopia.

**Contact:** Lore Geeraert (KU Leuven – [lore.geeraert@kuleuven.be](mailto:lore.geeraert@kuleuven.be))







## Becoming a Dipterist:

### Dorothy Madamba Curator of Entomology at the Natural History Museum Bulawayo (Zimbabwe)



My name is Dorothy C Madamba, I am a 34 year old Zimbabwean female. I have always found my interests very spread out, diversity and multi-disciplinary but all my passions and capabilities seem to gravitate towards applying the capabilities be it artistic, scientific, social, towards inspiring younger generations towards bigger and better goals and dreams than mine. In terms of research interests, I have worked with Moths taxonomy, butterflies, edible insects of Zimbabwe and several general insects biodiversity related projects. I am currently employed by the National Museums and Monuments of Zimbabwe, stationed at the Natural History Museum Bulawayo (NHMB) as a Curator and Head of the Entomology Department. I have always been fascinated with Taxonomy and Systematics among all my other interests. My major areas of work have been running a museum conservation club for 7 to 14 year old children, Environmental youth symposiums for all young scholars and professionals,

including the one time we held a taxonomy course for Bulawayo citizens. Causes related to children have also been a passion of mine and all these passions culminated in the establishment of Reach A Young Soul (RAYS) Trust founded in 2011.

In 2014, during the summer, I met a team of professors visiting from Sam Houston State University in Texas, among them was Dr. S. Bucheli, a forensic Entomologist. I was fascinated by the story that flies tell about decomposition and this ignited a passion to be part of those that tell that story in our country. I then embarked on a MSc Biology at Sam Houston State University and had some experience observing flies and their action on human cadavers. During this Masters project, I drafted a project proposal for the revision of the fly genus *Rhinia*, which I had on hold until now due to lack of knowledge on the relevant characters for the group as well as not having access to identification keys.

PINDIP training course in Taxonomy and Systematics of African pollinating flies came in and filled a gap that will take me a step further in becoming a dipterist. I have accumulated a data set collecting invertebrates in 5 habitats for 52 weeks. I carried 193 Morphospecies from this survey and I was assisted to identify all of them to family level and some even to genus. The plan that is currently in progress is to write up the story of pollinating flies in the study area, Matopos World Heritage Site, for the 5 habitat types sampled over the 52 weeks. The facilitators of the training course helped me focus my taxonomy and systematics project concept towards a taxon that has more questions to answer and more research gaps to fill in terms of Phylogeny, Taxonomy and Systematics.

Post-training, I have my student and volunteer in the laboratory until January, working on identifying more flies to family level from this project and capturing the data for analysis. I am looking through the identification keys with much more ease and I am more confident with the accuracy of the identifications than before. Analyses, writing and publishing will take a while longer but for now, I am passing on the skills and practicing the skills of fly identification while building up this data set. I am grateful to the funders, organizers and facilitators for such an awesome initiative. This has been a boost in my skills set, while going towards my dream of attaining a doctorate; I certainly have more options for a project with these added basic skills in fly identification. **Contact:** [madambadc\[at\]gmail.com](mailto:madambadc[at]gmail.com)

## SPOTLIGHT



### **PhD: Determinant biological indicators of pollinator interactions influencing colony strength attributes of *Apis mellifera* featuring Bombyliidae and Syrphidae families in Northern Uganda.** **(Sarah Majugu – Makerere University, Uganda)**



Sarah Majugu recently started a PhD at Makerere University entitled “Determinant biological indicators of pollinator interactions influencing colony strength attributes in *Apis mellifera* featuring *Bombyliidae* and the *Syrphidae* families in Northern Uganda”.

The honey bee (*Apis mellifera*) is the primary managed pollinator in Ugandan agricultural systems, and its importance for food production is widely recognized. However, the role of *A. mellifera* as an introduced species in natural areas is potentially more complicated. The impact of *A. mellifera* on native insect pollinators can depend on broad community context, as can the relative effectiveness of *A. mellifera* in pollination of both native and nonnative plant species outside of agricultural systems. *Apis mellifera* is highly generalist and able to interact with hundreds of native plant species following its naturalization. It is unlikely to wholly replace native pollinators as visitors of specialized plant species, and its behavioral characteristics tend to reduce *A. mellifera*'s per-visit efficiency, even when its overall effectiveness is high. Preliminary results from field studies exploring the importance of *A. mellifera* versus other pollinators for pollination of native plants in Northern Uganda indicate that *A. mellifera* is less important than native hover flies as a flower visitor of focal native plant species. In light of current global declines in *A. mellifera* populations, maintenance of a diversity of pollinators and pollinator habitat are critical conservation needs in natural areas. In their roles as pollinators, hover flies or syrphides provide a significant ecosystem role (Inouye *et al.* 2015; Ssymank *et al.* 2009: 39–49, 159–162). Floral visits by adults are typical and as feeders of pollen and nectar they are assumed to be important pollinators, but their significance in this critical function requires better understanding (Rader *et al.* 2015; Rotheray & Gilbert 2011; Ssymank *et al.* 2009: 59–162).

#### **Key Objectives:**

1. Identification and quantification of the key biological indicators influencing pollinator interactions and colony strength of *Apis mellifera* in Uganda.
2. Develop different on farm approaches to eradicate the biological indicators affecting pollinator interactions and production in *Apis mellifera* colonies.
3. Determine how the key biological indicators influence pollinator interactions between bombyliidae and Syrphidae to better production in *Apis mellifera* colonies.
4. Establish the trends and patterns of bombyliidae and syrphidae pollinator interactions and how they can be enhanced biologically to improve production.

**Planned outputs/outcomes:**

The key expected outputs include a list of key bio indicators that may influence pollinator interactions between bombyliidae and surphidae to better production established, easy and practical on farm approaches to eradicate or manipulate these biological agents, established relationship between the biological agents and the key pollinators under study and finally enhancement of production and quality through informed establishment of pollinator colonies.

**Contact Phd student:**

Sarah Majugu, [sarahmajugu@yahoo.com](mailto:sarahmajugu@yahoo.com) (College of Biological Sciences, Makerere University, P.O Box 7062, Kampala, Uganda).

**Supervisors:**

Dr. Deborah Amulen (College of Veterinary and Agri-Business, COVAB, Makerere University, Kampala).

Dr. Patrick Vidulko (College of Veterinary and Agri-Business, COVAB, Makerere University, Kampala).



# Congress: Twelfth International Symposium on Pollination (ISPXII)

**31 August – 4 September 2020, South Africa**



The 12<sup>th</sup> International Symposium on Pollination will be organized from 31 August – 4 September 2020, at the Kirstenbosch National Botanical Garden.

**REGISTRATION IS OPEN ! SEE HERE FOR MORE INFORMATION:**

Symposium registration and organization go to Turners Conferences  
<https://www.turnersconferences.com/conferences/2020/Pollination2020/>

Accommodation go to Jacqui Goodwin <https://icppr.activeafrica.co.za/>

For alternative accommodation please see table on symposium webpage.

Pre/ during/ post symposium tours go to Jacqui Goodwin <https://icppr.activeafrica.co.za/>

Kirstenbosch National Botanical Garden is acclaimed as one of the great botanic gardens of the world. Few gardens can match the sheer grandeur of the setting of Kirstenbosch, against the eastern slopes of Cape Town's Table Mountain.

More information can be found on the website of the International Commission for Plant-Pollinator Relationships (ICPPR) ([www.icppr.com](http://www.icppr.com)). ICPPR was founded in 1950 as the International Commission for Bee Botany (ICBB). Its objectives are to promote & coordinate research on relationships between plants and pollinators of all types. That mandate includes studies of insect pollinated plants, pollinator foraging behaviour, effects of pollinator visits on plants, management and protection of insect pollinators, bee collected materials (e.g. nectar and pollen), and of products derived from plants and modified by bees. Further, the ICPPR organises meetings, colloquia or symposia related to the above topics and publishes and distribute the proceedings. The ICPPR collaborates closely with national and international institutions and is one of the 82 scientific commissions of the International Union for Biological Sciences.

**Contact:**

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School of Environmental Sciences - Bovey  
University of Guelph  
Guelph, Ontario, N1G 2W1, Canada



# Congress: 11th International Symposium on Syrphidae

## 6 – 11 September 2021, France

The 11th International Symposium on Syrphidae will take place in Barcelonnette (Alpes de Haute Provence, France) from Monday 6th to Saturday 11th September 2021.

The provisional **schedule** is as follows :

Arrival : Monday 6th September 2021

Symposium : Tuesday 7th to Thursday 9th September 2021

Excursion : Friday 10th September 2021

Departure : Saturday 11th September

**Access :** A bus will be available from and to Marseilles (railway and bus station Saint-Charles) on Monday 6th, departure around 15:00, and on Saturday 11th September, departure around 09:00. The Marseille Saint-Charles railway station is easily accessible by high speed train from neighbouring countries, including London (via Paris), or by bus from Marseille Marignanne International airport.

**Accommodation** will be available on the congress venue : Seolane center (<https://seolane.org/>) or at local hotels in Barcelonnette, ca. 10 minutes walk from the venue. During the Symposium a room with binocular microscopes will be available to delegates.

The excursion will be in the nearby Mercantour National Park (<http://www.mercantour-parcnational.fr/fr>).

At this time, we would like interested entomologists to complete the **registration of interest** (by 29 Feb. 2020) online at <https://syrphidae11.sciencesconf.org/>, to receive further information about the ISS11. Please be assured that the email you will indicate on your account on the sciencesconf.org web site will be used only to keep you informed about the Syrphidae congress !

Further details about accommodation, prices and booking will be announced with the second circular and online. If you have any question or suggestion regarding the Symposium, feel free to contact us at [syrphidae11@jimbe.fr](mailto:syrphidae11@jimbe.fr)

We are looking forward to welcoming you in beautiful Provence !

The 11ISS local Organizing Committee :

Gabriel Neve - Benoit Geslin - Arne Saatkamp - Jean-Yves Meunier - Marine Berro - Alrick Dias - Vanina Beauchamps-Assali





**Literature:**

## EARLY ONLINE

Daniels, J.D.; Arceo-Gomez, G. (2019). Effects of invasive *Cirsium arvense* on pollination in a southern Appalachian floral community vary with spatial scale and floral symmetry. *Biological Invasions*, early access.

Marjakangas, E.L.; Abrego, N.; Grotan, V.; de Lima, R.A.F.; Bello, C.; Bovendorp, R.S.; Culot, L.; Hasui, E.; Lima, F.; Muylaert, R.L.; Niebuhr, B.B.; Oliveira, A.A.; Pereira, L.A.; Prado, P.I.; Stevens, R.D.; Vancine, M.H.; Ribeiro, M.C.; Galetti, M.; Ovaskainen, O. (2019). Fragmented tropical forests lose mutualistic plant-animal interactions. *Diversity and Distributions*, early access.

Martinez-Nunez, C.; Manzaneda, A.J.; Lendinez, S.; Perez, A.J.; Ruiz-Valenzuela, L.; Rey, P.J. (2019). Interacting effects of landscape and management on plant-solitary bee networks in olive orchards. *Functional Ecology*, early access.

Nicholson, C.C.; Egan, P.A. (2019). Natural hazard threats to pollinators and pollination. *Global change Biology*, early access.

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