

UESM Newsletter

Summer Edition 2020



Interactive buttons 



Editorial



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Funny Features and Creatures

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SEM and TEM

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Editorial

With the *festive season* upon us, we would like to present our final edition for the year 2020.

We kick off the *Regulars* section with a special Letter from the Director, in which Prof Carlos Bezuidenhout reflects on an out-of-the-ordinary year. Special awards are once again shared under the Accolades, followed by career citations of leading extra-ordinary UESM staff members listed in the Calliper. We waited in anticipation for the NRF rating evaluation outcomes of staff members who applied for rating in 2020. Not all results have been communicated by the time of print, and unfortunately, we could not postpone the *Summer* edition any longer. We are therefore looking forward to acknowledge all the 2020-cycle NRF rated scientists in the *Autumn* edition of 2021!

The Ethics section includes more information from Prof Roelof Burger on new regulations, the ethics process for FNASREC, and FNAS and UESM ethics statistics. The role of Prof Rodney Medupe, Dr Lesego-Molale Tom and Ms Sascha Roopa as part of the Community Engagement committee is articulated under the Community Engagement section. Ending the *Regulars* section, the Fact Box once again hosts an array of new breakthroughs and interesting facts in the scientific world.

As mentioned in the [Spring edition of ENVIRA](#), the *Features* section in this edition is packed with *captivating* photographs submitted by our colleagues and students in the UESM. The *Summer* edition, therefore, boasts stunning images under the categories Landscape, Macro-organisms, Microscopy, as well as Funny Features and Creatures.

We would like to congratulate the winners of each category as seen under our *Features* section. Be sure to click on the links that allow you to see more of the images submitted from all participants.





We will be in touch with regards to prizes, but feel free to email us at envira.newsletter@gmail.com for any queries.

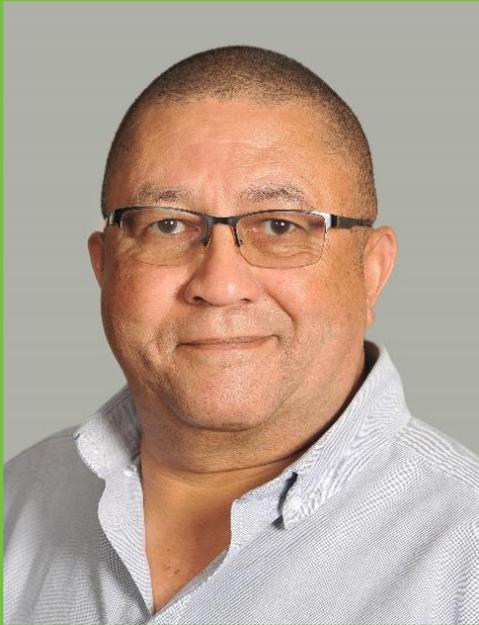
Lastly, on behalf of all the UESM staff members, we would like to thank the directors for their hard work, patience and guidance throughout this year. In his Letter, Prof Carlos summarised all the highlights of this year – and all of this was possible despite the challenges of dealing with a global pandemic. However, none of this would have been possible if it was not for exceptional leadership, a positive attitude, and patience amidst loads and loads of administrative procedures to keep our students and staff safe, secure and informed. Professors Carlos, Sarina and Stuart, we thank you for not only maintaining 'business as usual' when everything was unusual, but for providing opportunities for academic and research excellence despite challenging times!

From the editorial team, we wish you all a wonderful festive season, safe travels and health in the light of the pandemic.

Until Autumn 2021!

Frances Siebert (Editor) and Clarissa Minnaar (Sub-editor)





Before and beyond one hundred days

Prof Carlos Bezuidenhout

Any new appointment in political or business administration is followed by the successes and failures during the first 100 days. A critique is then provided on these. When the editor of ENVIRA requested I provide a message in the summer edition of this prestige publication, my original thoughts went to an appreciation and Christmas message combined. However, as I started reflecting on the message I realized that we have so much to be thankful for, even though we had to deal with elephants in the room, and a rampant virus in society - SARS-CoV2. I will thus reflect on the first 100 days and the period beyond.

This year, particularly the first 100 days, started with lots of promise. I was appointed as the third Director of the Unit for Environmental Sciences and Management, taking over a well-structured and smooth-running entity from Prof. Nico Smit. Part of the hand over discussions was the staff performance agreements, as well as the Internal Program Evaluation. The second part of January was taken up by the former activity. It was a steep learning curve, but agreements were put in place that we can all be proud of. I want to thank you all for the positive attitudes and for constructive criticisms during this process. Fresh out from this task, the completion of the IPE beckoned and had to be completed by Valentine's day. Once again thanks to Prof. Nico, as well as JC van Rooyen, Anita du Preez, Corene van der Merwe, Mada Vosloo and all the subprogram managers, who provided the information to write a decent, well-received IPE and strategic plan for 2020 to 2022. One of the recommendations from this process is that the UESM is well positioned and has the necessary stature to apply for conversion to a Center of Excellence. This is an aspect that we need to have serious discussions about in 2021. Another aspect that came up was the outdated information on the webpage. In some cases, renewals had already been affected and processes are underway to address this critique.

We made an attempt to have regular subprogram leader meetings, but only two took place during this year, one in the first 100 days and another during the lockdown level 3. We had constructive discussions and made certain plans. Many of these were executed and some are in the process of being implemented.

While all these processes were taking place and time was ticking towards day 100, elsewhere in the world COVID-19 was spreading like wild fire. It was all over the media - news, TV, printed, social media, but it was mainly in Asia and Europe at that stage. Even before day 100 the first local cases were reported. Taking into account measures from this as well as from past pandemics and more recent epidemics, the State of Disaster Act was invoked and the hard lockdown followed. This happened as we approached day 100. We were devastated. Our movements were restricted and all the other associated rules were put in place. I do not have to explain, because you were there and you were affected. Many, many questions followed. We had to remotely put emergency measures in place following strict COVID-19 regulations and Occupational Health and Safety Act stipulations. An enormous amount of administration went into the planning and execution of the plans, risk assessments, etc. For this I really would like to take this opportunity to thank our officially appointed OHS officer, Mr Lieb Venter, for excellently performing his duty and beyond.

Letter from the Director continued...



During this period – Level 5 through to Level 1, we dealt with requests for reintegration of staff and students. At times it was challenging but we are resilient, and we managed to emerge. In some cases, our progress was retarded and our mind sets were negatively affected. I am really thankful to all of you. During this period communication with management about your well-being was conducted through letters from staff and Postdocs, as well as data from a survey that was done amongst post-graduate students. These inputs have had and is still having impacts on decisions that the NWU management is taking. Thank you to all of you that are playing your part. Now even under COVID-19 regulations, our laboratories are operational and the UESM fleet vehicles are available for field work. Our lives are slowly getting into the rhythm of the new normal. Dealing with this virus has now become part of our lives and we are all making efforts to prevent the potential spread of it. I want to thank you all for your careful considerations and the efforts that you are putting into place to protect yourself and the next person in your vicinity.

We have been functioning satisfactory in all aspects. Meetings could be conducted mainly via Zoom, MS Teams, Google Meet etc. Online lectures could take place. Financial transactions were approved, new contracts were signed, in some cases these were multi-million rand contracts. Various MoUs were also put in place. Administration of M & D programmes were successfully managed. A number of our students graduated with Masters and PhDs. The number of master degree graduates were slightly less than previous years, however, the number of PhD graduates exceeded those of previous years.

Output for subsidy articles, conference proceedings, books, book chapters, etc., for 2020 are comparable to previous years. There are still a number of these that will be published in 2020. Please make sure that all your outputs are recorded. It appears that the lockdown has had an un-intended positive spinoff with respect to manuscripts that could be completed. During the performance appraisal meetings it was evident that a large complement of our staff exceeded 10 papers published in a year, several published more than 15, approaching 20. The quality of these outputs is also very high and in many cases the published articles are in quintile 1 and 2 journals.

During this year several of the staff, postdoc fellows and students were acknowledged for their research contributions by professional and other bodies. Some staff members were invited to high level national and international expert committees. During the first 100 days I wrote an accolades communication that was sent to the unit. However, at some stage during the hard lockdown, Dr Frances and Clarissa contacted me and enquired about reviving ENVIRA so that this publication could carry accolades and other information of the UESM. The efforts of these individuals are really appreciated. This publication is widely circulated in the NWU and comments from the FNAS deanery, DVCs and colleagues were really positive. One colleague remarked that this journal should be recommended for Department of Higher Education and Innovation subsidy. The stories contained in this publication are inspirational.

During this year several colleagues were also promoted. Drs Tshegofatso Dikobe

Leandri Kruger, Madira Manganyi and Wynand Malherbe were promoted to Senior Lecturers. Drs Livho NemaKonde, Frances Siebert and Dirk Cilliers were promoted to Associate Professors. Associate Profs Rialet Pieters and Luke Sandham were promoted to full Professors. From all of us at the UESM, we congratulate these colleagues. These promotions demonstrate the high quality of the research and

Letter from the
Director continued...

as well as teaching and learning that is practiced. We also wish them well in their future academic careers. Prof Luke Sandham will, unfortunately, be joining the Faculty of Humanities as the acting Executive Dean. We are sad that we are losing an academic of such a very high caliber but are happy for Prof Sandham that his career has excelled in such manner.

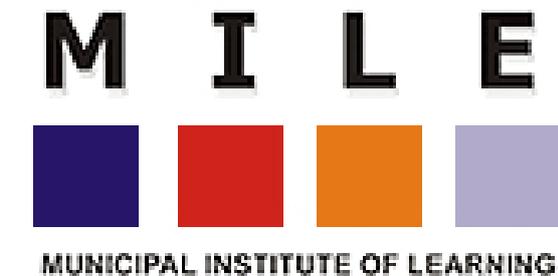
Another bit of sad news is that two senior academics, Professors Juaneé Cilliers and Paul Beukes will be leaving the NWU. Prof Cilliers at the end of 2020 and Prof Beukes in early 2021. Prof Cilliers will take up the position of Head of School of the Build Environment at Sydney University of Technology in Australia. Over the past 11 years Prof Juaneé played an important role in leading the Urban and Regional Planning environment. Prof Paul Beukes will also be leaving for Australia and will be working in the private sector. Prof Beukes was associated with atmospheric chemistry in the UESM and had contributed to this field in various ways. Earlier

in 2020, the atmospheric chemistry group decided to join the Chemical Beneficiation Research group. We are grateful for the contributions of all three senior academics that has or will be leaving the UESM.

Many colleagues successfully applied for funding and many applications have been submitted to national and international funding agencies. One of the big application events was preparing and submitting the EFTEON landscape application. Brief reminder: “EFTEON is a large research infrastructure that is being developed under the South African Research Infrastructure Roadmap (SARIR) program of the Department of Science and Innovation and hosted by the South African Environment Observation Network (SAEON)”. The life span of the EFTEON landscape is expected to be well beyond 20 years.

All of these activities and success stories were part of the first 100 days and the days beyond. There are now less than 20 days to the end of this year and some of use still have much to do before we can take a well-deserved break.

I would thus like to take this opportunity to thank everyone for their contribution in making this year happen. That includes everyone in the UESM. I wish you all a peaceful December/January break. May you and your loved ones have a well-deserved break and may you have a prosperous 2021.



Congratulations

The following awards and accolades from the national and international scientific community demonstrate the high quality and significant impact of research within the UESM.

Ms Karen Puren and Ms Denise Janse van Rensburg

Ms Karen Puren and one of her fourth year students, Ms Denise Janse van Rensburg from the Spatial Planning, Development and Implementation sub-programme have received a first runner up award in a design competition that was organised as part of an international online conference with the theme "The Paradox of Planning Implementation across the Globe" that was held to commemorate World Town Planning Day on the 8th of November.

For more information on the competition and to view the poster, [click here](#).

Ms Karen Puren

Urban and Regional Planning staff member, Ms Karen Puren, has secured International collaboration as an official academic partner in the spatial planning stream of an international postgraduate programme MURCS (Master in Urban Climate and Sustainability). The collaborative partnership includes 14 entities (three core partners, six academic partners, three institutional partners and three industry partners) that cooperate in the delivery of three Master degrees. Urban and Regional Planning at NWU cooperates through student and lecturer exchange programs for teaching and research. The partnership is funded by the prestigious Erasmus Mundus scholarship programme.

(For further details: <https://murcs.eu/programme/newsletters/>).

Prof Dewald van Niekerk

Prof. Dewald van Niekerk has been appointed as an Affiliate to the Warning Research Centre at University College London (UCL). Founded in 2020, the Warning Research Centre (WRC) aims to bring together global expertise to explore the role of warnings in managing vulnerabilities, hazards, risks, and disasters. The WRC is housed in the Department of Science and Technology Studies. It is an interdepartmental centre focusing on all aspects in relation to warnings for all forms of risks and disasters. The WRC builds on expertise already established at UCL with warning expertise at universities globally to work with businesses, government, non-governmental, and intergovernmental organisations to address the growing need for effective warning and alert systems via cutting-edge research, policy guidance, applications, and collaborative expertise.

Accolades continued



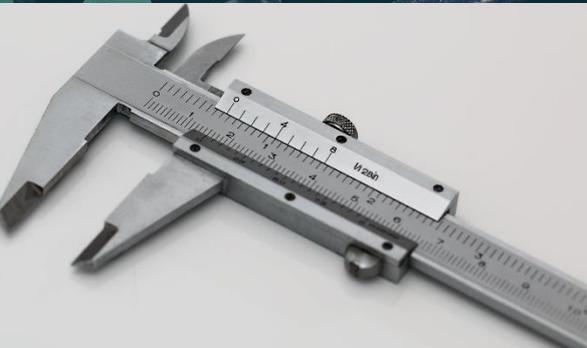
Prof Dewald van Niekerk, Dr Sizwile Khoza and Dr Livhuwani David NemaKonde

The article 'Understanding gender dimensions of climate-smart agriculture adoption in disaster-prone smallholder farming communities in Malawi and Zambia', authored by Dr Khoza, Prof van Niekerk and Dr NemaKonde has been selected as a Highly Commended Paper in the 2020 Emerald Literati Awards. The [award-winning article](#) has been made freely available for a limited period.

UESM staff and student involvement in NACA

We would like to extend commendation to the UESM staff and students for their invaluable contribution and involvement in the 2020 Annual Conference of the National Association for Clean Air (NACA). See the programme for more information on the conference topics and delegates who were involved: <http://www.nacaconference.co.za/programme/>.





SCOPUS: Top 10 most cited extra-ordinary appointments in the UESM

November 2020

Prof Anne Mee Thompson (USA)

Sub-programme	Citations	Articles	H-factor
Climate Change, Air Quality and Impacts	12494	273	60

Prof Steven Klaine (USA)

Sub-programme	Citations	Articles	H-factor
Aquatic Ecosystem Health	8072	126	41

Prof Trenton Garner (United Kingdom)

Sub-programme	Citations	Articles	H-factor
Biodiversity and Conservation Ecology	6032	143	41

Prof Luc Brendonck (Belgium)

Sub-programme	Citations	Articles	H-factor
Aquatic Ecosystem Health	5830	179	41

Prof Lauri Laakso (Finland)

Sub-programme	Citations	Articles	H-factor
Climate Change, Air Quality and Impacts	4627	107	40

Prof Glyn Howatson (United Kingdom)

Sub-programme	Citations	Articles	H-factor
Aquatic Ecosystem Health	4410	196	35

Prof Erik Andersson (Sweden)

Sub-programme	Citations	Articles	H-factor
Ecological Interactions and Ecosystem Resilience	3330	54	24

Prof Angus Morrison-Saunders (Australia)

Sub-programme	Citations	Articles	H-factor
Environmental Management	3276	124	31

Prof Ernst-Gunther Brunke (South Africa)

Sub-programme	Citations	Articles	H-factor
Climate Change, Air Quality and Impacts	2977	53	24

Prof David Weindorf (USA)

Sub-programme	Citations	Articles	H-factor
Aquatic Ecosystem Health	2948	154	31

Why 'The Calliper'?

A calliper is a measuring instrument to measure the diameter of something. In this *Regulars* item, we measure and reflect on scientific outputs in the UESM.

How the top 10 most cited researchers were determined:

This list is based on the career citations of extra-ordinary appointments in the UESM as reflected by SCOPUS on 25 November 2020. As there are 75 extraordinary appointments in the UESM, only those with a H-factor of more than 20 were considered for the top 10 list. The top ten most published and most cited UESM researchers for 2020 will appear in the Autumn 2021 edition.



Research Ethics in Environmental Sciences and Management

Ethics

Roelof Burger

In the past two years, The Senate, through the Senate Committee for Research Ethics (SCRE) has implemented many new regulations. The ones that affect UESM researchers the most are:

1. All studies need an independent ethics review
2. All studies need a unique ethics number
3. Ethics approval (or clearance) is only valid for 1 year
4. Research on a project cannot start without an ethics number
5. The responsibility for ethics clearance lies with the supervisor, not the student

The NWU has several committees, and you can submit your studies to the relevant one. See this page: <http://services.nwu.ac.za/research-support/ethics>

FNAS has established FNASREC to deal with studies that are of low or no risk and that do not fit into the other committees.

Currently FNASREC has reviewed around 628 of the 1030 postgraduate studies in FNAS. FNASREC is a small committee with limited administrative support, so the load is heavy. They also operate a little different from other committees, in that they actively contact the researchers and try to remind them to do things other committees take for granted. Since they are dealing with disciplines where the concept of ethics review is still a bit novel, FNASREC has to continue going the extra mile for the time being.

The process for FNASREC is currently as follows:

1. Study goes through the scientific review in the discipline
2. Study is submitted to FNASREC for review with the same documentation that FNAS currently requires, namely a) Scientific review form or letter; b) Research proposal; c) Signed code of conducts
3. Low-risk studies need additional documentation to prove ethics training or maybe an SOP for other kinds of risks
4. FNASREC meets monthly to review these and send out certificates
5. FNASREC does annual reviews of studies in the system

You can use this link for new applications:

<https://forms.gle/Lw1MszaZAGkuyYL86>

Ethics continued



If you received emails about an annual review, this is just a form where you can tick the status and potential 'incidents' in that project. Again, the need for this annual review is prescribed by SCRE. FNASREC tries to maintain an archive of studies in the Faculty to give the process legitimacy. It is more important for the new studies, so if you cannot find the old proposals, just complete the review form.

FNASREC has tried to make this process as painless as possible. However, since there is such a large number of applications and the interface with the official NWU student archive is still problematic, there are some growing pains. Your patience is appreciated.

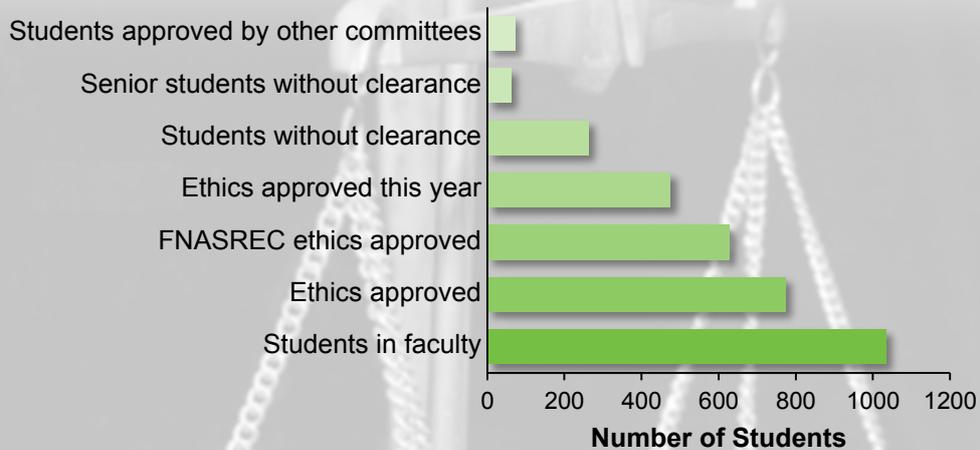
FNASREC hopes to review the SOP for ethics in FNAS over the next six months and engage you to make sure all processes make sense for the Faculty. In the meantime, FNASREC will be continuing in the manner described.

For any enquiries contact Prof Burger:

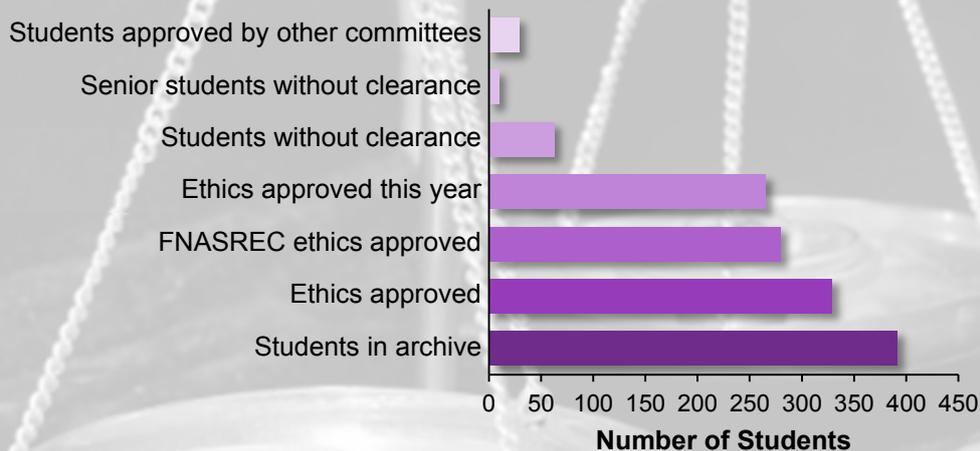
Roelof.Burger@nwu.ac.za



FNAS Ethics Statistics



UESM Ethics Statistics



Community Engagement Committee

Lesego Molale-Tom and Sascha Roopa

According to the North-West University Strategy for Community Engagement (CE):

“It should be noted that this strategy document is not the corporate strategy of the NWU, but a strong input into it, focusing exclusively on CE as an integrated activity or cross cutting activity in both research and innovation and teaching and learning. The NWU strategy statement as outlined in the 2015-2025 NWU strategy is: “To transform and position the NWU as a unitary institution of superior academic excellence, *committed to social justice*”.

For this reason, a CE committee was founded and is chaired by the Deputy Dean of the Faculty of Natural and Agricultural Sciences, Prof Rodney Medupe. Dr Lesego Molale-Tom and Ms Sascha Roopa form part of the CE committee as representatives of the Unit for Environmental Sciences and Management. Their duty is to keep record of existing CE projects, make sure they have the correct documentation (Memorandums of Understanding and Memorandums of Agreement), and ensure that all ongoing projects within UESM run sustainably. It is also their role to present all new projects to the committee in order for them to be approved and processed correctly.

For 2020 and early 2021 the main aim of the committee is to finalise a process of initiation for each new project and finalise on-going projects so that they align with the NWUs standard operations procedure.

For enquiries or registration of new community engagement projects, kindly email Dr Molale-Tom (lesego.molaletom@nwu.ac.za) and Ms Roopa (22018506@nwu.ac.za)

The Interesting Fact Box



Water bear uses fluorescent 'shield' to survive lethal UV radiation



Great Barrier Reef has lost half of its corals since 1995



Plastic waste into hydrogen and high-value carbons



Blood Type and COVID-19



Organisms That Eat Viruses as a Food Source



Prioritizing where to restore Earth's ecosystems



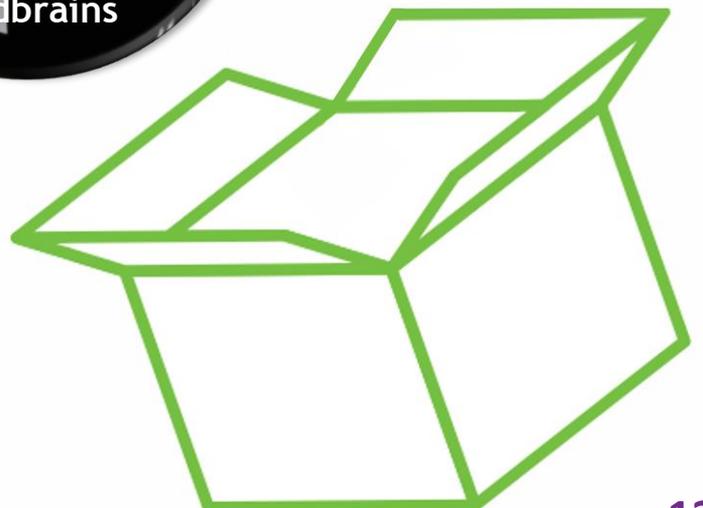
Brainiacs, not birdbrains



Water on Mars: discovery of three buried lakes



Touch and taste? It's all in the tentacles



Photography Competition Need-to-Knows

A panel of judges were all invited to select the winning image under each specified category. Images were judged blindly based on a pre-set list of criteria.

To avoid bias, judges were encouraged to take into consideration the abilities associated with different cameras (i.e. cell phone camera vs. professional camera).

For further comparability and fairness, microscopy images were grouped under categories “SEM & TEM Microscopy” and “Light- & Stereo (Compound) Microscopy”.

Creativity and originality of **image titles** contributed a fair amount to the overall point allocation.

In short, images were further judged based on:

- **Impact** – The sense or intense emotion one gets upon viewing an image for the first time.
- **Creativity** – The original, fresh, and external expression of the maker’s art or imagination by using the medium to convey an idea, message or thought.
- **Storytelling** – The image’s ability to deliver a message or evoke the imagination.
- **Technical Excellence** – The quality of the image e.g. sharpness, exposure, processing, and correct colour.
- **Focus** – The sharp and detailed portion of the main subject of the image.
- **Colour Balance** – An image in which the tones work together, effectively supporting the image, can enhance its emotional appeal.
- **Lighting** – Defines dimension and shape in an image. The lighting can be natural or artificial and should enhance the image.
- **Composition** – Bringing all visual elements together to express the purpose of the image. Proper composition holds the viewer in the image and prompts the viewer to look where the creator intends.
- **Centre(s) of Interest** – The point(s) on the image where the viewer should pause as they view the image.
- **Subject Matter** should always be appropriate to the topic or story being told in an image.

When viewing the winning images that follow:

Exposure Time
– period of
exposure to light

ISO Speed – light
sensitivity

Camera settings are depicted as e.g. 1/40s f/2.9 ISO180 6.2mm.

F-Stop –
aperture size

Focal Length – distance
between the lens optical
centre and camera sensor

Prizewinner



Desolation - Verlatenheid by Theunis Meyer

Locality: Atacama Desert, Chile, Valle De La Luna, salt desert
west of San Pedro de Atacama

Date: 7 April 2014

Camera type: Canon EOS 7D

Settings: 1/80s f/5.6 ISO400 38mm





Hemel op Aarde by Adri Joubert

Locality: Cintsa East

Date: 29 October 2020

Camera type: Samsung A51 (SM-A515F)

Settings: 1/1449s f/2 ISO32 4.6mm



Early morning beauty by Adri Joubert

Locality: Cintsa East

Date: 27 October 2020

Camera type: Samsung A51 (SM-A515F)

Settings: 1/8065s f/2 ISO32 4.6mm

[See more from this category](#)

Prizewinner



Windscreen Wiper by Louis du Preez

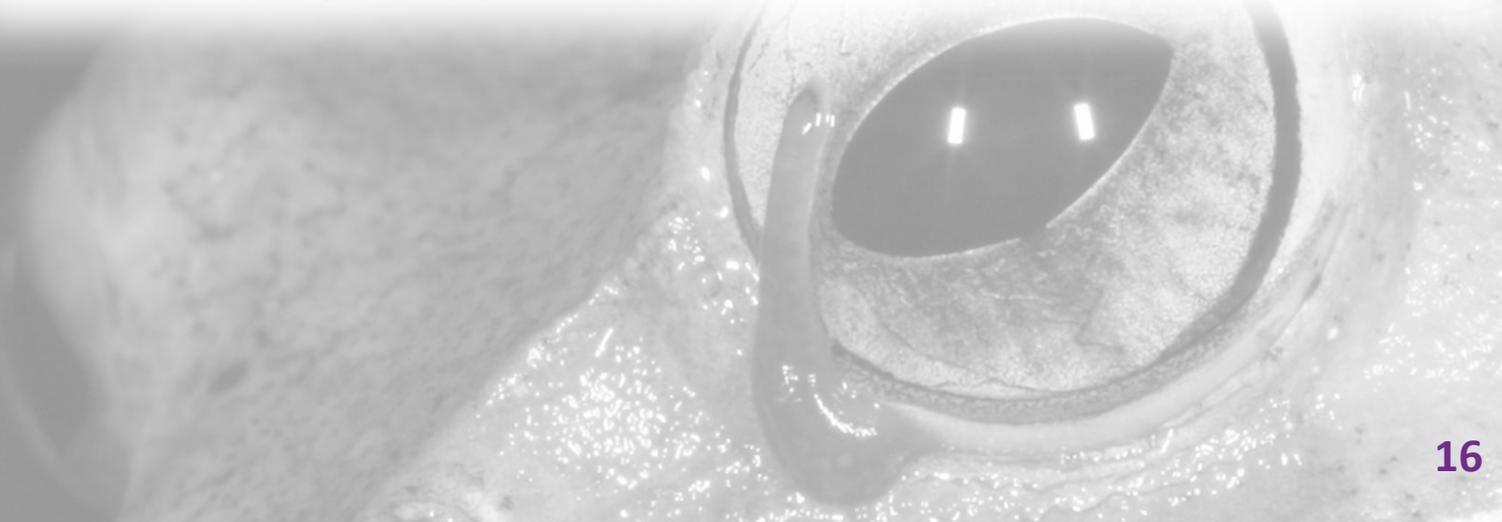
Description: Madagascar bright-eyed frog (*Boophis madagascariensis*)
with leech on eye

Locality: Madagascar

Date: 14 Aug 2008

Camera type: Canon EOS 20D

Settings: 1/60s f/25 ISO100 100mm





Gorgeous colours in the Kalahari

by Henk Bouwman

Species:

Little Bea-eater / Klynbyvreter (*Merops pusillus*)

Locality:

Molopo Nature Reserve

Date:

10 July 2004

Camera type:

Nikon Coolpix E4500

Settings:

1/400s f/6.2 ISO100 24.6mm



The pandemic is hard

by Louis du Preez

Species:

Forest Rain frog (*Breviceps sylvestris*)

Locality:

Soutpansberg Mountain

Date:

October 2020

Camera type:

Canon EOS 5D Mark IV

Settings:

1/60s f/32 ISO100 100mm



[See more from this category](#)

Prizewinner



The tongue that stares

by Nico Smit

Species:

Blacktail sea bream (*Diplodus capensis*) and tongue replacement isopod (*Ceratothoa famosa*)

Description:

Live fish and isopod in a marine photographic tank

Locality:

Chintsa West, Eastern Cape

Date:

27 October 2020

Camera type:

Canon EOS 5D Mark IV

Settings:

1/60s *f*/24 ISO200 100mm

[Additional comments](#)



Twisting tongue

by Milad Rashidifard

Locality:

Pilanesberg National Park

Date:

September 2019

Camera type:

Canon EOS 550D

Settings:

1/500s f/8 ISO320 300mm



The suck zone

by Marié du Toit

Species:

Dodder

Locality:

Kleinmond, Western Cape

Date:

26 December 2011

Camera type:

Sony DSC-H50

Settings:

1/40s f/2.7 ISO160 5.2mm

[See more from this category](#)



Sepia gullies by Carina Verster

Species visible in photo: Kelp gull (*Larus dominicanus*)

Locality: Tsitsikamma National Park

Date: 3 March 2018

Camera type: NIKON D5300

Settings: 1/4000s f/10 ISO250 102mm





Sustainable development

by Daniël Düring

Locality:

En route to Everest Base Camp, Nepal

Date:

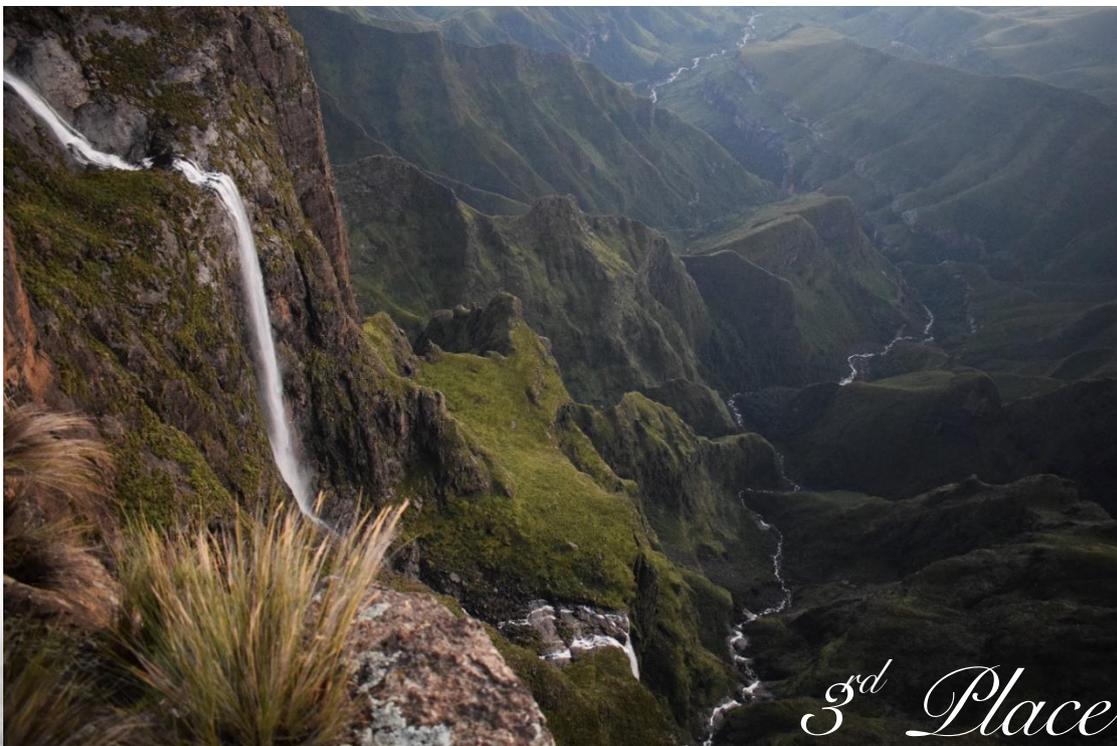
December 2011

Camera type:

Panasonic DMC-TZ 8

Settings:

1/500s f/5.6 ISO200
4.1mm



Ribbon of Life

by Carina Verster

Locality:

Top of Tugela falls, Northern Drakensberg

Date:

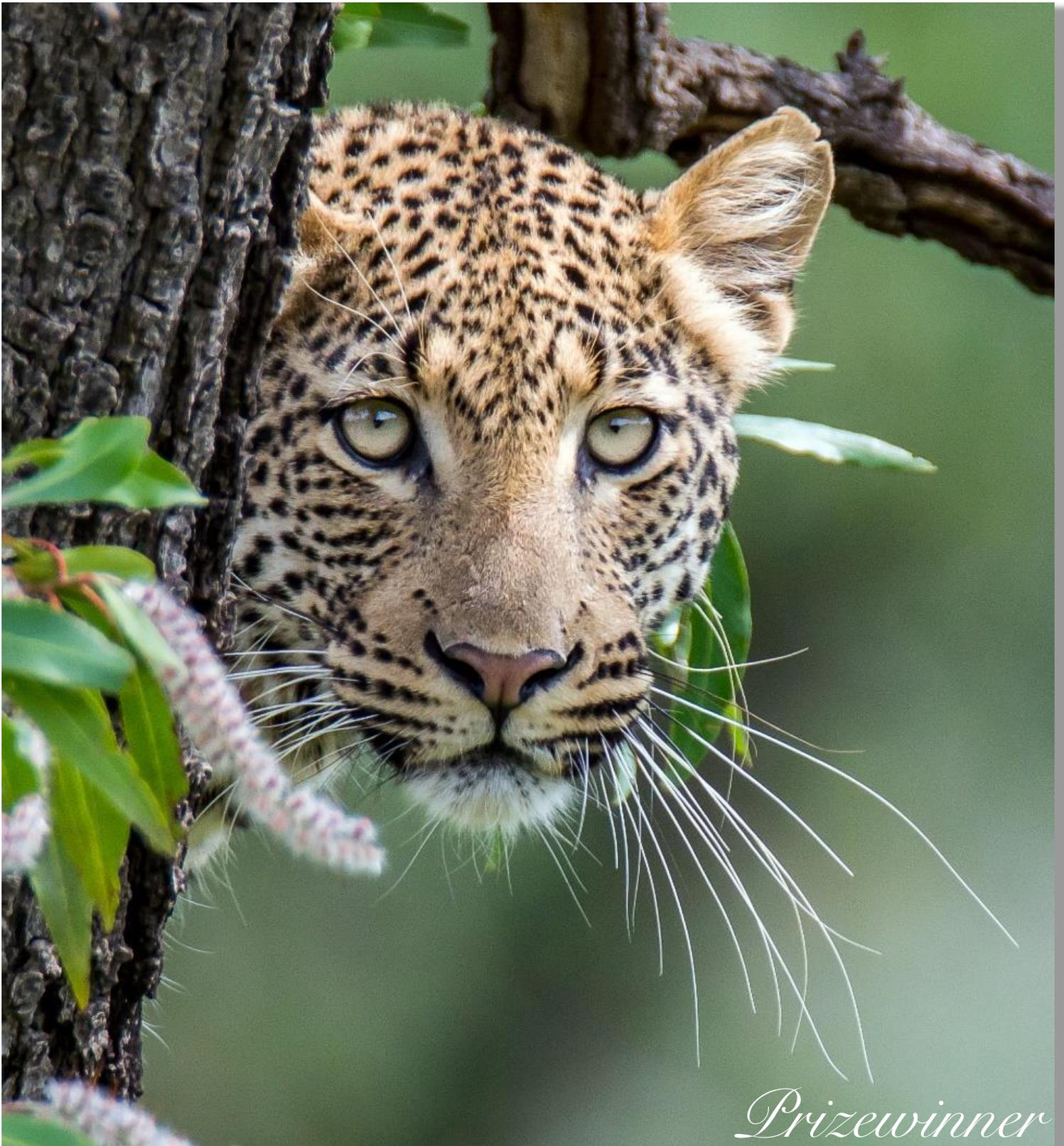
1 March 2020

Camera type:

NIKON D5300

Settings:

1/125s f/3.5 ISO3200
18mm



Peek-a-boo by Dustin van Helsdingen

Locality: Pilanesberg National Park

Date: January 2017

Camera type: NIKON D5300

Settings: 1/1000s f/6.3 ISO800 600mm



***Iris japonica* showing off its dazzling orange and purple spots**

by Marcell Slabbert

Locality:
Potchefstroom, South Africa (North-West
University Potchefstroom Campus)

Date:
23 September 2020

Camera type:
Samsung Galaxy A7 2018 (SM-A750F)

Settings:
1/1066s f/1.7 ISO40 3.93mm

Untitled by Bernardine Altenroxel

Description:

Flower mantis and brown-veined white butterfly (*Belenois aurota*)

Locality:

Lekgalameetse Nature Reserve, Limpopo

Date:

5 February 2020

Camera type:

Canon EOS 70D

Settings:

1/2500s f/9 ISO640 250mm



[See more from this category](#)

Prizewinner



So over COVID by Kirsty Kyle

Locality: Madikwe Game Reserve

Date: 6 February 2020

Camera type: NIKON D3100

Settings: 1/250s f/13 ISO800 370mm





Purple fangs by Annika Kruger

Species:

Blue tulp (*Moraea tripetala*)

Locality:

Parys

Date:

2 October 2020

Camera type:

Samsung Galaxy A51 (SM-A515F)

Settings:

1/50s f/2 ISO80 4.6mm

Spring in the lab by Ilzé Horak

Species:

Gram-negative bacillus
(*Serratia marcescens*)

Locality:

The Environmental Laboratory (222),
Microbiology, Building E6, North-West
University, Potchefstroom Campus

Date:

20 May 2018

Camera type:

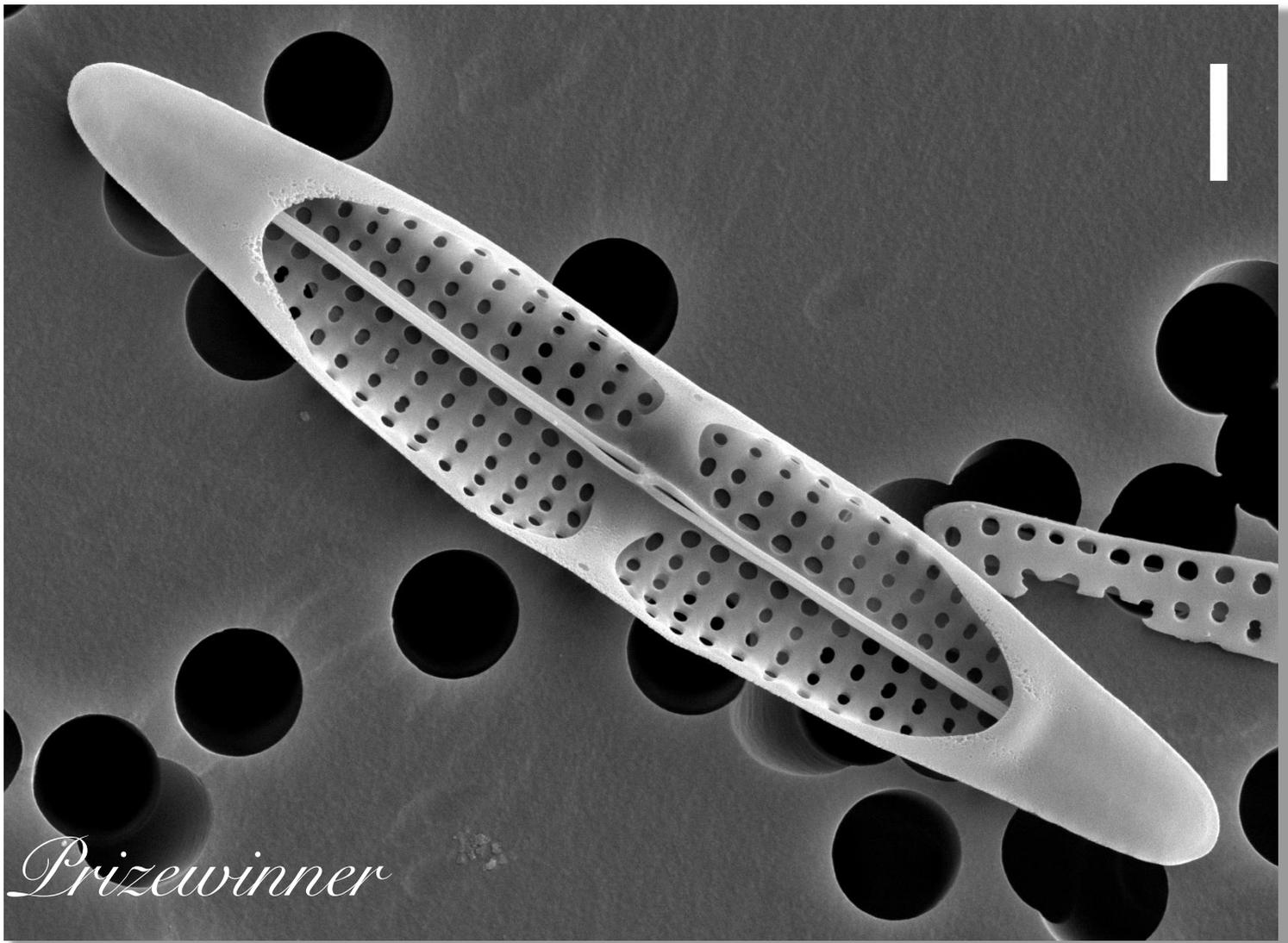
Samsung A5 (SM-A520F) 15.9MP

Settings:

1/33s f/1.9 ISO160 3.6mm



[See more from this category](#)



Back to the present by Roksana Majewska (Staff Member)

Description: A yet undescribed diatom species extracted from a 300 years old skin sample of the extinct sirenian, Steller's sea cow (scale bar = 1 μm)

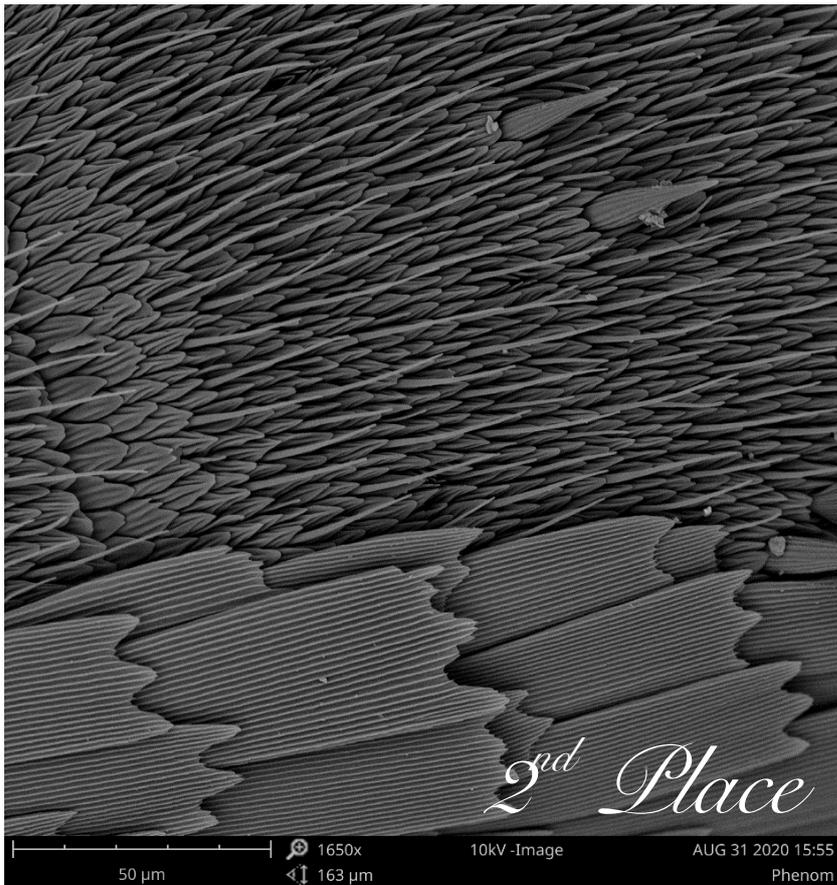
Species: An epizoic diatom, *Tursiocola* spp.

Lab: Centre for High Resolution Transmission Electron Microscopy, Nelson Mandela University

Date: 4 November 2019

Microscope model: JEOL JSM-7001F (JEOL, Tokyo, Japan)

Settings: 5kV; WD = 4.9 mm



Butterfly antennae

by Willie Landman (Student)

Species:

New butterfly species (Lycenidae), still in the process of being described

Locality:

Zimbabwe

Date:

31 August 2020

Camera type:

Desktop Phenom Scanning Electron Microscope (SEM)

Total magnification:

1650X

[Additional comments](#)

Butterfly scale tip

by Willie Landman (Student)

Species:

New butterfly species (Lycenidae), still in the process of being described

Locality:

Zimbabwe

Date:

31 August 2020

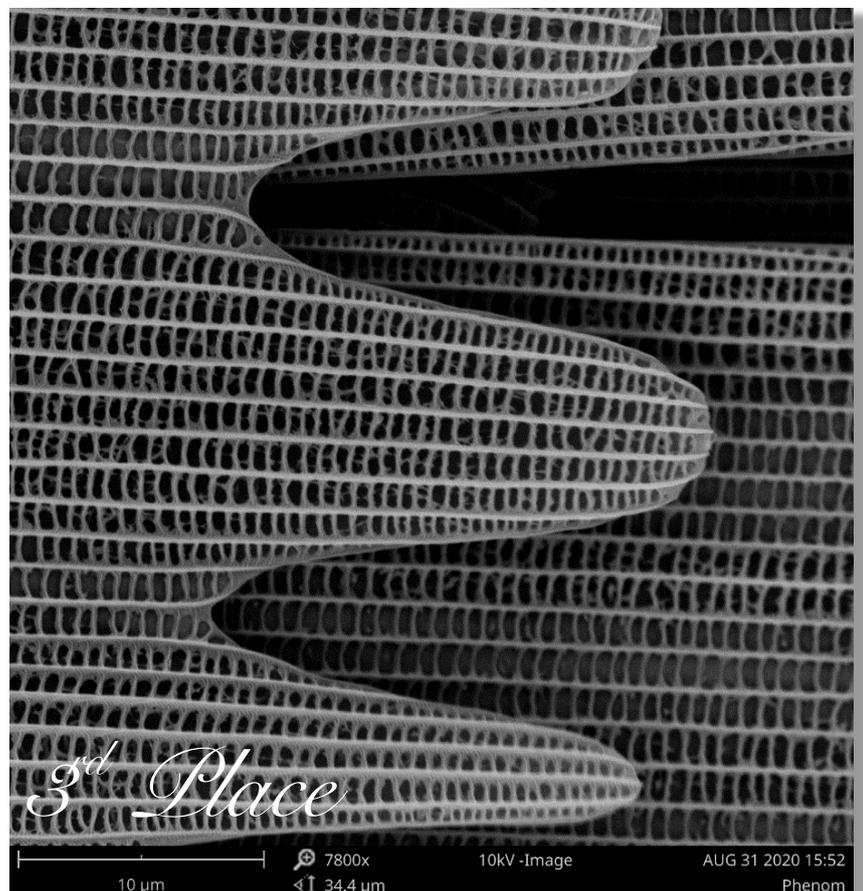
Camera type:

Desktop Phenom Scanning Electron Microscope (SEM)

Total magnification:

7800X

[Additional comments](#)



[See more from this category](#)



[See full resolution](#)

Kankana manampoka by Willie Landman (Student)

Species: Polystome parasite (*Kankana manampoka*). It can be found in the urinary bladder of a Malagasy frog (*Platypelis polycaris*)

Date: 2017

Camera: Nikon DS-Ri1 digital camera

Microscope model: Nikon NiE compound microscope

Objective Lens Magnification: 20X

Total Magnification: 120X

Preparation: The specimen was fixed in 10% neutrally buffered formalin, stained with acetocarmine, dehydrated, cleared in xylene and mounted in Canada balsam

Technique: Differential Interference Contrast (DIC)

[Additional comments](#)

Pleasure or pain by Roman Svitin (Staff)**Species:**

Parasitic nematode (*Oswaldocrusia filiformis*), found in the intestine of the common toad (*Bufo bufo*) in Ukraine

Lab:

G29, AACRG, North-West University, Potchefstroom Campus

Date:

2016

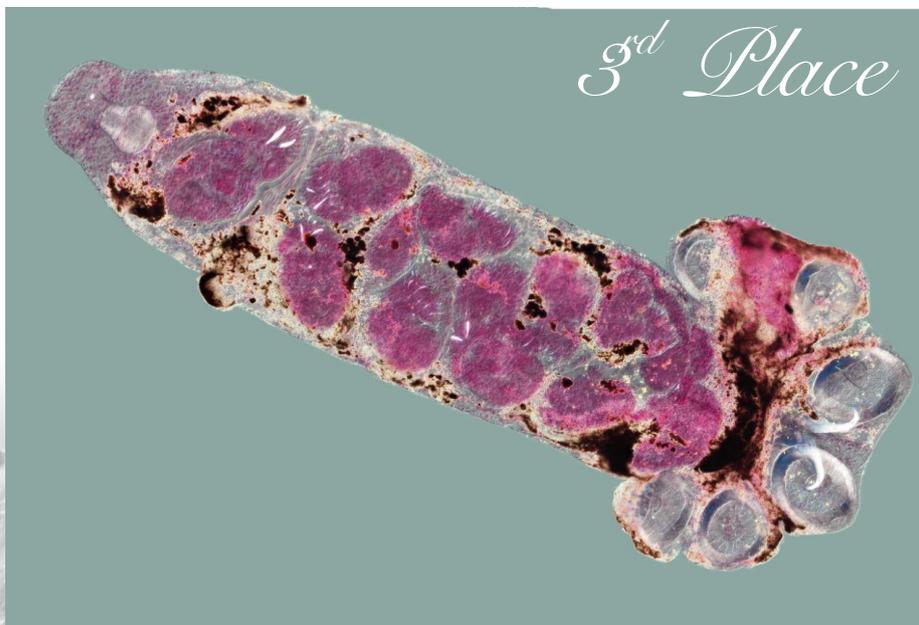
Camera type:

ZEISS Axio Camera

Microscope type:

ZEISS Axio Imager compound microscope

[Additional comments](#)

Madapolystoma biritika by Willie Landman (Student)**Species:**

Polystome parasite (*Madapolystoma biritika*). It can be found in the urinary bladder of a Malagasy frog *Mantella madagascariensis*

Date:

2017

Camera type:

Nikon DS-Ri1 digital camera

Microscope model:

Nikon NiE compound microscope

Objective Lens Magnification:

20X

Total magnification:

120X

Preparation:

The specimen was fixed in 10% neutrally buffered formalin, stained with acetocarmine, dehydrated, cleared in xylene and mounted in Canada balsam

Technique:

Differential Interference Contrast (DIC)

[See full resolution](#)

[Additional comments](#)

[See more from this category](#)

Acknowledgements

We would like to thank the following people who have made invaluable contributions towards the *Summer* edition of ENVIRA:

- Prof Carlos Bezuidenhout for his Director's message.
- All who entered the ENVIRA photography competition and submitted their outstanding photo contributions.
- All judges of photo entries: Prof Stefan Siebert, Mr Chris van Niekerk, Dr Anine Jordaan, Ms Elané Lubbe.

All your contributions are highly appreciated.

We are excited to share more valuable research articles in the upcoming *Autumn* edition, 2021.

Frances and Clarissa

Photo credits:

Staff Landscape Category: Adri Joubert; Henk Bouwman; Hilde Pienaar; Jauneé Cilliers; João Silva; Jonathan Taylor; Karen Puren; Kristel Fourie; Marié du Toit; Milad Rashidifard; Ncobile Nkosi; Nico Smit; Roksana Majewska; Sandra Barnard; Theunis Meyer.

Staff Macro-organism Category: Henk Bouwman; João Silva; Jonathan Taylor; Louis du Preez; Marié du Toit; Micky Josipovic; Sanet Janse van Vuuren.

Staff Funny Features and Creatures Category: Jauneé Cilliers; João Silva; Madeleen Struwig; Marié du Toit; Milad Rashidifard; Nico Smit; Roksana Majewska.

Students Landscape Category: Bernard Raath; Carina Verster; Celia Cloete; Chané de Bruyn; Daniël Düring; Danitza Klopper; Gerhard Botha; Gerhard Engelbrecht; Henno Havenga; Ilzé Horak; Jadia Hoffman; Kirsty Kyle; Leani Bothma; Lohan Bredenhann; Marcell Slabbert; Murendeni Kwindu; Nanette van Staden; Refentse Phetla; Tebatso Moloto.

Students Macro-organism Category: Annika Kruger; Bernardine Altenroxel; Carina Verster; Celia Cloete; Chané de Bruyn; Charné Blignaut; Daniël Düring; Dustin van Helsdingen; Gerhard Engelbrecht; Ilzé Horak; Jerida Maphuta; Kirsty Kyle; Lohan Bredenhann; Marcell Slabbert; Marlize Muller; Marné Pretorius; Nanette van Staden; PR Janse van Rensburg; Soané Ludick; Tebatso Moloto; Willie Landman; Wynand Muller.

Students Funny Features and Creatures Category: Annika Kruger; Carina Verster; Chané de Bruyn; Charné Blignaut; Ilzé Horak; Jadia Hoffman; Kirsty Kyle; Leani Bothma; Lohan Bredenhann; Marlize Muller; PR Janse van Rensburg; Refentse Phetla.

SEM- and TEM Microscopy: Louis du Preez; Roksana Majewska ; Willie Landman.

Light- and Stereo-Microscopy: Celia Cloete; Ilzé Horak; Leani Bothma; Refentse Phetla; Roman Svitin ; Sanet Janse van Vuuren; Willie Landman.

Additional photos were obtained from websites providing freely available stock photos: <https://unsplash.com>; <https://pixabay.com>; <https://www.pexels.com>; <https://www.freeimages.com>; <https://www.canva.com>.

