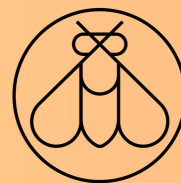


Issue 119
April 2026

ROSTRUM

NEWSLETTER OF THE ENTOMOLOGICAL
SOCIETY OF SOUTHERN AFRICA



Cover image: African Humming Bird Moth
Photo by Astrid Jankielsohn

IN THIS ISSUE

Top Honours Students 2025
Conference report back
New YEEP topic
And much more!



News from the Editor

We welcome entrants for the 2026 YEEP and Photography competitions.

I hope that 2026 has been treating everyone well.

We would like to congratulate the best Entomology Honours students for 2025. Well done on your achievement and we hope that this is the beginning of a long and fruitful association with the ESSA. Early Career Entomologists (ECE) are essential for the future of the society and we encourage participation in this demographic. This is why the ECE portfolio is a vital on the executive committee. We warmly welcome Ms. Jarmaine Magoai as the new social media co-ordinator, and we thank Dr Ashley Burke for her service and the fantastic work she previously contributed in this role for the society.

We had commendable runners-up to the YEEP competition, so we are sharing them with you in this edition. Both of these entries cover the topic of dealing with funding cuts in research, so this should be good food for thought. Also highlighted in this issue is some “hot” research from ESSA members that have been making the news; and the upcoming special edition of *African Entomology* on Sterile Insect Technique. This is an excellent opportunity to present your research in an open access journal with a highly competitive Article Processing Charge (although submitting to *African Entomology* is always is a good idea, even outside of special editions).

As the year begins, our *Rostrum* competitions are up and running. In this edition, we reveal the YEEP topic for 2026. We also want to remind ECE candidates to apply for travel grants. This is not only for registered students, but post-doctoral fellows as well.

Please remember that we welcome contributions to *Rostrum* all year round!



Shüné Oliver
Rostrum Editor
shuneo@nicd.ac.za

Top Honours Students 2025

Congratulations to the top BSc (Honours) Entomology students for 2025

Arwenn Kummer - University of Cape Town

Strijdom Badenhorst - University of Pretoria

Kayla Wade - Rhodes University

Kayla Kritizinger - North West University

These students win a year's free membership to the society.

Congratulations to the student's achievement and we hope that they will continue to flourish within the society.



CONGRATULATIONS



Advancing Sustainable Pest Management: Insights from the International Centre for Genetic Engineering and Biotechnology Arturo Falaschi Conference

Lawrence N. Malinga, Mathonsi Shilombe and Slindile Sithole

South African Sugarcane Research Institute, University of KwaZulu-Natal

Researchers from the South African Sugarcane Research Institute (SASRI) participated in the Arturo Falaschi Conference on Innovative Approaches to Sustainable Pesticide Residue Mitigation, hosted by the International Centre for Genetic Engineering and Biotechnology (ICGEB). This was in collaboration with CropLife Africa Middle East, and the World BioProtection Forum. The conference, held from 11 to 13 November 2025 at the Southern Sun, Sandton, brought together over 50 delegates from 11 countries, representing academia, research institutions, regulatory bodies, and industry.

The meeting focused on reducing pesticide residues through innovation, with strong emphasis on biological control, precision agriculture, and integrated pest management (IPM). Over the three days, discussions highlighted the need to move from reactive pesticide regulation toward proactive, science-based prevention strategies. Particular attention was given to the development and adoption of biopesticides, improved application technologies, and data-driven decision-making to minimise chemical inputs while maintaining effective pest control.

These discussions underscored the crucial role of entomological research in supporting sustainable crop protection systems, particularly in southern Africa, where regulatory pressures, export compliance, and environmental considerations are increasingly influencing pest management practices.

SASRI Contributions and Entomological Relevance

SASRI researchers made two poster contributions directly aligned with sustainable insect pest management.

Ms. Shilombe Mathonsi presented work from her PhD research on *Eldana saccharina* Walker (Lepidoptera: Pyralidae), examining how transport and handling influence moth fitness for sterile insect technique (SIT) applications. The study offers valuable operational insights for enhancing the effectiveness of sterile moth releases, underscoring the role of inherited sterility as a chemical-free tool in lepidopteran pest suppression.

Ms. Slindile Sithole presented a poster on the use of *Bacillus*-based biopesticides for suppressing plant-parasitic nematodes in sugarcane, highlighting biological alternatives or complementary options to synthetic nematicides. Her participation also supported the development of a proposed PhD project investigating the efficacy and adoption potential of biopesticides for managing the yellow sugarcane aphid (*Sipha flava*), a growing concern in local sugarcane systems.

Dr Lawrence Malinga chaired a session on advancing regulatory alignment and sustainable pest management in Africa. Presentations emphasised harmonisation of biopesticide registration, support for minor-use crops, and the importance of public–private partnerships in scaling environmentally responsible pest control solutions.

Key Scientific Themes and Innovations

Several conference presentations were of direct interest to entomologists. Advances in semiochemicals, entomopathogenic fungi, microbial biopesticides, and pheromone-based technologies demonstrated the expanding toolbox available for insect pest management. Studies on kaolin clay as a mineral biopesticide have shown promise for reducing pest pressure in low-input systems, while work on entomopathogenic fungi has highlighted opportunities for enhancing biological control through habitat manipulation and cover cropping.

Emerging technologies also featured strongly. Drone-based applications, including electrostatic spraying for improved under-leaf coverage, were discussed as a means of increasing efficacy against pests such as aphids. Precision agriculture tools and digital monitoring platforms were presented as key enablers of data-driven decision-making, residue compliance, and sustainable production.

Strategic Networking and Collaboration

The conference offered valuable networking opportunities that may lead to future collaborative research. Engagements with biological control companies, pheromone manufacturers, and technology providers led to discussions on pheromone-based mating disruption for *Eldana*, drone-assisted sterile moth releases, and the biological control of aphids and soil-dwelling pests. These interactions underscored the growing alignment between entomological research, industry innovation, and regulatory priorities.

Implications for Entomology and IPM

A recurring message throughout the conference was that biopesticides and biological control agents are most effective when integrated into robust IPM programmes. While adoption challenges remain, particularly around proof of performance and grower confidence, the evidence presented demonstrated that biological solutions can reduce pesticide residues, support market access, and contribute to long-term agro-ecosystem resilience.

For entomologists, the conference reinforced the importance of interdisciplinary research that links insect biology, ecology, technology, and policy. Innovations in SIT, pheromone ecology, microbial control, and precision application technologies offer significant opportunities to strengthen sustainable pest management across cropping systems in southern Africa.

Author roles and notes:

Dr Lawrence Malinga is Programme Manager (Crop Protection) and Senior Entomologist at the South African Sugarcane Research Institute, and an Honorary Research Fellow at the University of KwaZulu-Natal.

Ms. Shilombe Mathonsi is a PhD student at the University of KwaZulu-Natal, supervised by Dr Lawrence N. Malinga, Dr Zabentungwa Hlongwane and Prof. Caswell Munyai.

Ms. Slindile Sithole is an Assistant Research Officer at SASRI.



From left to right: Slindile Sithole, Lawrence N. Malinga, Shilombe Mathonsi



YEEP runner up 1: The future of entomology: How can entomologists adapt to limited funding?

Tania Pogue

Stellenbosch University

Funding is the backbone of any research project. After all, consumables need to be bought, equipment maintained, salaries paid, and if you're fortunate perhaps an end-of-year research group party. However, this backbone of entomological research is becoming a scarce commodity. In "underdeveloped" regions like Southern Africa, the need for consistent and reliable funding is more important than ever. South Africa is one of the world's 17 "megadiverse" nations (1), is a major food producing area for local and global consumers and is home to some of the world's most unique insect assemblages, many of which are vectors of critical diseases. This warrants a focus on funding research that protects our biodiversity, supports agricultural production and limits the impact of insect pests. Despite this, funding is a challenge faced across Southern Africa. The 2025/2026 budget for the Department of Forestry Fisheries and the Environment represents a decrease from previous years once inflation has been taken into account (2, 3), with the minister stating that we need to "do more with less". How we do this, however, is up to us (4).

Perhaps the most accessible way entomological research can continue with a limited budget is to use what we already have. The statement piece of equipment of any lab is usually an ultra-freezer, packed to the brim with old samples. These samples can span decades of past research, with a variety of species, populations, and sample types quite literally at our fingertips. It is standard practice to store samples after research has concluded, often under the guise of repeatability, or the promise to one day expand the research with additional studies conducted on these stored samples. This begs the question of how often are these stored samples really dug up and used for additional research? Perhaps it is worthwhile to take stock of the samples that have already been collected, processed and stored. Several additional insights are likely to be obtained from samples such as these – particularly those that may pertain to historical insect populations and their eco-physiology. Reevaluating existing samples is a quick way to limit overhead costs, while continuing valuable entomological research.

A prevailing approach to adapt to limited funding is through greater collaboration. We live in a world of inter-disciplinary research, where collaborators can be found in many different fields. Collaborations across disciplines can generate access to new facilities, resources and knowledge - that is already in use by our colleagues. However, to be sustainable these collaborations must go both ways. It is no longer enough to bring in a collaborator to address a single aspect of the research.

Collaborators must be included from the conceptualisation of research ideas all the way through to the end of a project. This gives both parties access to the key strength of interdisciplinary work: shared knowledge. These collaborations could include the development and "sharing" of research training facilities. Southern Africa is home to several top-quality research hubs that are home to state-of-the-art researchers and their expertise. Greater access to these facilities and the training they can offer provide an opportunity for that wealth of knowledge that is currently localized to spread more readily across the continent. Although many facilities already provide training, the reach of this training is also often limited by funding.

This can seem like a never-ending cycle of limitations. Prioritizing training and knowledge sharing lays the foundation for research. Not only will greater interdisciplinary collaboration aid in overcoming limited funding, it can also elevate research quality by providing new perspectives.

A key limitation to accessing funding for entomology is knowing how to apply for funding. This is of relevance to early career researchers who often have limited experience in grant or bursary applications. Often young researchers are brought onto projects that have already been awarded funding. In academia, postgraduate students are likely to apply for bursaries to cover their tuition, or conference travel costs (5), but this cannot compare to the scope of applying for a research grant. Some institutions provide some grant writing training. However, this is often limited. Training young entomologists should include guiding them on how to apply for and then allocate funding for their research. However, this often takes a backseat in the development of researchers.

Academic institutions play a pivotal role in the development of Southern Africa's entomologists. This training bleeds into all entomological sectors – including industry. As a result, all sectors should realize the importance of financial literacy for researchers – particularly those who are inexperienced. It is not reliable to assume that either academic or industry institutions will implement some degree of financial training for their researchers. It is thus the responsibility of all institutions to create financial literacy training programs. Barring that, the responsibility falls upon managers and supervisors to aid young entomologists in breaching the daunting world of funding applications. This could be accomplished by training courses or workshops. However, it may be more pertinent for young researchers to be brought on board the funding applications of projects they are – or plan to be – involved in.

This can include young researchers aiding in the grant proposal writing or assisting in drafting a research budget. If timing prevents this, previous grant applications – both successful and unsuccessful – should be shared with upcoming entomologists.

Perhaps we don't just have to “do more with less” and instead we can help to create more funding. Funding bodies, stakeholders, and policymakers determine not just who gets funding, but how much funding is made available. These decisions are based on several criteria, such as whether the project aligns with national priorities, the efficient use of funding, and the cost-return balance of the programme (3, 6).

Researchers can improve their chances of receiving funding by improving their communication with regards to applications, outcome reports, and impact statements. This is the time to take a step back and see where our research fits into government, or funder priorities – and then communicate that clearly. Highlighting how your research aligns with national priorities using policy-based language will make the importance of entomology clearer for policymakers, which in turn may encourage larger research budgets in future. As entomologists we tend to get stuck in our niche research bubbles and forget that not everyone uses research jargon as if it is their first language. Translating your research into clearly understood language can go a long way to ensuring your funding application is understood. The use of infographics, executive summaries, and monitoring and evaluation programmes is second nature to funding bodies. It is up to us to step into the world of our funders to make our research more accessible. This will help policies to better reflect scientific evidence and encourage funding decisions to better consider actual scientific needs.

Limited funding is a complex, multi-dimensional problem shaped by economic constraints, political priorities, and institutional structures. These issues are not faced by any single entomologist, yet it is an issue that we are facing head on in order to continue to drive innovation in our respective fields. Behind every underfunded project stands a dedicated researcher with the potential to solve real-world problems. Limited funding threatens not only scientific progress but also our ability to contribute to society. However, despite these challenges, I am confident that the solutions we work on as a community will not only let us overcome funding limitations but will foster even greater innovation that will propel entomological research to greater levels.

References

1. South African National Biodiversity Institute (SANBI). 2019. National Biodiversity Assessment 2018: The status of South Africa's ecosystems and biodiversity. Synthesis Report. South African National Biodiversity Institute, an entity of the Department of Environment, Forestry and Fisheries, Pretoria. pp. 1–214.
2. SAnews (2025) 'DFFE allocates R9 billion amid budget constraints', 27 June. Available at: <https://www.sanews.gov.za/south-africa/dffe-allocates-r9-billion-amid-budget-constraints> (Accessed: 09/12/2025).
3. South Africa. Department of Forestry, Fisheries and the Environment. (2025) Minister Dion George: Forestry, Fisheries and the Environment Dept Budget Vote 2025/26 [online]. Pretoria: DFFE. Available at: https://www.dffe.gov.za/speeches/george_2022526budgetvote (Accessed: [day] [month] [year]).
4. Arnoldi, M. (2025) 'DFFE obligated to 'do more with less' under latest budget', Polity.org.za. Available at: <https://www.polity.org.za/article/dffe-obligated-to-do-more-with-less-under-latest-budget-2025-06-27> (Accessed: 09/12/2025).
5. Entomological Society of Southern Africa (n.d.) Grants & Prizes. Available at: <https://entsocsa.co.za/grants-prizes/> (Accessed: 09/12/2025)
6. National Treasury (2025) Treasury on 2026 Medium Term Expenditure Framework Technical Guidelines, 23 July. Available at: <https://www.gov.za/news/media-statements/treasury-2026-medium-term-expenditure-framework-technical-guidelines-23-jul> (Accessed: 09/12/2025).



YEEP runner up 2: The future of entomology:

How can entomologists adapt to limited funding

Tafara Frank Bute

Centre for Biological Control, Rhodes University

In the Global South, resources are often limited compared to developed countries, where they are more readily available. This scarcity also affects research, particularly among entomologists in southern Africa, fostering resourcefulness and the outgrowth of innovative ideas that are advancing entomological research in the region and beyond.

Fieldwork contributes significantly to the overall expenditure in entomological research. Implementing cost-cutting measures in fieldwork is therefore an effective starting point for saving money. This can be achieved by using low-cost yet efficient equipment for insect collection, such as sweep nets, sticky traps, and pitfall traps¹, instead of more specialized tools like automated flight-interception traps (FIT)². Furthermore, employing pitfall traps in citrus orchards is both cost-effective and efficient, as it reduces the need for multiple trained scouts on a salary. In situations where a common pest, such as the False codling moth (FCM), *Thaumatotibia leucotreta*, occurs across various crops, including citrus, stone fruit, avocados, pomegranates, persimmons, macadamia nuts, and hot peppers³ it may be economical to hire a single scout to monitor multiple production systems.

In medical entomology research, insectaries offer significant opportunities to reduce costs by using homemade equipment, low-cost traps, and locally sourced insectary supplies. Insect diets can be prepared from inexpensive yet high-quality carbohydrate and protein sources, such as ground beans and yeast tablets, rather than importing costly larval diets. Mosquito-rearing cages can be constructed from modified plastic buckets with mesh, which are reusable and easy to clean, allowing for long-term use. In general, consumables should be chosen for reusability rather than single-use. For example, using modified plastic cups for mosquito collection is more cost-effective than paper cups, and such choices can significantly reduce expenses, especially with frequent use.

Collaborating

Entomologists should adopt broader collaborative approaches to succeed in environments with limited funding. These may include interdisciplinary partnerships, collaborations across research labs, departments, and institutions, as well as international partnerships. Beyond academia, collaborations with industry, government, and community-based or citizen-science initiatives are also important.

Collaboration enables the sharing of equipment and resources, often the most significant expenses in research. Partnerships across labs and departments, for example, the Centre for Biological Control (CBC) within the Department of Zoology and Entomology (DZE), and the Departments of Microbiology, Biochemistry, and Bioinformatics at Rhodes University, provide the CBC with access to genetics labs and related resources. Similarly, collaboration between the DZE and the Department of Ichthyology and Fisheries Science (DIFS) allows the CBC to utilise the DIFS ecophysiology lab.

In medical entomology, sharing equipment, traps, insectary spaces, and molecular labs with other research groups is an effective way to adapt to limited funding. For example, mosquito research laboratories at the University of the Witwatersrand, the National Institute for Communicable Diseases (NICD), and the University of Pretoria share biological materials, insect colonies, and expertise, while maintaining constant communication to ensure mutual benefit⁴. Such collaborative efforts provide a cost-effective approach to managing resources in a constrained funding environment.

Furthermore, entomologists in the Global South can use the Entomological Society of Southern Africa (ESSA) as a platform to foster targeted collaborations relevant to their work. Requests communicated through ESSA reach the appropriate audience efficiently, aligning with the organisation's mandate to promote communication among entomologists.

Third-stream incomes

Third-stream income can be generated through industry partnerships, commercialisation of research, and training programmes. These initiatives enhance financial stability, enable projects beyond the scope of standard funding, and strengthen ties with industry and local communities. For example, partnering with chemical companies to provide entomological expertise for testing mosquito repellents or specialised tools, or offering consulting services, can generate revenue. Similarly, providing technical advice to farmers for a service fee generates income while mentoring young agricultural entomologists in consultancy skills.

A major collaboration for the CBC involving its research partner, Citrus Research International (CRI), and industrial partner, River Bioscience (RB), resulted in the patenting of virus-based products, MultiMax and CodlMax⁵, now available in European markets. Through licensing fees and royalties, entomological institutions can establish a stable, long-term revenue stream, reducing reliance on grants and moving closer to self-sustainability. Institutions can also generate income by offering accredited courses or programs. For example, since 2005, the CBC has run the NQF Level 5 Rhodes University Short Course in Weed Biocontrol⁶. Such specialised training equips participants with essential skills while providing financial support for ongoing entomological research.

Use of open-access tools and courses

Entomologists can take advantage of open-source technology by using free or low-cost satellite data, such as Sentinel-2 and Landsat, to monitor ecosystems and study insect habitats. Analysing satellite imagery allows researchers to improve pest management strategies and monitor insect-borne diseases, such as malaria^{7,8}, while reducing the costs associated with frequent fieldwork. Additionally, modelling and simulation tools, including QGIS and R packages, offer free alternatives to expensive proprietary software.

Open-source bioinformatics pipelines facilitate the analysis of high-throughput and next-generation sequencing data. Tools such as Mothur⁹, QIIME2¹⁰, and MicrobiomeStat¹¹ provide cost-effective alternatives to proprietary software offered by molecular diagnostics companies. Entomologists involved in molecular studies can also benefit from free, hands-on workshops, expert-led courses, and professional development opportunities provided by the Department of Science, Technology, and Innovation through platforms such as Distributed Platform in Omics (DIPLOMICS)¹², which support training in genomics, proteomics, metabolomics, and bioinformatics.

Artificial intelligence (AI) also enables entomologists to achieve more with fewer field resources. For example, deep neural networks have been applied to insect classification¹³, opening possibilities for automated identification of insects such as wasps, ants, and bees, thereby reducing fieldwork time and costs. Less expensive methods, like sticky traps, can be combined with AI to automate insect identification and counting, as demonstrated by an ongoing project at the University of Delaware¹⁴. Locally, at the CBC, researcher Dave Kinsler developed an app integrating GIS and AI to monitor invasive plants, such as water hyacinth (*Pontederia crassipes*) and *Salvinia minima*¹⁵. Postdoctoral fellow Clarke van Steenderen¹⁶ is developing an AI tool to track potential invasion routes of the Asian Citrus Psyllid, a major citrus pest, into South Africa. These technological innovations offer cost-effective alternatives to traditional fieldwork, which typically incurs expenses for travel, accommodation, and subsistence.

Citizen science engagement

Engaging citizens in projects can help reduce financial burdens through collaborative efforts. Since one of the major challenges for science is gaining public trust, increasing community confidence can also enhance willingness to support or fund scientific initiatives. For example, communities affected by water hyacinth invasions around the East Rand funded the establishment of rearing stations for *Megamelus scutellaris* at Benoni Lake and Civic Lake. At the same time, the Centre for Biological Control (CBC) provides the insects and management expertise free of charge. In response to limited funding, the CBC has also revised its policy on sending insects to requesters: recipients now cover courier costs, while the insects remain free. On the other hand, citizen science platforms, such as iNaturalist and eButterfly, can also be utilised to expand species records without requiring large field budgets.

The future of entomology in the Global South will depend on entomologists' ability to adapt to limited funding through strategic collaborations, resource-sharing, innovative use of low-cost equipment and open-source technologies, citizen engagement, and third-stream income generation. Lessons from other institutions demonstrate tangible successes, yet much remains unexplored. By adopting these approaches and more, entomologists can move closer to self-sustainability while enhancing their capacity to address pressing agricultural, ecological, and public health challenges despite financial constraints.

References

1. Gibb, T. J., and Oseto, C. (2019). Insect collection and identification: Techniques for the field and laboratory. Academic Press.
2. Bolliger, J., Collet, M., Hohl, M., and Obrist, M. K. (2020). Automated flight-interception traps for interval sampling of insects. PLOS ONE, 15(7), e0229476.
<https://doi.org/10.1371/journal.pone.0229476>
3. Grout, T. G., and Moore, S. D. (2015). [Text extracted with permission from the editors]. In G. L. Prinsloo & V. M. Uys (Eds.), Insects of cultivated plants and natural pastures in Southern Africa. Entomological Society of Southern Africa.
4. Barker, A. (2025, December 4). Personal communication. University of Pretoria, Medical Entomologist.
5. Rhodes University Centre for Biological Control. Novel biopesticide developed with partners now launched for commercial use. Accessed 01-December-2025
https://www.ru.ac.za/centreforbiologicalcontrol/latestnews/novel_biopesticide_developed_with_partners_now_launched_for_commercial_use.html
6. Rhodes University Centre for Biological Control. Weeds short course. Accessed 01-December-2025 <https://www.ru.ac.za/centreforbiologicalcontrol/resources/weedsshortcourse/>
7. Malahlela, O. E., Adjorlolo, C., and Olwoch, J. M. (2019). Mapping the spatial distribution of *Lippia javanica* (Burm. F.) Spreng using Sentinel-2 and SRTM-derived topographic data in a malaria endemic environment. Ecological Modelling, 392, 147–158.
<https://doi.org/10.1016/j.ecolmodel.2018.11.020>
8. Wimberly, M. C., De Beurs, K. M., Loboda, T. V., and Pan, W. K. (2021). Satellite observations and malaria: New opportunities for research and applications. Trends in Parasitology, 37(6), 525–537. <https://doi.org/10.1016/j.pt.2021.03.003>
9. Schloss, P. D., Westcott, S. L., Ryabin, T., Hall, J. R., Hartmann, M., Hollister, E. B., ... Weber, C. F. (2009). Introducing mothur: Open-source, platform-independent, community-supported software for describing and comparing microbial communities. Applied and Environmental Microbiology, 75(23), 7537–7541.
10. Bolyen, E., Rideout, J. R., Dillon, M. R., Bokulich, N. A., Abnet, C. C., Al-Ghalith, G. A., ... Caporaso, J. G. (2019). Reproducible, interactive, scalable, and extensible microbiome data science using QIIME 2. Nature Biotechnology, 37(8), 852–857.
11. Zhang, X., Chen, J., & Yang, C. (2023). MicrobiomeStat: Comprehensive statistical and visualization methods for microbiome and multi-omics data (R package version 1).
12. Diplomics. <https://www.diplomics.org.za/> Accessed 04-December-2025.
13. Palma, G. R., Hackett, C. P., & Markham, C. (2023). Machine vision applied to entomology. In A. R. Moral & W. A. Godoy (Eds.), Modelling insect populations in agricultural landscapes (Vol. 8, pp. [page numbers if known]). Springer, Cham. https://doi.org/10.1007/978-3-031-43098-5_9
14. Wynn, N. (2025, July). Kudzai Mafuwe: Entomology PhD student success. University of Delaware. <https://www.udel.edu/udaily/2025/july/kudzai-mafuwe-entomology-phd-student-success/>
15. Kinsler, D. Macrophyte monitoring tool. Accessed 04-December-2025
<https://davidkinsler123.users.earthengine.app/view/macrophyte-monitoring-tool>
16. Clarke, V. Accessed 02-December-2025 <https://clarkevansteenderen.github.io/>



Impactful research and activities from ESSA members

Shune Oliver and Kelby English

Rostrum Editorial Team

South Africa is known for punching well above its weight when it comes to research. This was highlighted by a recent article highlight the country's excellence in Antarctic research (see: <https://www.dailymaverick.co.za/article/2026-03-12-south-african-scientists-outperform-heavyweights-princeton-oxford-and-stanford-in-antarctic-research/>). Entomology is no different, and we are proud of of society members contributing this trend. Therefore, the society would like to highlight some ESSA members who have made an impact not only in the academic space, but on the community as well.

Giant prehistoric insects – the textbook may need to change

For those of you mature enough (or with cinematic taste) may remember the movie “Them!” from 1950. It was one of the first “nuclear monster” movies, where atomic testing resulted in giant man-eating ants. Giant insects are a thing that elicits either horror or fascination in people (hopefully, if you are reading this, it is the latter). However, while the goliath beetle or Giant Wētā may be the among largest insects you may encounter today, this was not always the case. In the Carboniferous and Permian periods, there were some insects that far exceeded the size of modern insects. The largest of these was the griffinfly (*Meganeuropsis permiana*), a Permian dragonfly-like insect with a wingspan of around 71 cm and a body length of over 40 cm. In the Carboniferous, a close relative of this species *Meganeura monyi* had a wingspan of around 70 cm.

It is therefore a logical question to ask why we do not see such behemoths anymore? What has changed so that we do not see kestrel-sized dragonflies anymore? The most popular longstanding theory related to the presence of atmospheric oxygen. The oxygen concentration in this period was substantially higher than it is today (over 30% compared to 21% today). The prevailing theory is that the increased oxygen concentration allowed insects to get bigger as it was easier for animals without lungs to access oxygen when the gas was more abundant in the atmosphere. However, a recent study upends this 1995 theory.

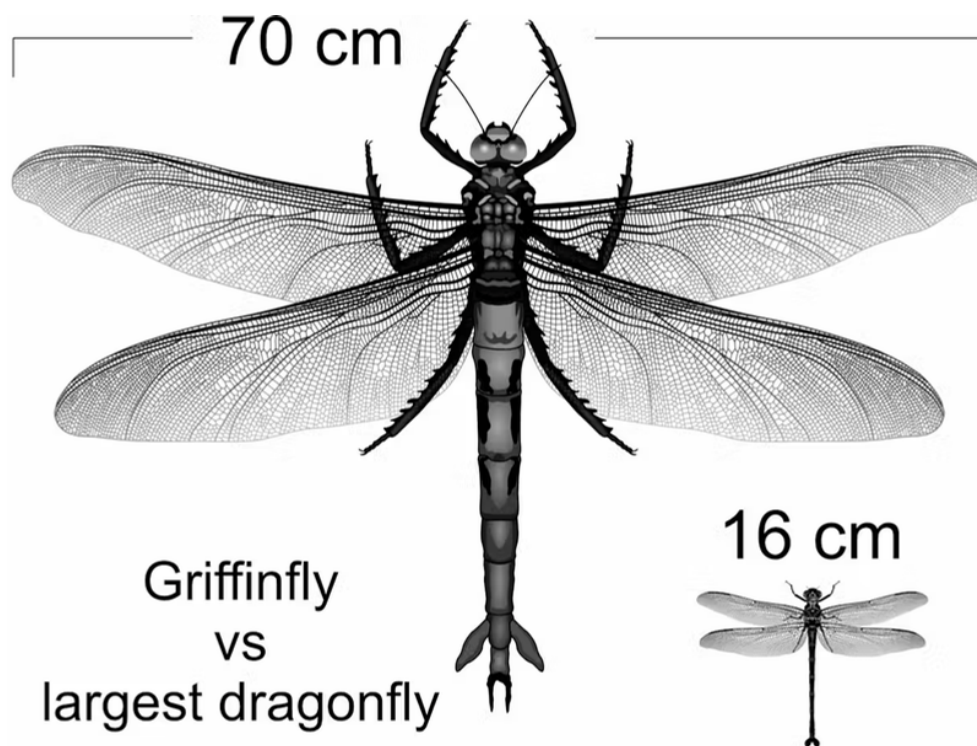
Insects obtain oxygen from the atmosphere through spiracles, or openings along the insect body wall. Tracheae are large air-filled tubes that branch inward from the spiracles, which branch into smaller fine tracheoles which reach into the tissues. The branching tracheoles reach close to the tissues, allowing oxygen to reach the tissues without the need for a transporting protein like haemoglobin. Oxygen is essential for life, but particularly for energetic activities such as flight. Therefore, if the prevailing theory is correct, large insects would need more tracheoles to provide oxygen for flight. This could be examined by assessing how much space tracheoles take up in highly energetic tissue such as flight muscle. This is where a newer study comes in. A multidisciplinary international study examined tracheoles of 44 species of flying insects. After a staggering 1,320 transmission electron micrographs, it was found that regardless of insect mass, tracheoles took up approximately the same space namely around 1% of the cross-sectional area of the flight muscles. Fossil evidence suggests that this pattern holds true for the large prehistoric insects as well.

SSA members Susana Clusella-Trullas and former society president Chris Weldon contributed to this study.

If you would like a fuller, but easily digestible description of this study, you can read this article in The Conversation Africa: <https://theconversation.com/giant-dragonflies-once-roamed-earths-skies-new-research-upends-the-textbook-theory-of-why-they-went-extinct-278997>.

There is also an interesting discussion in the following nature podcast: <https://www.nature.com/articles/d41586-026-00976-0>

The original article can be found here: <https://www.nature.com/articles/s41586-026-10291-3> (although you may need institutional access)



Comparison of the size of the prehistoric Griffinfly compared to the largest modern dragonfly. Picture credit: Estelle Mayhew / Aldrich Hezekiah

Research that makes a difference: Biocontrol in the Hartbeespoort Dam

Invasive species are a major problem not only in an academic sense. They have large ecological impacts that have both medical and economic importance. Increased international travel and transportation has brought disease vectors to new continents, complicating vector control interventions in the invaded area. These include the Asian tiger mosquito *Aedes albopictus*, now recognised as the world's most invasive insect, and the malaria vector *Anopheles stephensi* which is contributing to spreading the disease into urban areas. Farmers have suffered greatly by invasion of the fall armyworm (*Spodoptera frugiperda*) and the Polyphagous shot hole borer (*Euwallacea fornicates*) have caused devastation to trees. However, not all invasive species are insects or other animals. Invasive plants are also a major problem.

South Africa is a country that is prone to droughts. Our local flora is therefore efficient at utilising water. Invasive plants such as black wattle are substantially more water hungry. As such, they reduce water availability and increase drought risks. However, invasive plants that use excessive amounts of water that cause problems include water hyacinth (*Pontederia crassipes*); at Hartbeespoort Dam their invasion is both a symptom of pollution and a major ecological challenge. This species thrives on nutrient-rich water, forming dense mats that causes large scale disruptions by depleting oxygen in the water and blocking out sunlight. These plants are difficult to control as the dam has an accumulation of dormant seeds in its sediment, meaning infestations can recur even after control efforts. Seeds remain viable for 15–20 years, ensuring persistence.

The standard treatment until 2016 was herbicides. However, the continued use of these chemical interventions has additional long-term complications, and as such alternative control methods were sought. From 2019, interventions shifted to inundative biological control agent releases in early spring. Water hyacinth plant hoppers (*Megamelus scutellaris*) pierce the leaves, causing them to rot and sink. Over 350,000 hoppers were released in spring and summer 2025, with visible impact by 2026. This work is spearheaded by the Centre for Biological Control (CBC) from Rhodes University. This group has a number of ESSA members, including Dr Kelby English and previous society president Prof. Julie Coetzee. This project is a practical example of the impact that the work of society members is making.

Read more about this project on Ground Up news: <https://groundup.org.za/article/tiny-insects-helping-control-hyacinth-at-hartbeespoort/>

For more information on all research conducted by the Centre for Biological Control, please see our blog post and recently published annual report: https://www.ru.ac.za/centreforbiologicalcontrol/latestnews/cbc_annual_report_2025.html

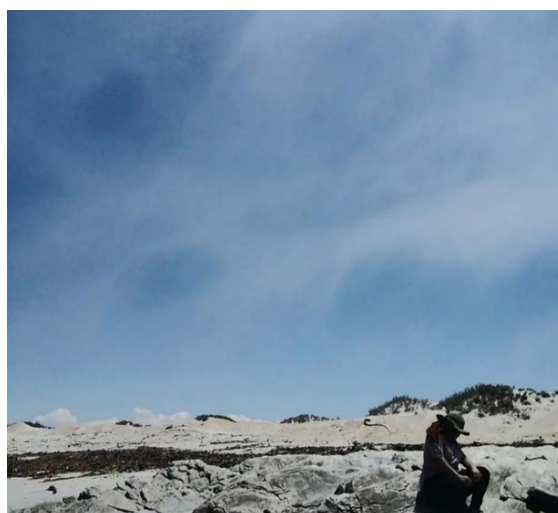


Meet your new Early career representative



Hi, my name is Jarmaine Magoai. I began my career in entomology in 2020 in the Terrestrial Invertebrates Department, at the National Museum Bloemfontein. I am currently assisting with research and work closely with Entomological collections. I am also studying shoot flies (Diptera, Muscidae), exploring their morphology and diversity. My current interests are caring for the entomology collections and the taxonomy of Shoot flies and also supporting early career Entomologists.

I am currently registered for Master of Science with specialisation in Entomology at the University of the Free State. I have always focused on an entomological path, with a degree in Entomology from the University of Pretoria and being employed for Entomology Collections. However, there are other opportunities that can introduce people to Entomology. Depending on related studies, some may be required to do elective courses.



Field work as part of my activities

Beyond my work, I am a “She is also a mentor” for a voluntary UP Mentorship program, mentoring third year students majoring in Entomology, Genetics, Microbiology and Zoology. This involves discussing topics specific to the Agricultural and Natural Science Field. I have been participating in the Final-Year Mentorship Programme at the University of Pretoria since 2022 and have invested my time, experience, and expertise in supporting these students as they prepare to transition into the world of work. We talk about documentation (studies, preparation of CV's, etc.), networking platforms and participation in general. It is a structured space to communicate directly with the mentee/s and we are able to track our progress. At the end of the programme we are assessed and issued certificates and the students are able to request reference letters through the university. I have also made it personal and make myself available to anyone who needs advice. A major motivation for me is that I never had a mentor, and I believe that helping others to have a clear sense of direction is something that I would have benefitted from.

For my role within the ESSA, I realise I am dealing with real people and understand that at times, each person’s journey is an individual one. My goal is to be able to listen first and see how we, as the society, can assist and offer available support.



Getting to know the local wildlife



Mzansi Insect of the Year is here!



For many people, insects can seem harmful or scary. But the truth is we would not be able to survive without them. They provide us with many ecosystem services, for free! However, insects may be in trouble. Many global studies have highlighted that insect numbers are declining due to several factors such as pesticides and land habitat degradation, and this may have cascading impacts on whole ecosystems and on humans.

Mzansi Insect of the Year aims to raise awareness about the importance and diversity of insects in southern Africa, and steps we can take to protect them.

Please go and nominate your favourite insect using this form:

MZANSI INSECT OF THE YEAR NOMINATION

Details needed: Species name, justification for nomination (500 words or less), picture (to be used with permission). Submission will be open for about three months.

Only species that are present in South Africa can be nominated. Anyone can nominate their favourite insect to be considered *Insect of the Year 2025*!

Entries are limited to two nominations per person.



ESSA Competitions and prizes

ESSA Young Entomologists' TRAVEL GRANTS

As part of its aim to promote all aspects of entomology, the Entomological Society of Southern Africa (ESSA) initiated the Young Entomologists' Travel Grants scheme in 2018. The grants are to support young ESSA members from southern Africa to (i) present research results at international scientific meetings or workshops with entomological relevance, or (ii) gain valuable entomological skills and experience by visiting an international research group. By doing so, the ESSA hopes to support the development of professional entomologists, and to broaden the range of skills and global relevance of research undertaken in southern Africa. Each year, a number of ESSA Young Entomologists' Travel Grants, each to the value of up to R25,000, may be awarded.

ELIGIBILITY AND CONDITIONS

To be eligible for an ESSA Young Entomologists' Travel Grant, applicants must satisfy ALL of the following criteria:

- Paid student or ordinary member of the ESSA for a minimum of two consecutive calendar years
- Resident and/or registered as a student or postdoctoral associate/fellow in a country within the Southern African Development Community (SADC; i.e., Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe)
- Thirty-five (35) years of age or younger, or within five years of completing a PhD (if older than 35) on the closing date for entries
- Accepted to give an oral presentation at an international conference or workshop outside of the applicant's country of residence and/or received notification of willingness to be hosted by an international researcher

The amount awarded will be determined based on a detailed budget provided by the applicant. Return international economy airfares and accommodation are the only allowable expenses in the budget. Conference registration fees and daily allowances must be paid by the applicant.

Applicants awarded an ESSA Young Entomologists' Travel Grant must submit a two-page report, including appropriate documentary photographs, to the ESSA within one month of their return to their country of residence. The report will be published in *Rostrum*, the newsletter of the ESSA.

HOW TO APPLY

Applicants must complete the application form [here](#), attach the required documents, and provide a cover letter of no more than one page explaining how receipt of an ESSA Young Entomologists' Travel Grant will benefit their development as a professional entomologist and the discipline of entomology in southern Africa.

Applications must be received no less than two months prior to the proposed date of departure.

Submit entries to the ESSA President,

Dr Charlene Janion-Scheepers, by email:

charlene.janion-scheepers@uct.ac.za

Applications will be assessed by the ESSA Executive Committee based on the following criteria:

- Fulfilment of all eligibility criteria
- Quoted budget realistic and justified
- Quality and persuasiveness of cover letter

ENTRY CLOSING DATE

There is no closing date for applications to the ESSA Young Entomologists' Travel Grants scheme. All applications received no less than two months prior to the proposed date of departure will be carefully considered in each calendar year and grants will be awarded based on the availability of funds.



ESSA Competitions and prizes

ROSTRUM PHOTOGRAPHIC COMPETITION

This is the first announcement of the 2026 photographic competition. Entries are to be sent to Shüné Oliver (shuneo@nicd.ac.za), and the entries will be judged by the *Rostrum* editorial committee as well as the ESSA executive committee and ESSA members. Three overall winners will be chosen, and each will be featured on a *Rostrum* cover. Each winner will receive a cash prize of R1000. Entrants are open all year round. By entering this competition, photographers automatically give permission to the ESSA to use their images in *Rostrum*, Neither the ESSA, nor *Rostrum* will use the image for financial gain and the image remains the property of the photographer. Please include your full name and organisational affiliation within the email body. A brief description of the subject matter of the image(s) should also be supplied, including insect identity where possible, to explain how they address the competition theme. Please save each submitted entry as follows: First name Surname_photo name, e.g., Jane Smith_ honey bee1.jpeg



Picture: Willem Bezuidenhout



ESSA Young Entomologists' ESSAY PRIZE

As part of its aim to promote all aspects of entomology, the Entomological Society of Southern Africa (ESSA) initiated the Young Entomologists' Essay Prize in 2014. The prize is to encourage discussion and critical evaluation of entomological issues relevant to Southern Africa by upcoming amateur and professional entomologists.

In each year that the prize is made available, an essay topic on a current issue facing the entomological profession in southern Africa will be set. Essays should be original and thought provoking. Reference to published sources of information should be kept to a minimum but are necessary when claiming a fact or providing evidence and examples. The essays must be written in English and should be between 1000-1250 words in length. Numbered referencing should be used for in-text citations. A list of cited references should be included but does not contribute to the word limit.

Entrants for the ESSA Young Entomologists' Essay Prize must satisfy ALL of the following criteria.

Entrants must be:

- Paid-up student or ordinary members of the ESSA.
- Residents, or registered as a student or postdoctoral associate/fellow, in a country within the Southern African Development Community (SADC; i.e., Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe).
- Thirty-five (35) years of age or younger on the closing date for entries.

Entries will be assessed by the ESSA Executive Committee, who may also call upon other members of the ESSA to contribute to the assessment.

Assessment will be based on the following criteria:

- Comprehension of the topic
- Clear placement of the argument within the context of southern Africa
- Originality of ideas
- Persuasiveness and coherency of the argument
- Appropriate and effective use of facts, evidence or examples
- Grammar and spelling

The winning entrant will receive a certificate and be awarded a cash prize of R2000. The winning essay will be featured in *Rostrum*, the newsletter of the ESSA. Readers of *Rostrum* will be invited to respond to the essay in the following issue. Only one prize will be made in each year that it is available.

It is understood that the winning entry contains the views and opinions of the winning entrant. These views and opinions will not necessarily reflect those of the ESSA.

The topic for 2026 is: “**Balancing ethical research on insects with demands for sustainable development**”. In this essay, we encourage engagement in a manner that would be of interest to the broader entomological community.



AFRICAN ENTOMOLOGY



SPECIAL ISSUE: THE CONTINUED METAMORPHOSIS OF THE STERILE
INSECT TECHNIQUE IN SOUTHERN AFRICA.
EDITORS: DES CONLONG, BRIAN BARNES



Entomological Society
of Southern Africa

AFRICAN ENTOMOLOGY SPECIAL EDITION

TITLE

The continued metamorphosis of the Sterile Insect Technique in southern Africa

SCOPE

The edition invites papers from current and emerging AW-IPM programmes with an SIT component. These can outline recent SIT research topics, including any mix of:

- Development and optimization of mass-rearing techniques for SIT candidate and currently operationally reared species
- Modern dose mapping of irradiators
- Use of X-ray radiation as an alternative to gamma radiation
- Radiation biology studies
- Improved cold chain management for SIT insects
- Pilot field and cage release studies
- Social acceptance and community engagement regarding SIT releases
- Sustainable business models for SIT programmes not funded by government
- Submissions may cover any combination of the above areas.

EDITORS

Editor-in-Chief: Iain Paterson

Subject Editors: Des Conlong, Brian Barnes

SUBMISSION PROCESS

African Entomology is fully virtual, allowing rapid publication once approved.

Special Edition opens April 2026; submissions accepted until 31 August 2026.

Manuscripts must follow the Journal's Instructions to Authors.

Cover letters should indicate submission is for the Special Edition: "The continued metamorphosis of the Sterile Insect Technique in southern Africa."

Please also include the names and contact details of 3 potential referees, who may or may not be used in the review process.

New ESSA members

We would like to welcome new members to the society:

Lungisa Mulaudzi - Agricultural Research Council

Yvonne Robson - Retired member

Raynold Moagi - Citrus Research International

Abongile Mbande - Agricultural Research Council

Londeka Akhona - Agricultural Research Council

Abongile Nxitywa - Agricultural Research Council

Hendrik Badenhorst - University of Pretoria

Robyn Manuel - Stellenbosch University

Nanike Esterhuizen - Hortgro Science, Stellenbosch University

Megan Riddin - Rhodes University

Vaughn Jessnitz - Goliath Training



Upcoming events

International Congress of Dipterology

Since 1986, these Congresses have been held every four years in different locations around the world as a means of sharing research and enhancing communication among dipterists on an international scale. For nearly 40 years, these Congresses have been expertly accomplished by the Organizing Committees of each one, under the authority given by the ICD Council, an organization whose purpose is to provide continuity and direction for International Congresses of Dipterology. On 8 May 2025, the Council officially merged with the Dipterists Society, following the unanimous votes of both organizations, so from here on the Council operates as an Executive Committee of the Dipterists Society. This was a long time coming, as the first proposals for the formation of an international society of dipterology which included the Council were made in the [2008 Council meeting](#), so this merger represents the culmination of this idea.

The next ICD is the 11th (ICD XI), to be held from 10–16 July 2027 at the Westin Hotel in Zagreb, Croatia.

More information will be posted here in the near future!

To stay informed about International Congresses of Dipterology, please join the [Dipterists mailing list server](#), which is the list server for the Dipterists Society.



Upcoming events



On behalf of the Organizing Committee of the XIII European Congress of Entomology, the French Entomological Society and the Praesidium for European Entomology, it is our great pleasure to welcome you to Tours, France, in the heart of the Loire Valley, from June 29 to July 3, 2026.

Following the long and successful tradition of previous ECE meetings – from the inaugural congress in Reading in 1978 to the vibrant gathering in Heraklion in 2023 – ECE 2026 continues to bring together the international entomological community to share knowledge, foster collaboration, and inspire future research.

Today, as the world faces profound ecological and sociological challenges, the role of insects has never been more vital – or more fascinating. Insects and their associated micro-organisms are recognized as key allies in addressing a wide range of interconnected societal issues. They provide essential ecosystem services – such as pollination, pest regulation, nutrient cycling, and soil enhancement – and increasingly contribute to sustainable food production, organic waste recycling, and the development of bio-based innovations. At the same time, they remind us of the delicate balance between benefits and risks: while some insects act as pests, vectors of disease, or invasive species, others offer powerful, nature-based solutions to foster ecosystem resilience, improve human, animal or plant health, and support the transition toward a more sustainable future.



ECE 2026 is the ideal forum for exploring this duality and the infinite diversity of insect species, evolutionary strategies, and insect-human interactions. With a rich program of plenary and keynote lectures, symposia, and poster sessions, our goal is to stimulate interdisciplinary dialogue – from fundamental science to applied innovation, from the molecular scale to global policy, and from biodiversity conservation to sustainable development.

And what better place to have these conversations than Tours? Nestled between the Loire River and an even more irresistible river of local wine, Tours offers the perfect place to explore the French art de vivre. Expect brilliant discussions by day, and equally brilliant wines and cheeses by night. Our historic city, surrounded by the stunning Loire Valley châteaux, invites you to slow down, taste, reflect, and perhaps even fall in love – with entomology all over again.

We are committed to making ECE 2026 a memorable and high-quality experience, full of engaging science, new connections, and yes – a bit of gastronomic inspiration. After all, where else can you attend a congress on insects, then toast to them with a glass of sparkling Vouvray?

We look forward to welcoming you warmly to Tours in 2026.

Bienvenue à Tours!

On behalf of the Organizing Committee,

<https://www.ece2026.org/>

<https://www.ece2026.org/important-dates>

<https://www.ece2026.org/fees-and-deadlines>





YEBO GOGGA YEBO AMABLOMO 2026

DATES: 13 –17 MAY 2026



**YEBO GOGGA 2026
FOOD & WATER**

TIMES:

- 8:30 – 14:00 weekdays
- 9:00 – 15:00 Saturday
- 9:00 – 13:00 Sunday

VENUE:

- Oppenheimer Life Sciences Building, WITS, Johannesburg

Visit the ESSA stand or volunteer to help us man the stand!
Please fill in [this form](#) to volunteer



wits.ac.za/yebogogga/



[/yebogoggaexhibition/](https://www.facebook.com/yebogoggaexhibition/)

Link to [sign up](#) form





ICE 2028
17th–21st JULY 2028
CAPE TOWN
ENTOMOLOGY FOR A BETTER FUTURE

Website: www.ice2028.com



Featured social media:

Website:

The ramblings of an Entomologist

https://www.youtube.com/channel/UCoBwW_pLxCjkw1Jb-iadhPA/videos

BluesSky: Royal Entomological Society:
<https://bsky.app/profile/royentsoc.bsky.social>

Contributions to Rostrum

Send all contributions for the next issue of Rostrum by email to Shüné Oliver before **1 August 2026**: Shuneo@nicd.ac.za or contact the editor for details about the next issue.

