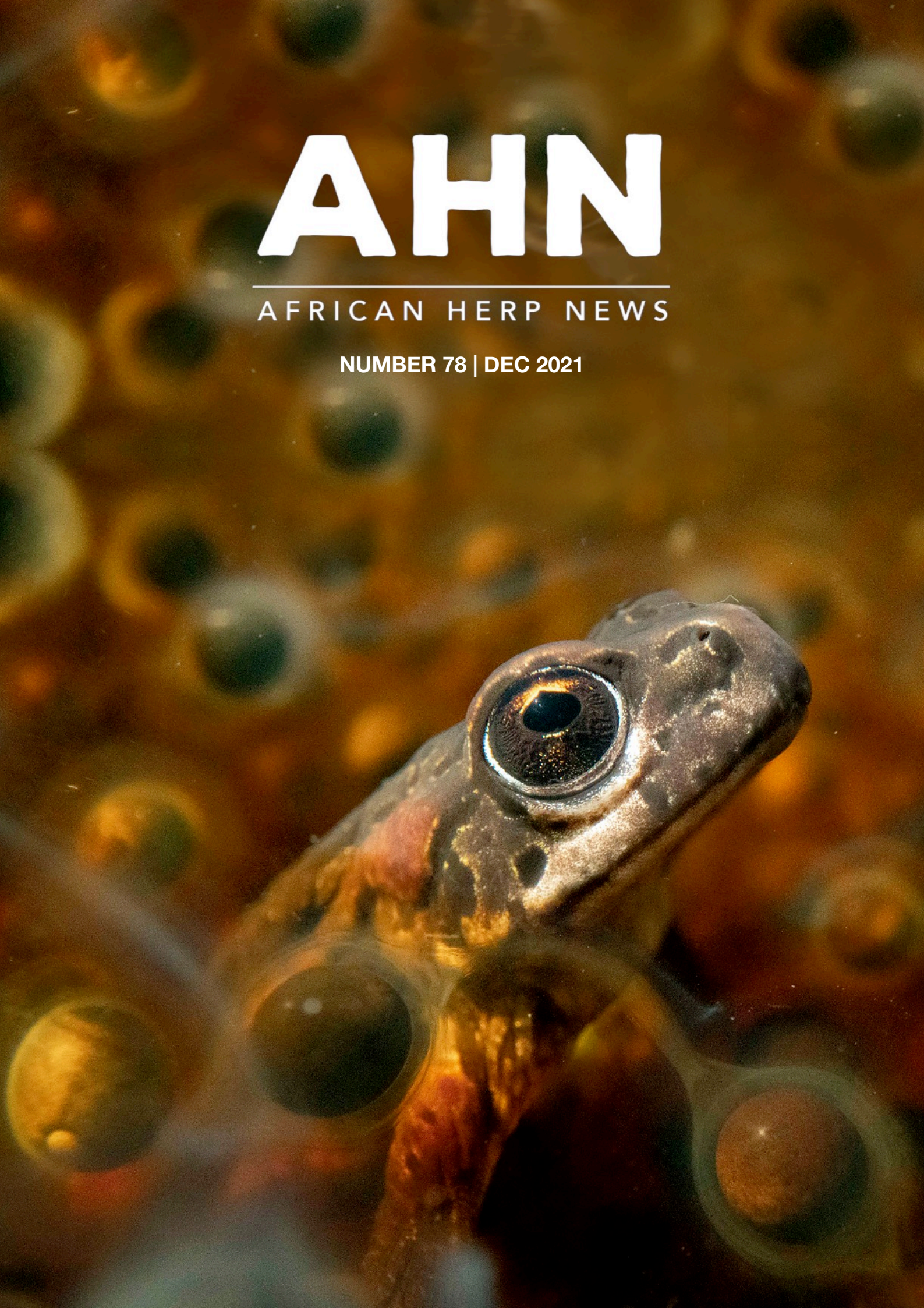
AHN

AFRICAN HERP NEWS

NUMBER 78 | DEC 2021



HAA | HERPETOLOGICAL ASSOCIATION OF AFRICA
www.africanherpetology.org

FOUNDED 1965

The HAA is dedicated to the study and conservation of African reptiles and amphibians. Membership is open to anyone with an interest in the African herpetofauna. Members receive the Association's journal, African Journal of Herpetology (which publishes review papers, research articles, and short communications – subject to peer review) and African Herp News, the Newsletter (which includes short communications, natural history notes, book reviews, bibliographies, husbandry hints, announcements and news items).

NEWSLETTER EDITOR'S NOTE

Articles shall be considered for publication provided that they are original and have not been published elsewhere. Articles will be submitted for peer review at the Editor's discretion. Authors are requested to submit manuscripts by e-mail in MS Word '.doc' or '.docx' format.

COPYRIGHT

Articles published in the Newsletter are copyright of the Herpetological Association of Africa and may not be reproduced without permission of the Editor. The views and opinions expressed in articles are not necessarily those of the Editor.

NEWSLETTER SUPPORT

Darren Pietersen, Acting Co-Editor
Jody Barends, Administrative Support

COVER PHOTOGRAPH

Capensibufo rosei Rose's Mountain Toadlet (Table Mountain, Western Cape)
Image Courtesy: Dr. Jeremy Shelton

:: COMMITTEE OF THE HAA ::

CHAIRPERSON
Krystal Tolley, South African National Biodiversity Institute, Kirstenbosch Research Centre, Cape Town, South Africa.
Email: chairman@africanherpetology.org

SECRETARY
Melissa Petford, South African National Biodiversity Institute, Kirstenbosch Research Centre, Cape Town, South Africa.
E-mail: secretary@africanherpetology.org

TREASURER
Jens Reissig, P.O.Box 62, Kelvin, Sandton 2054, South Africa.
Email: treasurer@africanherpetology.org

JOURNAL EDITOR
Ché Weldon, Unit for Environmental Sciences and Management, North-West University, Potchefstroom 2522, South Africa.
Email: che.Weldon@nwu.ac.za

NEWSLETTER EDITOR
Jessica da Silva, South African National Biodiversity Institute. Kirstenbosch Research Centre, Cape Town, South Africa.
E-mail: newsletter@africanherpetology.org

WEBPAGE/SOCIAL MEDIA
Jeanne Tarrant, Endangered Wildlife Trust, 27 Austin Road, Glen Austin, Midrand, Private Bag, X11, Gauteng
E-mail: media@africanherpetology.org

STUDENT SUPPORT
Hanlie Engelbrecht, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, South Africa.
E-mail: hanlie.Engelbrecht@wits.ac.za

CONFERENCE CONVENOR
Chris Cooke, Hoedspruit Reptile Centre, R527, Blyderus, Hoedspruit 1380, Limpopo, South Africa
Email: reptile@yebo.co.za

HAA AWARDS
Bryan Maritz, Department of Biodiversity and Conservation, University of Western Cape, South Africa.
E-mail: awards@africanherpetology.org

AHN

CONTENTS

AHN

CONTENTS

AHN

EDITORIAL

This issue marks my last as Editor for African Herp News. It has truly been a privilege and a pleasure to serve you and this association in this capacity for the past 5 years. I have learned so much in this role about the editorial process, herpetology and, most memorably, about so many of you through your work and our correspondences.

Some may measure the success of a publication by the number of pages that are printed, the number of citations it receives, and the number of manuscripts that are submitted. I am happy to say, we have seen steady growth in all of these aspects during my term; however, personally, the truest measure of success has come from the growing trust I have seen and heard among readers. This is not a quantitative measure, but it does speak to the value of this publication. I thank all authors and reviewers for your time, contributions and commitment to the newsletter, which has helped grow this trust. I look forward to reading what more you have to share in the issues to come. Thank you also to the HAA committee for your support, expertise, and input throughout my term. Without all of you, the newsletter would not be where it is today.

With that said, I am so excited to see where the next phase of the newsletter takes us. I leave you in the very capable hands of Dr Darren Pietersen. For those of you who are not aware, Darren has been assisting me with the newsletter for quite some time – first as my Associate Editor, and more recently as Acting Co-Editor. He has been invaluable to me with his profound knowledge of African herps, attention to detail, his willingness to assist with any and all aspects of the newsletter, and his commitment to the HAA. I am confident Darren will do an exemplary job as Newsletter Editor.

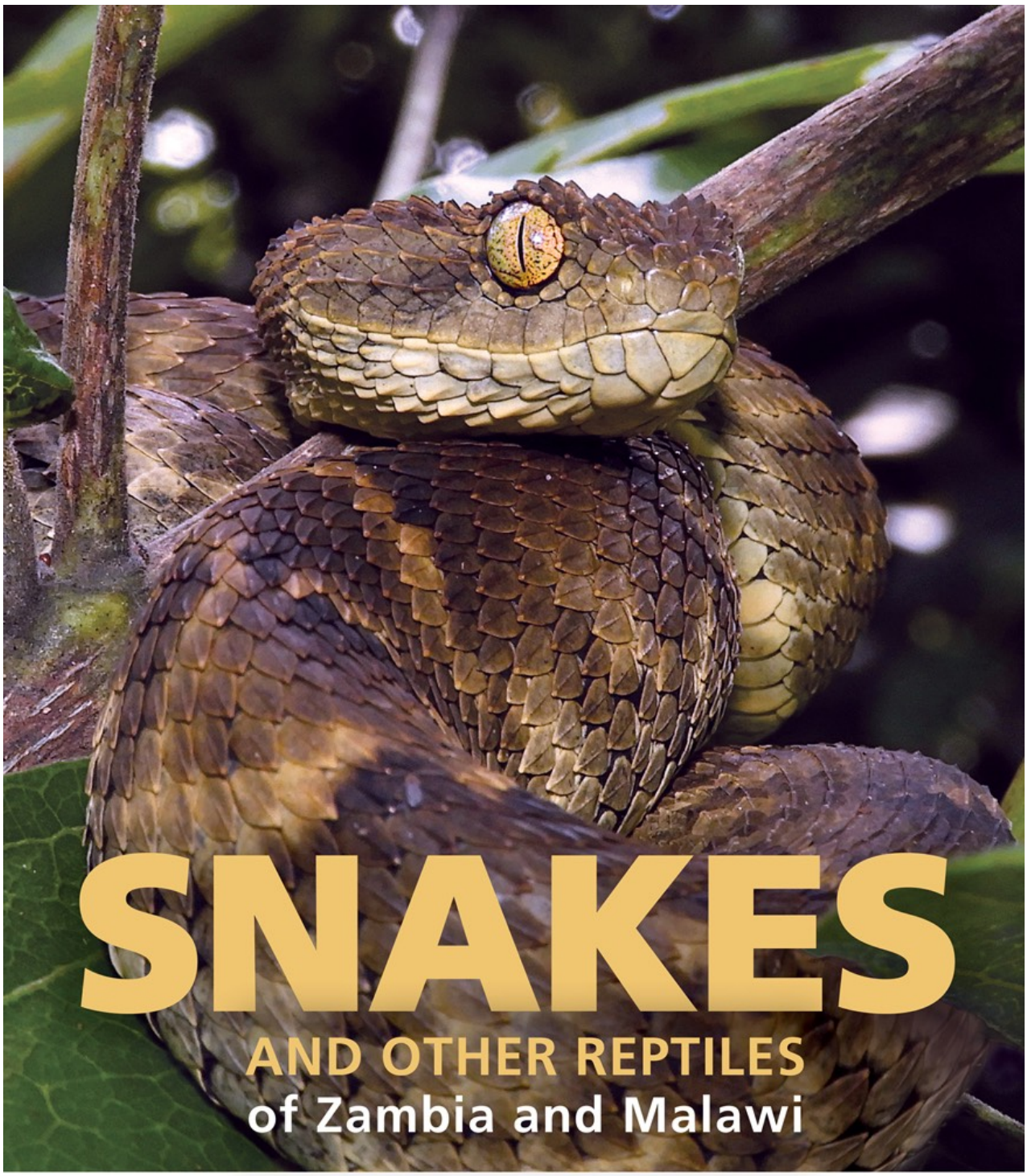
I leave you with this statement – the motto of the HAA – *Ex Africa Semper Aliquid Novi* (out of Africa there is always something new). Keep exploring and keep reporting your observations.

Jessica da Silva
Editor


15th HAA Conference website coming soon
Ex Africa semper aliquid novi
HERPETOLOGICAL ASSOCIATION OF AFRICA
Founded 1965
January 2023 / Hoedspruit, Limpopo
http://africanherpetology.org/

AHN ANNOUNCEMENTS

PRESS RELEASE



PRESS RELEASE

Penguin Random House South Africa

STRUIK NATURE

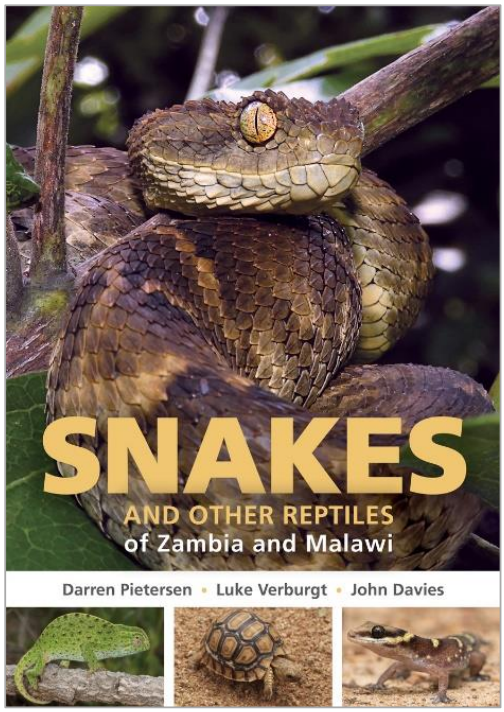
PRESS RELEASE
OCTOBER 2021

FIRST OF ITS KIND FOR THE REGION

FOR IMMEDIATE RELEASE

Snakes and Other Reptiles of Zambia and Malawi

DARREN PIETERSEN, LUKE VERBURGT & JOHN DAVIES



Zambia and Malawi are home to 240 known snake, lizard, terrapin, tortoise and crocodile species. *Snakes and other Reptiles of Zambia and Malawi* is the first field guide to describe every species of reptile known to occur in this region – including 14 endemics and several new discoveries.

- Comprehensive descriptions of each order, suborder, family, genus and species.
- Species descriptions cover identifying features, behaviour, prey and predators, reproduction, range, and danger to humans.
- Accounts are supported by stunning colour photographs and up-to-date distribution maps that draw on over 16,000 recorded observations.
- Dichotomous identification keys guide users to the correct genus and species.
- Introduction includes clear diagrams of morphological features and unpacks the region's biogeography and diverse habitat types, different venom types and the basic principles of snakebite treatment.

This comprehensive field guide – the first of its kind for the region – will appeal to both experienced herpetologists and nature enthusiasts in general.

Darren Pietersen is a herpetologist specialising in African reptiles and amphibians. He is research director at the non-profit Tikki Hywood Foundation, and a research associate in the Department of Zoology at the University of Pretoria. **Luke Verburgt** is a zoological scientist specialising in herpetology, and has worked across 20 African countries. He is director of the consultancy Enviro-Insight and extraordinary lecturer at the University of Pretoria. **John Davies** is a project coordinator at the Endangered Wildlife Trust. He has spent 12 years in the tourism industry, leading tours to at least 15 African countries.

ISBN:9781775847373|**RRP**:R430.00
ePUB: 9781775847380|**RRP**: R390.00

www.struiknatureclub.co.za / www.penguinrandomhouse.co.za

CHAIRMAN'S REPORT
2020-2021

With the start of 2020 came the hand-over of several committee positions: the Secretary portfolio from Buyi Makhubo to Melissa Petford, the Awards portfolio from Mike Bates to Bryan Maritz and the Media and Public Engagement portfolio from Bryan Maritz to Jeanne Tarrant. All other committee members continued in their current portfolio positions. The initial priority discussions were around the next HAA conference which had been scheduled for Kimberley in September 2021. However, due to the covid crisis the conference was postponed to early 2023 and the venue was shifted to Hoedspruit. In addition, the committee decided to set up a Standard Operating Procedure for conferences that would provide guidelines for future conference organisers. Given that each conference is led by a different team, and sometimes those teams have no experience organising a conference, this SOP was considered a priority.

The HAA Committee also received a query from one member regarding ensuring inclusivity. This member was encouraged to write an Opinion article for the African Herp News (African Herp News 74:40-43), and the committee decided it was our responsibility to also provide a brief statement on the HAAs position to reassure members that the HAA supports inclusivity within the society (African Herp News 74:5–7). The committee then decided that we should essentially ask the members how they think we are doing, and what they see as gaps. For that, a member satisfaction survey was sent out and this received quite a few responses, the overwhelming majority of which were positive (African Herp News 74:8–19). The gaps specified were around the difficulty for overseas payments (i.e., lack of credit card facility) and requests for online platforms where members could leave feedback. The credit card issue is being dealt with, as the HAA is engaging in becoming an officially recognised not-for-profit organisation, which would then allow us to register for a credit card facility. Regarding the online platform, a 'Feedback Box' has been added to the website (https://africanherpetology.org/haa-contact/feedback-box/) where members can provide inputs for the committee.

Other issues brought up by members were the need for more, non-academic communications and the need for more contributions from across Africa. Regarding the non-academic communications, members are strongly encouraged to submit their short notes to African Herp News or post their communications on our social media platforms. We rely on these types of contributions coming from the herpetology community, and we welcome these non-academic contributions.

The committee is fully aware that the H.A.A. is essentially seen as a “South African” society instead of an African one and has been hoping to address this issue for many years. Indeed, the majority of members are based in South Africa and many contributions to the African Journal of Herpetology and to African Herp News are from South African-based researchers or herpetologists (see African Herp News 75:23–32). The question has been how to encourage other African-based researchers to become involved, and how to get journal and newsletter contributions from those researchers. As a step toward resolving this, the Editorial Board of the African Journal of Herpetology has been expanded to include researchers from the different regions of Madagascar (see Editorial Board Report, This issue: 15-19). This initiative is new, but we hope that the representation from across Africa will broaden the contributions as well as result in a more representative membership in the society.

Many other new initiatives were started in the last two years, and these are covered under individual portfolio reports in this issue. To name a few, there were webinars, we now have a YouTube Channel, a Twitter account was set up, African Herp News content is now all available on our website, we made several awards for research funding, and a Slack Channel was set up primarily for students. We have also sent out a survey relating to how members perceive the performance of the journal and newsletter (see preliminary results under the journal editor’s report [this issue: 13-14 and the newsletter report [This issue: 20). We realise we have more work to do, and we welcome your suggestions and input.

The committee values the opinions of the members, and we would like to hear from you. During the last term, the HAA Committee continued to meet at least once a quarter (or even more frequently), and we expect that these frequent meetings will continue into this next term (2022–2023). We have felt privileged to represent the membership and value the trust given to us to move African herpetology forward.

Krystal Tolley
Chairman, Herpetological Association of Africa

TREASURER'S REPORT

Dear HAA Members!

The financial position that the Herpetological Association of Africa finds itself in currently is something to be proud of. At the end of October 2021 our closing balance in our cheque account stood at R 468,556.95.

If we look at the past financial year which ended on the 28th of February 2021, we made a profit of R 25,475.91 for that specific financial year:
Opening Balance on 01 March 2020 - R 472,045.77
Closing Balance on 28 February 2021 - R 497,521.68

It is great to see, that even in these difficult times which we all face, the association has managed to keep its income constant. We thank all our members for this and we hope this will continue in the years to come.

The committee has decided that we should go ahead and invest some of our funds in an interest bearing investment account and the best options for this are currently being investigated.

Once we receive the latest audited financial statements, these will be published in the relevant issue of African Herp News for all to see.

Wishing everyone well for the future.

Jens Reissig
Treasurer, Herpetological Association of Africa

SECRETARY'S REPORT

Current membership as of September 2021 consists of 159 members, with 119 from African countries and 40 from non-African countries. This is a slight decrease from September 2019, as reported at the 14th HAA conference, despite an increase in membership during 2020. The decrease in membership for 2021 is likely due to the postponement of the 15th HAA conference, as conference years usually see an increase in membership. During 2020 we had nine new members join the association (three students and six professionals (one overseas)), and as of September 2021, this year saw 14 new members (five students and nine professionals).

During the last quarter of 2020, we introduced a new online system for membership registration for both new members and renewals. A link to our online form can be found on our website and here. The introduction of this online form is to try and make renewals and new registrations easier than with the previous word document application forms. Members are still required to send their proof of payment to secretary@africanherpetology.org upon submission of their online application.

All members will receive an email one month before their membership is due to expire and a follow-up seven days after their membership has lapsed. If a renewal is not processed, then said member will be removed from our database. I would like to thank all of our current members for their continued support of the association.

	September 2019	September 2020	September 2021
African members	132	144	119
Non-African members	36	46	40
Total membership	168	190	159

Melissa Petford
Secretary, Herpetological Association of Africa

JOURNAL EDITOR'S REPORT

Reporting period: October 2019–November 2021

Advances made to journal scope

In an effort to increase the membership of the H.A.A. and with that a greater readership, citation, submission rate, etc. of the African Journal of Herpetology (A.J.H.), the following decisions were made and ratified at an HAA meeting:

- to expand the topics covered by A.J.H. to now include parasitology, diseases (eg. Weldon et al. 2020), and major biodiversity surveys.
- to bring back publication types such as Short Communications (eg, Maritz et al. 2021) and Book Reviews (eg, Netherlands 68(2): 2019).
- to include abstracts in other commonly spoken languages in Africa (eg. Baptista et al. 2020 – in Portuguese).
- to increase representation on the editorial board to include persons from the major regions in Africa and surrounding islands. The following persons who accepted their nomination were nominated by the HAA committee, contacted by the editor, and followed up by the Editorial Board chairperson. The editorial team and the HAA welcomes you and thanks you for your commitment.

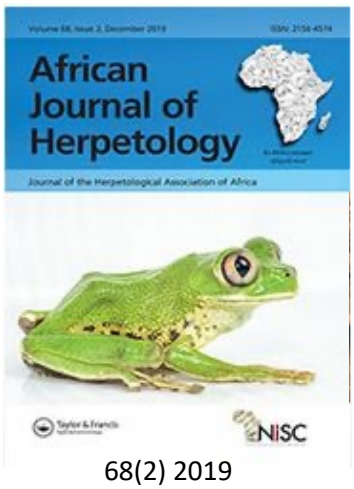
Name	Region	Contact
Beryl Bwong	East Africa	akothbwong@gmail.com
Hassan El Mouden	North-Africa	elmouden@uca.ac.ma
AB Onadeko	West Africa	onadeko2002@yahoo.com
Mathias Behangana	Central Africa	mbehangana@gmail.com
Fanomezana Ratsoavina	Indian Ocean	fanomezanarts@gmail.com

Associate editors

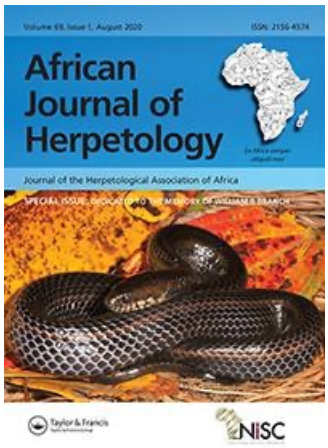
The three-year term of the associate editors (AEs) who were appointed in 2018 lapsed in 2021. The Terms of Reference for AEs stipulates that editors are eligible for a second consecutive term. All of the editors were contacted with regards to their availability for a second term and none of the AEs declined the invitation and will therefore serve a second term that will end in September 2024.

Published journal issues

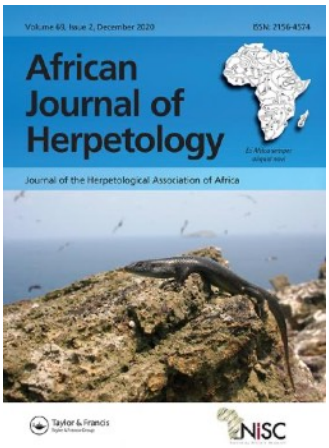
Four issues have appeared during the reporting period namely: 68(2): 2019, 69(1): 2020, 69(2): 2021, and 70(1): 2022. Page quotas were filled with each volume. A fifth issue 70(2): 2021 is published online and the hard copy will be published in December 2021. The content for the first issue of 2022, volume 71, issue 1 has already been prepared and will be published online early in January 2022, with the hard copy scheduled to follow in June 2022. To deal with the surplus of content that is currently in the ScholarOne system, and to prevent delays of publication I suggest that the HAA plans for a third issue in 2022. This will have to be negotiated with Taylor & Francis and subsequently NISC on an *ad hoc* basis.



68(2) 2019



69(1) 2020



69(2) 2021

70(1) 2022

Special edition – Bill Branch

Sadly, Bill Branch passed away in 2018, and a special edition commemorating his life and work was published in A.J.H. 69(1). The issue received six contributions that included a tribute, four full-length articles, and a bibliography.

Journal downloads

The year following the introduction of the "online early" publication, 2020, saw a record number of article downloads. Downloads for 2021 by September were well below that of 2020, and it's too early to make a direct comparison with downloads from 2019. Data obtained from Taylor & Francis.

	Number of downloads		
	2019	**2020**	**2021**
Quarter 1	-	1935	1710
Quarter 2	-	1533	1131
Quarter 3	-	1520	959
Quarter 4	-	1231	-
Total for year	4069	6219	-

The articles that received the highest number of views per issue were also the highest cited articles for that particular issue.

1st Author	Volume	No. views	Altmetric	No. citations
Petford MA	68(2)	284	1	4
Hallermann J	69(1)	385	17	13
Weldon C	69(2)	157	8	10
Maritz B	70(1)	178	2	0

Student submissions

Since the previous HAA conference (2019) there have been three articles published involving students as first authors (Petford et al. 2019; Baptista et all. 2020; Lobon-Rovira & Bauer 2021). These, together with any subsequent articles by students up until the next conference in 2023, should come into contention for the *student publication award*. We should encourage more student contributions so that our younger members become fully engaged with the activities of the H.A.A.

Petford MA, van Huyssteen R, Alexander GJ. 2019. Influences of ecology and climate on the distribution of restricted, rupicolous reptiles in a biodiverse hotspot. Afr. J.Herpetol. 68: 118-133, DOI: 10.1080/21564574.2019.1681524

Ninda L Baptista, Krystal A Tolley, Marc Bluhm, Manfred Finckh & William R Branch. 2020. Rediscovery, range extension, habitat and phylogenetic relation of the endemic Scaled Sandveld Lizard *Nucras scalaris* Laurent, 1964 (Sauria: Lacertidae) in the central
Angolan plateau. Afr. J.Herpetol. 69: 12-28, DOI: 10.1080/21564574.2020.1778108

Javier Lobon-Rovira, Bauer A. 2021. Bone-by-bone: A detailed skull description of the White-headed dwarf gecko *Lygodactylus picturatus* (Peters, 1870), Afr. J.Herpetol. DOI: 10.1080/21564574.2021.1980120

Journal tracking

The information of this following section was obtained from Scimago Journal and Country Rank (S.J.R. - a publicly available portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database). All of the parameters have performed better since the new editorial team took over the editorial duties of the A.J.H. in October 2017. The following includes some of the parameters that are available from SJR (2021 data not available):

- The H-index of the A.J.H. has increased from 16 to 18 since the last report. This places A.J.H. 6th among the seven major herpetology journals for this parameter.
- The S.J.R. has increased from 0.239 in 2017 to an average of 0.340 for 2018-2020. The S.J.R. is a measure of scientific influence of journals that accounts for both the number of citations received by a journal and the importance or prestige of the journals where such citations come from. It measures the scientific influence of the average article in a journal, it expresses how central to the global scientific discussion an average article of the journal is.

- The total number of citations for the journal have increased from 17 in 2017 to an average of 25 for 2018–2020.
- The proportion of international collaboration (articles that have been produced by researchers from several countries) has gradually increased since 1999 from zero to a record high of 90% in 2020.

Importantly, the Journal Impact factor as calculated by Scopus is currently 0.684. The 2 year impact factor trend for 2018–2020 was 0.719, a marked increase from that of the previous term 2015–2017, namely 0.443.

A.J.H. reader survey

A survey was conducted in 2021 among HAA members and non-members to determine their opinions about the journal. The results were compiled from 69 respondents. This is only a summary of some of the important findings from the survey.

- 25% of the respondents would like to see more than 2 issues per year, but publishing more issues is dependent on the number of submissions received, and has a cost implication as well as a contractual obligation with the publishers (Taylor & Francis and NISC.)
- Suggestions for additional content to be included were: substantial faunal papers, articles with historic content, conservation-related research, and reptile and amphibian medicine, surgery and pathology. The AJH already covers all of these topics in its scope, but continues to have few submissions of these topics.
- A surprising 32% of respondents said that they do not visit the journal's website because they "did not need to". I am assuming it is because they receive hard copies of the journal. Others (even members) remarked that they do not have access to the website (10%), while some even remarked that they were not aware that the website existed! This is a weakness and a huge opportunity because the online platform offers a whole lot of extra content (including access to back issues, current online early issues, and colour-formatted pdf's among others). More traffic on the website will inevitably result in higher citation rates and even possibly increased submission rates, and therefore should be strategically approached.
- The main reasons why respondents did not submit an article in the past 4 years ranged from a lack of content to submit to the scope of the journal being outside their domain, to "the reputation of the journal". There is little to none that can be done from the Editorial team's side to address the first two reasons. I assume the respondents implied that the A.J.H. is perceived as not being as prestigious as other herpetological journals. This statement is contrary to the performance indices of the journal as outlined in the previous section of this report. One respondent blamed a long turnaround time and the editor for not submitting any articles to AJ.H. in the past 4 years.
- Apart from one or two minor issues, the majority of respondents that had submitted articles to A.J.H. were satisfied with the submission process.

- The majority of respondents were satisfied with the reviewer comments, except for a very few respondents.
- There were mixed feelings about the turnaround time of the review process, 12/22 respondents (55%) were not satisfied, while 10/22 respondents (45%) were satisfied.
- Only three respondents answered the question about suggestions going forward: two suggested faster turnaround time, and one suggested a better description of the short communication publication type in the author's instructions.

Final word

My term as Editor in Chief ends in 2021 and I would like to express my gratitude to my editorial team for their dedication and support during my term. Best wishes to the newly appointed Editor in Chief, Dr Jessica da Silva who will be taking over all responsibilities in January 2022.

Ché Weldon
Editor-in-Chief, African Journal of Herpetology

REPORT FROM THE CHAIR OF THE EDITORIAL BOARD

The new Editorial Board for African Journal of Herpetology was appointed in 2020 and has begun regular meetings to discuss how to promote the journal and has discussed options for making the journal more attractive for submissions from across Africa. The Board's Terms of Reference was finalized in 2020 and focusses on promoting the journal and to provide guidance for the Editor in Chief as well as the team of Associate Editors.

One of the main goals of the Editorial Board, encouraged by the H.A.A. Committee, has been to expand the Board to include members from all regions of Africa. The existing Board membership reasonably reflected H.A.A. membership, with representation chiefly from South Africa and from non-African countries. For a variety of reasons, the H.A.A. has historically been unable to attract African membership from outside of southern Africa. In the past, there were relatively few active herpetologists in many countries, but this situation has changed. Because payment of membership dues remains a problem as does language in some cases, the representation of herpetologists from other parts of Africa has not increased accordingly. However, it was felt that other impediments, such as the perception of African Journal of Herpetology as a chiefly South African outlet, could be countered by expanding the Editorial Board to include members from West, Central, East and North Africa, as well as from Madagascar, who could bring new ideas about greater participation from their regions and who could actively recruit authors (and members) from around the continent. These new members joined the Editorial Board in 2021.

Into the future, the Editorial Board plans to liaise closely with the journal Editor in Chief and the H.A.A. Committee, working together to increase the geographic scope and content of the journal.

Ultimately, well-qualified Board members have been recruited, resulting in an expanded Editorial Board including 14 members:

Aaron M. BAUER, Chair (U.S.A.)
Mathias BEHANGANA (Uganda)
David C. BLACKBURN (U.S.A.)
Beryl A. BWONG (Kenya)
El Hassan EL MOUDEN (Morocco)
Trenton W.J. GARNER (United Kingdom)
Eli GREENBAUM (U.S.A.)
Stephan LÖTTERS (Germany)
Edward C. NETHERLANDS (South Africa)
Abiodun B. ONADEKO (Nigeria)
Fano RATSOAVINA (Madagascar)
Jeanne TARRANT (South Africa)
Krystal TOLLEY (South Africa)
Martin WHITING (Australia)

It is planned that regular meetings will continue, with the most recent virtual meeting of the Board having been November 2021, with the primary agenda item being a "brain-storming" session to consider initiatives to encourage journal submissions from across Africa. This will include, though not be limited to, consideration of a panel to provide "pre-reviews" for first-time authors and those requiring English language assistance, ways to enfranchise authors from Francophone Africa, and means of increasing the profile of the journal throughout Africa. Because issues relating to the African Journal of Herpetology are intimately related to those of H.A.A. membership, it is anticipated that the Board will need to work in concert with the H.A.A. Committee on the implementation of any initiatives that may emerge.

Aaron M. Bauer
Chair, Editorial board, African Journal of Herpetology

NEWSLETTER EDITORS REPORT

This report covers African Herp News issues produced between December 2019 and September 2021 (issues 72–77). In total, these six issues equate to 471 pages, averaging 78 pages per issue. These six issues covered a total of 11 articles, one book review, one opinion piece, 19 Natural History Notes, and 15 Geographic Distributions. Additional published material includes the abstracts from the 14th HAA conference, 13 announcements, five editions of Tomorrow's Herpetologist Today, three editions of Tracks in the Sand, one correction, and three obituaries or tributes. Currently, there are nine submissions being processed (either under review or with authors for revisions). All newsletter issues (pending a one-year embargo) are freely available on the HAA website.

While the newsletter has mainly published content from southern Africa (and predominantly from South Africa), there has been increased representation from East, West, Central and North African countries, which is very pleasing, although this can be greatly improved. Further efforts to increase the newsletter's exposure and content across Africa are greatly needed, and we will make this a priority not only for the newsletter, but also the HAA as a whole.

Based on the results of the recent publication survey sent out to members and authors of the newsletter and/or journal ($n_{total} = 68$), I am happy to say that most of you (88%) receive, read and are happy with the number of issues and the content of the newsletter. However, there is always room for improvement. We will strive to do our best at improving turnaround times, communicating better with authors about the status of their submissions and expanding upon the published content. With regard to the content, we can only consider publishing what we receive; and only 51% of respondents have made a submission to the newsletter within the past 4 years. We strongly encourage all members and the greater African herpetological community to reach out to the Editor for guidance on what would and would not be suitable for the newsletter. We not only welcome Natural History Notes, Surveys, and Geographic Distributions, but also reports on envenomation, pathology and medicine, herpetological conservation efforts, opinion pieces, and citizen science and outreach programmes. We would also welcome herpetological travelogues, reviews of key herpetological equipment and its uses, notices of herpetological societies and society meetings in Africa and across the globe, as well as herpetological artwork. If you would like to feature in one of our popular article sections – Tomorrow's Herpetologists Today (for students and other young herpers) or Tracks in the Sand (for professional herpetologists), please reach out.

In closing, I would like to thank all of the authors, photographers, and herpetological enthusiasts who have contributed to the newsletter. I hope there will be many more of you in future.

Jessica da Silva
Editor

AWARDS REPORT

I took over the Awards portfolio in early 2020. The COVID-19 pandemic and associated lockdowns meant that no awards were offered in 2020.

The 2021 Student Research Grant and the 2021 Professional Research Grant were both advertised via email, the H.A.A. website, and association social media platforms in late 2020. We received six Student Research Grant applications. Five independent, anonymous, assessors were asked to review and rate the six applications. Examination of the assessor scores identified Ryan van Huyssteen as the recipient of the R15 000 grant and he was subsequently notified. We received four Professional Research Grant applications and following a similar review process, this time with four independent, anonymous reviewers, Ruth Cozien was selected as the recipient of the R15 000 grant and was subsequently notified. The funds for both awards have been paid across to the recipient's institutions, and feedback from those projects will be provided to the association in due course.

Because of the postponement of the H.A.A. conference, no Best Student Publication in African Journal of Herpetology Award, nor Exceptional Contribution to African Herpetology Award were made. Members are encouraged to visit the H.A.A. website for information on the Exceptional Contribution to African Herpetology Award and consider making nominations to the committee well in advance of the proposed 2023 conference.

Bryan Maritz
Awards, Herpetological Association of Africa

MEDIA PORTFOLIO REPORT
2020–2021

I took over the Media and Public Engagement portfolio from Bryan Maritz in early 2020. Updates were made to the website, with the assistance of Craig van Rensburg of 2XL Digital Solutions, in May and June 2020, and in February and August 2021 to include information on awards, grants, the conference, memberships, webinars, and the general lay out of the site.

Three webinars were hosted by the HAA during 2020, in May (Jonathan Losos on Anoles evolution – 426 views), August (Andrew Durso on Snake (mis)identification – 131 views) and December (An armchair chat with Dr Colin Tilbury – 109 views). These were shared on The Herpetological Association of Africa YouTube Channel that was created in May 2020, and which has 40 subscribers.

Also added to the HAA social media toolkit during this period was a Twitter account in January 2021 – HerpAssociationAfrica, with the handle @AfricaHerp, and which has 220 followers to date. Cormac Price has been instrumental in assisting with posts on this platform.

The Facebook page has 2712 followers and 2506 people liking the page, with an average of five posts per month, reaching an average of 822 people, and a 40% response rate. The majority of Facebook likes are by men (72.3%) in the 25-34 age range, and mostly from Cape Town! 32% of followers are from South Africa, followed by the United States of America (13.3%), but a wide representation of countries make up smaller proportions of the audience (see figure below).

I will be stepping down from this portfolio as of 2022, but am confident in handing the baton along to Nick Evans and I look forward to our social media and other communications spaces gaining traction, and to a productive conference in Hoedspruit in 2023.

Jeanne Tarrant
Media, Herpetological Association of Africa

STUDENT ISSUES PORTFOLIO REPORT
2020–2021

During the 2020–2021 period, the Student Awards portfolio was absorbed under a single Awards portfolio held by Bryan Maritz. As such, in my second term of keeping the Student Issues portfolio, I focussed on academic guidance and networking opportunities for student members of the Herpetological Association of Africa. And, together with the African Herp News Editor, Jessica da Silva, got Tracks in the Sand up and running.

I initiated the H.A.A. Collaborative Skills Development (H.A.A.-C.S.D.) drive via Slack. In creating the H.A.A.-C.S.D. platform, I aimed to foster creativity and skill development amongst our student members via peer learning. Several research topic channels were made available to streamline interactions between students and experts. Student members were encouraged to post messages (queries, literature, valuable links, etc.), respond to posts if they were knowledgeable on a specific topic, volunteer for webinars/ workshops and invite writing buddies. Thank you to all professionals for interacting with our student membership in this regard and imparting your knowledge to the next generation of herpetologists.

I also used the HAA-CSD platform to advertise research and/ funding opportunities that were applicable to the HAA student membership (in addition to circulating advertisements on Facebook and Twitter via Jeanne Tarrant, Media Portfolio).

It was a privilege to serve on the HAA Committee under the Student Issues portfolio (2018–2021), and as I am stepping down, I would like to welcome Jody Barends into this role. I also want to take this opportunity to wish all the young herpetologists nothing but the best with their future endeavours.

Haulie M Engelbrecht
Student issues, Herpetological Association of Africa

TONY EDISON PHELPS

1941–2021

Mark O'Shea, Tell Hicks, Stephen Spawls and Johannes Els

"It is also important to encourage young herpetologists, be they professional or amateur. I have never been empirical about my work; there is no point of gaining experience if you do not pass it on to the herpetologist of tomorrow."

Tony Phelps, *Old World Vipers*, 2010.

Tony taking a sample of venom from a Puff Adder (*Bitis arietans*) at Poole Serpentarium.

Tony Edison Phelps was born on 28 June 1941, in Bedford, England. Tony's fascination with reptiles dates back to the time when as an eight-year-old he observed two male Northern Adders (*Vipera berus*) in combat in the UK. After school he joined the Welsh Guards and trained at the Pirbright Barracks in Surrey, southern England. He also served in Kenya and a tour in Yemen.

In 1969 Tony became one of the founding members of the International Herpetological Society, the other three founders were the late John Foden (1948–2000), the wildlife artist Tell Hicks and Dave Turnbull. Tony then established the Poole Serpentarium, on the south coast of England. In a very short time, Poole Serpentarium gained a reputation for the largest collection of venomous snakes on view to the public in the U.K. He also ran his very popular British reptile field courses in Purbeck, Dorset, in the late 1970's.

In 1981 Tony's first book was published by Blandford Press, followed by a revised edition in 1989, but the publisher insisted on calling both editions *Poisonous Snakes*, a fact that really rankled Tony. He wrote a second book, *Old World Vipers*, which was published by Chimaira in 2010. He also wrote a number of scientific papers on British and African reptiles (see bibliography).

Tony left Poole Serpentarium for South Africa to work at FitzSimons Snake Park in Durban from 1982–1984. At the same time, he was working on Nile Crocodiles (*Crocodylus niloticus*) in the St. Lucia Reserve, KwaZulu-Natal Province, alongside the crocodile biologist Tony Pooley, and it was during this time when he began his fieldwork on Black Mambas (*Dendroaspis polylepis*) and Gaboon Vipers (*Bitis gabonica*).

Tony returned to the UK and became a television natural history cameraman, an occupation that included filming for the BBC and National Geographic. He was living in Swanage, Dorset, where he had established 'Reptile Research and Imagery' to promote both the filming of and the research into reptiles.

Tony with a Green Mamba (*Dendroaspis angusticeps*) during filming.

He continued his long-term studies of the local snake populations and did contractual work for English Nature. He came to know some of his European Adders extremely well over the following decades, but then one winter he discovered one of his favourite hibernacula had been destroyed by a bulldozer doing heathland management at the behest of the authorities. There were dead Smooth Snakes (*Coronella austriaca*) and Northern Adders scattered about and Tony was distraught at the loss of snakes, friends that he had known personally and followed the lives of for so long. He spoke out to the press and as a result the contracts ended. In disgust Tony left the UK for the last time.

Tony conducting Northern Adder research in Dorset, UK.

In 2003, Tony moved back to South Africa and received his citizenship in 2010. He settled in Oudtshoorn, Western Cape Province. While working on his book, *Old World Vipers*, he noticed a significant lack of ecological data for the dwarf adders (*Bitis* spp.), in particular the Southern Adder (*Bitis armata*) which subsequently inspired his pursuit for more information. He presented the preliminary results of this study at the 5th World Congress of Herpetology in Stellenbosch, SA in 2005.

In 2004, Tony established the Cape Reptile Institute through which he ran his reptile research and snake awareness courses. During this time, he also worked at De Hoop Nature Reserve on Southern Adders. His studies eventually expanded over time to include Cape Cobras (*Naja nivea*) and Puff Adders (*Bitis arietans*); however, while at De Hoop, Tony discovered a love that rivalled his love for snakes - that for Chacma Baboons (*Papio ursinus*). He spent many months studying the behaviour of these social and inquisitive primates while working on a film documentary with Ian Scammel.

His last field work was in De Hoop Nature Reserve during June 2019, but his memory had deteriorated badly by this time and he was diagnosed shortly after with dementia. In March 2021 he was diagnosed with advanced prostate cancer. He passed away in the frail care centre of the Oudtshoorn Retirement Home in the Western Cape Province on 5 November 2021.

He was married four times and leaves three former wives, his first wife preceding him in 2020, two sons, a daughter, and a grandson. He will be greatly missed by the herpetological community, especially in southern Africa and the UK

Note: A comprehensive account of Tony Phelps' life will be published by the International Herpetological Society in the March 2022 issue of *The Herptile*.

Bibliography:

Phelps T. 1978. Seasonal movement of the snake, *Coronella austriaca, Vipera berus*, and *Natrix natrix* in southern England. Brit. Herp. J. 5: 755–761.

Phelps T. 1981. *Poisonous Snakes*. Dorset: Blandford Press.

Phelps T. 1989. *Poisonous Snakes* (revised edition). Dorset: Blandford Press.

Phelps T. 2000. Reproductive behaviour of the Sand Lizard, *Lacerta agilis*, in south-eastern Dorset, with a note on habitat management. Herp. Bulletin 72: 21–25.

Phelps T. 2002. A study of the Black Mamba (*Dendroaspis polylepis*) in KwaZulu-Natal, South Africa, with particular reference to long-term-refugia. Herp. Bulletin 80:7–19.

Phelps T. 2003. *Bitis gabonica* (Gaboon Adder): unusual mortality. Herp. Bulletin 86: 24– 25.

Phelps T. 2003. *Vipera berus* (European Adder): hot weather behaviour in Purbeck, Dorset. Herp. Bulletin 86: 26–25.

Phelps T. 2003. *Natrix natrix* (Grass Snake): unusual markings. Herp. Bulletin 86: 28–29.

Phelps T. 2004. Population dynamics and spatial distribution of the adder *Vipera berus* in southern Dorset, England. Mertensiella 15: 241–258.

Phelps T. 2006. *Naja nivea* (Linnaeus, 1758). Scavenging. African Herp News 40: 24.

Phelps, T. 2006. *Bitis armata* (Smith, 1826). Predation. Afr. Herp News 40: 24.

Phelps T. 2006. *Bitis armata* (Smith, 1826). Prey. Afr. Herp News 40: 26.

Phelps T, Els J. 2006. *Bitis caudalis* (A. Smith, 1839). Geographical distribution. *Afr.* Herp News 40: 30.

Phelps T, Els J. 2006. *Bitis rubida* Branch, 1977. Diet/ Morphology. Afr. Herp News 41: 23.

Phelps T. 2010. Old World Vipers: a natural history of the Azemiopinae and Viperinae. Frankfurt am Main: Edition Chimaira.

Barlow A, Baker K, Hendry CR, Peppin L, Phelps T, Tolley KA, Wüster CE, Wüster W. 2013. Phylogeography of the widespread African Puff Adder (*Bitis arietans*) reveals multiple Pleistocene refugia in southern Africa. Mol. Ecol. 22: 1134–1157.

AFRICAN HERP NEWS PUBLICATIONS OF THE LAST 10 YEARS

J. REISSIG

African Herp News is the official newsletter of the Herpetological Association of Africa. During the last 10 years, between 2010 and 2019, a total of 258 articles have been published in numbers 50 to 71, an average of 25.8 articles a year and 11.7 articles per issue. African Herp News generally gets published three times per year, however, only two issues were published in 2013. Unfortunately during 2014, 2015 and 2016 only one newsletter was published per year. Of these total articles, 240 covered various aspects of African herpetology and will be used for this analysis.

Over the 10-year period, a total of 209 articles (87.08%) were reptile related, 27 articles (11.25%) were amphibian related and four articles (1.67%) covered a combination of reptile and amphibian related topics (Fig. 1). Furthermore, geographic analysis (Fig. 2) showed that most articles published had relevance to southern Africa. Unallocated articles are those that covered multiple parts of Africa, which could not be directly allocated to a specific region.

It is of vital importance that all members of the herpetological community are aware that the Herpetological Association of Africa is a continental organisation and does not just focus primarily on southern African subjects. Authors from around the globe are encouraged to submit their relevant work to African Herp News, and thus assist the association to publish more widely on a continental scale.

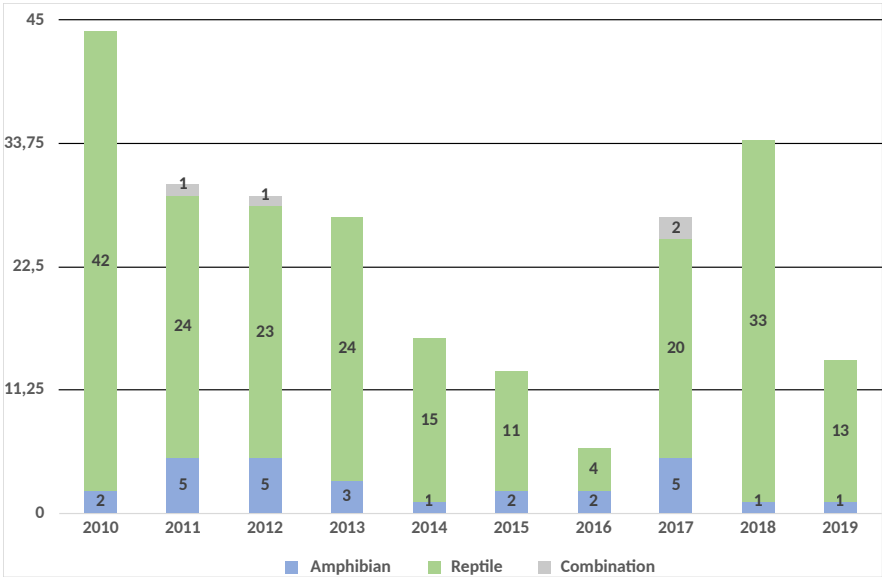


Figure 1. Proportion of articles focusing on reptiles, amphibians, and both taxa.

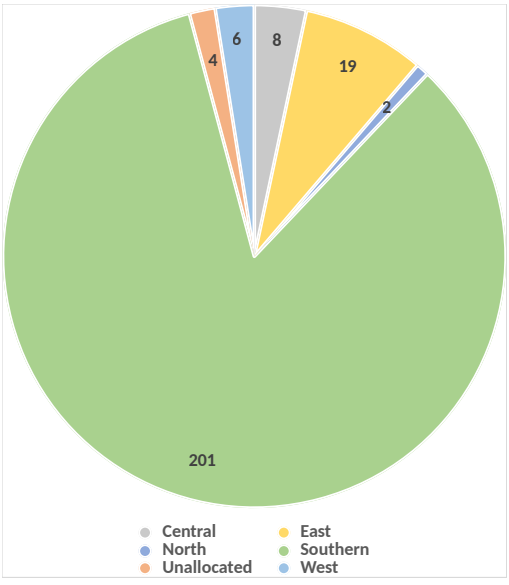


Figure 2. Proportion of articles focusing on each of the five geographical regions of Africa.

AHN

BIBLIOGRAPHY

A complete alphabetical bibliography, by authors, of the 240 articles published in African Herp News, subdivided into reptile, amphibian and combination articles, from the beginning of 2010 until the end of 2019.

Reptile Articles

Alexander GJ. 2012. *Python natalensis* Smith, 1840 Predation/Diet. Afr. Herp News 56:25.

Alexander GJ, Kruger C. 2010. *Bitis a. arietans* (Merrem, 1820) Mate searching. Afr. Herp News 50:30–33.

Alexander GJ, Maritz B. 2010. *Bitis a. arietans* (Merrem, 1820) Resistance to Naja venom. Afr. Herp News 50:34–36.

Anderson CV, Tolley KA. 2013. *Bradypodion occidentale* (Hewitt, 1935) Reproduction/Colour. Afr. Herp News 59:40–42.

Armstrong AJ. 2010. Population estimate of *Bradypodion melanocephalum* at the Durban International Airport Eastern Precinct. Afr. Herp News 52:2–7.

Armstrong AJ. 2011. Status of the Sungazer *Smaug giganteus* in KwaZulu-Natal Province, South Africa. Afr. Herp News 54:1–4.

Bakhouche B, Escoriza D, Sánchez-Vialas A, Khalil D, Calco-Revuelt M. 2019. *Malpolon insignitus* (Geoffroy de Saint-Hilaire, 1809) in the Hoggar Mountains (Southeast Algeria). Afr. Herp News 71:29–35.

Barts M, Haacke W. 2010. *Afrogecko plumicaudus* (Haacke, 2009) Reproduction. Afr. Herp News 50:38.

Barts M, Haacke W. 2010. *Afroedura bogerti* (Loveridge, 1944) Reproduction. Afr. Herp News 50:39.

Bates MF. 2010. *Psammophis notostictus* (Peters 1867) Diet. Afr. Herp News 52:11–13.

Bates MF. 2010. Geographical Distribution: *Varanus niloticus* (Linnaeus, 1766). Afr. Herp News 52:25–26.

Bates MF. 2011. Geographical Distribution: *Tetradactylus tetradactylus* (Daudin, 1802). Afr. Herp News 53:52–53.

Bates MF. 2013. Geographical Distribution: *Tropidosaura cottrelli* (Hewitt, 1925). Afr. Herp News 60:26–28.

Bates MF. 2014. Geographical Distribution: *Tetradactylus africanus* (Gray, 1838). Afr. Herp News 61:34–35.

Bates MF. 2014. Geographical Distribution: *Tetradactylus africanus* (Gray, 1838). Afr. Herp News 61:35–36.

Bates MF. 2018. Geographical Distribution: *Trachylepis homalocephala* (Wiegmann, 1828). Afr. Herp News 68:52–53.

Bates MF, Boshoff D. 2018. *Psammophis crucifer* (Daudin, 1803). Death-feigning. Afr. Herp News 67:19.

Bates MF, Broadley DG. 2012. Geographical Distribution: *Cordylus vittifer* Reichenow, 1887. Afr. Herp News 56:34–35.

Bates MF, Clark TK, Abell SE. 2017. Geographical Distribution: *Cordylus cordylus* (Linnaeus, 1758). Afr. Herp News 64:39–41.

Bates MF, Nuttall R. 2013. *Dispholidus typus viridis* (A. Smith, 1828) Diet. Afr. Herp News 59:33–35.

Bates MF, Nuttall R. 2013. A case of death-feigning in the Striped Grass Snake *Psammophylax tritaeniatus* (Günther), with a review on the occurrence of this phenomenon in Southern and Eastern African snakes. Afr. Herp News 60:5–9.

Bates MF, Trape J-F, Spawls S. 2013. Geographical Distribution: *Dasypeltis gansi* Trape & Mané, 2006. Afr. Herp News 60:30–32.

Bauer AM. 2019. Geographical Distribution: *Scelotes sexlineatus* (Harlan, 1824). Afr. Herp News 70:31–33.

Bauer AM, Ceríaco LMP, Heinicke MP, Blackburn DC. 2015. Geographical Distribution: *Pachydactylus barnardi* (FitzSimons, 1941). Afr. Herp News 62:35–37.

Baynham T. 2010. Geographical Distribution: *Dendroaspis polylepis polylepis* (Günther, 1864). Afr. Herp News 51:25–27.

Berec M. 2011. *Rhampholeon temporalis* (Matschie, 1892) Incubation time. Afr. Herp News 53:49.

Bokhout B, Verburgt L, Davies AB. 2015. *Afrotyphlops schlegelii* (Bianconi, 1847) Termite Mound Access Behaviour. Afr. Herp News 62:16–22.

Bourquin O. 2019. Geographical Distribution: *Homopholis wahlbergii* (A. Smith, 1849). Afr. Herp News 70:35–36.

Boycott RC. 2015. *Philothamnus natalensis occidentalis* (Broadley, 1966) Reproduction. Afr. Herp News 62:23–25.

Boycott RC. 2018. *Psammophis crucifer* (Daudin, 1803). Effect of drought on hatching success of eggs. Afr. Herp News 67:12–18.

BIBLIOGRAPHY

Boycott RC. 2018. *Psammophis crucifer* (Daudin, 1803). Effect of drought on hatching success of eggs. Afr. Herp News 67:12–18.

Boycott RC. 2018. Further observations on the Natal Purple-glossed Snake *Amblyodipsas concolor* (Serpentes: Lamprophiidae) in eSwatini with an assessment of its regional status. Afr. Herp News 68:31–36.

Boycott RC. 2018. *Psammophis brevirostris* (Peters, 1881). Diet. Afr. Herp News 68:43–47.

Boycott RC, Culverwell J. 2015. Geographical Distribution: *Philothamnus natalensis occidentalis* (Broadley, 1966). Afr. Herp News 62:38–40.

Branch B. 2010. *Kinixys spekii* (Daudin, 1802) Predation. Afr. Herp News 50:25–26.

Branch B. 2010. Recent studies on the evolution of African snakes and chelonians: a personal perspective. Afr. Herp News 50:2–10.

Branch WR. 2013. Geographical Distribution: *Meroles ctenodactylus* (Smith, 1838). Afr. Herp News 59:54–56.

Branch WR. 2014. Geographical Distribution: *Lamprophis guttatus* (A. Smith, 1843). Afr. Herp News 61:39–40.

Branch WR. 2016. *Python natalensis* Smith, 1840 Predation by Carnivores. Afr. Herp News 63:2–8.

Branch WR, Conradie W. 2013. Geographical Distribution: *Naja annulata annulata* (Bucholtz & Peters, 1876). Afr. Herp News 59:50–53.

Branch WR, Jackson A. 2016. *Dispholidus typus* (Smith, 1828) Melanistic Coloration. Afr. Herp News 63:9–11.

Branch WR, Maritz B. 2010. Geographical Distribution: *Acontias namaquensis* (Hewitt, 1938). Afr. Herp News 51:28–29.

Branch WR, Menegon M, Beraducci J. 2010. Geographical Distribution: *Naja ashei* (Wüster & Broadley, 2007). Afr. Herp News 52:21–23.

Branch WR, Rödel M-O, Marais J, Coetzee J. 2015. *Varanus albigularis* (Daudin, 1802) Diet. Afr. Herp News 62:26–27.

Brecko J, Meirte D, Pauwels OSG. 2019. *Aparallactus modestus ubangensis* (Boulenger, 1897) Reproduction. Afr. Herp News 71:37–39.

Broadley DG, Beraducci J. 2010. Geographical Distribution: *Xyelodontophis uluguruensis* (Broadley & Wallach, 2002). Afr. Herp News 50:41–42.

Broadley DG, Cassidy T. 2011. Geographical Distribution: *Dipsadoboa underwoodi* Rasmussen 1993. Afr. Herp News 55:21–22.

Broadley DG, Farooq HOM. 2013. Geographical Distribution: *Thelotornis usambaricus* (Broadley, 2001). Afr. Herp News 59:48–50.

Broadley DG, Hunt J, Cantle G. 2010. Geographical Distribution: *Psammobates oculifer* (Kuhl, 1820). Afr. Herp News 51:24–25.

Broadley DG, Willems F. 2015. Geographical Distribution: *Trachylepis ivensii* (Bocage, 1879). Afr. Herp News 62:41–42.

Broadley S. 2017. *Agama kirkii* (Boulenger, 1885) Sand-bathing. Afr. Herp News 64:35–36.

Busson F, Loehr VJT. 2011. *Stigmochelys pardalis* (Bell 1828) Diet. Afr. Herp News 54:12–13.

Canning G, Davidson-Phillips S, Myram P. 2017. *Naja mossambica* (Peters, 1854) Diet. Afr. Herp News 64:27–28.

Ceríaco LMP, Bauer AM, Heinicke MP, Blackburn DC. 2017. Geographical Distribution: *Chondrodactylus pulitzerae* (Schmidt, 1933). Afr. Herp News 64:41–44.

Ceríaco LMP, Sousa AC. 2017. Geographical Distribution: *Trachylepis perrotetii* (Duméril & Bibron, 1839). Afr. Herp News 64:44–46.

Cloete BN, Mohamed R, Ponton TJ, Tokota S, Maritz B. 2019. Geographical Distribution: *Gerrhosaurus typicus* (Smith, 1837). Afr. Herp News 71:40–42.

Conradie W. 2012. *Varanus albigularis* Daudin, 1802 Diet. Afr. Herp News 58:15–16.

Conradie W. 2012. Geographical Distribution: *Nucras taeniolata* Smith, 1838. Afr. Herp News 58:21–22.

Conradie W, Bourquin S. 2013. Geographical Distribution: *Acontias kgalagadi kgalagadi* (Lamb, Biswas & Bauer, 2010). Afr. Herp News 60:29–30.

BIBLIOGRAPHY

Conradie W, Branch WR, Herbert DG. 2017. *Tetradactylus seps* (Linnaeus, 1758) Diet. Afr. Herp News 65:14–16.

Conradie W, Busschau T. 2018. Geographical Distribution: *Macrelaps microlepidotus* (Günther, 1860). Afr. Herp News 67:41–43.

Conradie W, Du Preez B, Venter J. 2017. Geographical Distribution: *Tropidosaura montana natalensis* FitzSimons, 1947. Afr. Herp News 65:40–41.

Conradie W, Engelbrecht H, Herrel A, Measey GJ, Nielsen SV, Vanhooydonck B, Tolley KA. 2011. Reptile survey of Venetia Limpopo Nature Reserve, Limpopo Province – South Africa. Afr. Herp News 55:6–12.

Conradie W, King VF, Pressly M, Leander A. 2017. *Gerrhosaurus typicus* (A. Smith, 1837) Clutch size, incubation period and hatchling description. Afr. Herp News 64:28–30.

Conradie W, Venter J, Nicolau JR. 2012. Geographical Distribution: *Macrelaps microlepidotus* Günther, 1860. Afr. Herp News 58:19–21.

Coombs G. 2017. *Stigmochelys pardalis* (Bell, 1828) Survival of released or escaped individual. Afr. Herp News 64:30–33.

Cornelius A, Marais A, Cunningham P. 2012. Geographical Distribution: *Agama hispida* Linnaeus, 1754. Afr. Herp News 56:35–37.

Cunningham P. 2011. *Trachylepis acutilabris* (Peters, 1862) Diet. Afr. Herp News 53:48.

Cunningham P. 2011. *Trachylepis spilogaster* (Peters, 1882) Predation. Afr. Herp News 55:18–19.

Cunningham P. 2011. *Agama planiceps* (Peters, 1862) Diet. Afr. Herp News 55:19–20.

Cunningham P. 2013. Geographical Distribution: *Pachydactylus rangei* (Andersson, 1908). Afr. Herp News 59:56–59.

Cunningham P. 2013. *Meroles ctenodactylus* (Smith, 1838) Diet. Afr. Herp News 60:22–23.

Cunningham P. 2013. *Psammophis namibensis* (Broadley, 1975) Predation. Afr. Herp News 60:24–25.

Cunningham P. 2014. *Psammobates oculifer* (Kuhl, 1820) Dormancy. Afr. Herp News 61:19.

Cunningham P. 2018. *Trachylepis occidentalis* (Peters, 1867). Avian predation. Afr. Herp News 67:32–34.

Cunningham P, Cunningham J. 2010. *Varanus albigularis* (Daudin, 1802) Diet. Afr. Herp News 51:18–19.

Cunningham P, Thomas C. 2019. *Dispholidus typus viridis* (A. Smith, 1828) Foraging. Afr. Herp News 70:24–28.

Cunningham P, van der Waal C. 2010. *Naja nigricinta nigricinta* (Bogert, 1940) Diet. Afr. Herp News 51:9–11.

Cunningham P, Wassenaar T, Henschel J. 2012. Notes on some aspects of the ecology of the Husab Sand Lizard, *Pedioplanis husabensis*, from Namibia. Afr. Herp News 56:1–11.

de Villiers M, Bates MF, Burger M, Harrison J, Navarro R. 2010. The Southern African Reptile Conservation Assessment, 2005–2009. Afr. Herp News 50:10–13.

Deans R. 2011. *Causus rhombeatus* (Lichtenstein, 1823) Diet. Afr. Herp News 54:14–15.

Evans N. 2018. *Naja mossambica* (Peters, 1854). Maximum Size. Afr. Herp News 68:47–48.

Girard F. 2010. Geographical Distribution: *Trachylepis striata* (Peters, 1844). Afr. Herp News 52:25.

Girard F. 2011. *Bradypodion transvaalense* (Fitzimons, 1930) Reproduction. Afr. Herp News 54:18–19.

Girard F. 2013. *Pachydactylus vansoni* FitzSimons, 1933 Captive Breeding. Afr. Herp News 60:19–20.

Goldberg SR. 2010. *Dendroaspis jamesoni* (Traill, 1843) Reproduction. Afr. Herp News 50:27.

Goldberg SR. 2010. *Naja nivea* (Linneaus, 1758) Reproduction. Afr. Herp News 50:28.

Goldberg SR. 2010. *Trachylepis varia* (Peters, 1867) Reproduction. Afr. Herp News 51:16.

Goldberg SR. 2010. *Latastia longicaudata* (Reuss, 1834) Reproduction. Afr. Herp News 52:18–19.

Goldberg SR, Bursey CR, Greenbaum E, Kusamba C, Arreola J. 2014. *Gerrhosaurus nigrolineatus* Hallowell, 1857 Endoparasites. Afr. Herp News 61:20–21.

Goldberg SR, Bursey CR. 2010. *Meroles reticulates* (Bocage, 1867) Endoparasites. Afr. Herp News 50:36–37.

Goldberg SR, Bursey CR. 2010. *Naja nivea* (Linneaus, 1758) Endoparasites. Afr. Herp News 50:29–30.

Goldberg SR, Bursey CR. 2011. *Lygosoma sundevalli* (Smith, 1849) Endoparasites. Afr. Herp News 54:17–18.

Goldberg SR, Bursey CR. 2012. *Chondrodactylus bibronii* Smith, 1846 Endoparasites. Afr. Herp News 56:28–30.

BIBLIOGRAPHY

Greenbaum E, Jackson K, Kusamba C. 2010. *Natriciteres olivacea* (Peters, 1854) Melanism. Afr. Herp News 52:10–11.

Hassen L, Cunningham P. 2012. *Stigmochelys pardalis* Bell, 1928 Predation. Afr. Herp News 57:10–11.

Heaton JS, Juvik JO, Amutenya K. 2015. *Psammobates oculifer* (Kuhl, 1820) Winter activity. Afr. Herp News 62:28–29.

Heinicke MP, Bauer AM. 2018. Geographical Distribution: *Goggia essexi* (Hewitt, 1925) and *Lygodactylus capensis* (Smith, 1849). Afr. Herp News 67:37–41.

Hester E, Schaefer A, Bauer AM. 2018. *Afrogecko prophyreus* (Daudin, 1802). Reproduction. Afr. Herp News 67:20–21.

Howell KM, Broadley DG. 2014. Geographical Distribution: *Gonionotophis crossi* (Boulenger, 1895). Afr. Herp News 61:41–42.

Huber R, Barts M, Schneider C. 2011. Geographical Distribution: *Pachydactylus fasciatus* Boulenger, 1888. Afr. Herp News 55:22–24.

Huber R, Barts M, Schneider C. 2011. Geographical Distribution: *Hemidactylus mabouia* (Moreau de Jonnès, 1818). Afr. Herp News 55:24–25.

Hughes B. 2014. Descriptions of Black Boomslang (*Dispholidus typus* "*nigra*") in the literature. Afr. Herp News 61:11–15.

Hughes B. 2017. Geographical Distribution: *Natriciteres variegata* (Peters, 1861). Afr. Herp News 65:33–34.

Hughes B. 2017. Geographical Distribution: *Atheris hirsuta* Ernst & Rödel, 2001. Afr. Herp News 65:34–35.

Hughes B. 2018. The Snakes of Dodoma (06° 11' S, 35° 45' E), Tanzania. Afr. Herp News 67:8–11.

Hughes DF, Behangana M. 2017. *Hemidactylus mabouia* (Moreau de Jonnès, 1818) Partial leucism. Afr. Herp News 64:33–35.

Hughes DF, Behangana M. 2017. *Chamaeleo gracilis* (Hallowell, 1844) Maximum Size. Afr. Herp News 65:16–17.

Hughes DF, Behangana M. 2017. *Trachylepis striata* (Peters, 1844) Predation. Afr. Herp News 65:26–28.

Iiyambo N, Eifler D, Marais E, Kirchhof S. 2016. *Meroles anchietae* (Bocage, 1867) Size, Growth and Longevity. Afr. Herp News 63:12–15.

Jacobsen NHG. 2011. The distribution of *Lygodactylus bradfieldi* Hewitt 1932 in Limpopo Province, South Africa. Afr. Herp News 53:21–27.

Jacobsen NHG. 2012. Geographical Distribution: *Lygodactylus capensis capensis* A. Smith, 1849. Afr. Herp News 56:37–38.

Jordaan PR. 2018. *Varanus albigularis albigularis* Daudin, 1802. Severe facial myiasis. Afr. Herp News 67:27–30.

Jordaan PR, Combrink AS. 2018. *Crocodylus niloticus* (Laurenti, 1802). Hunting behaviour. Afr. Herp News 67:30–32.

Jordaan PR, Els PU, Woolcock AB. 2018. *Chameleo dilepis* (Leach, 1819). Topor Refugia. Afr. Herp News 68:39–41.

Jordaan PR, Hanekom CC. 2019. Fossorial reptile density in sand forest, Tshinini Game Reserve. Afr. Herp News 70:16–21.

Jordaan PR, Woolcock AB, Els PU. 2019. *Cordylus vittifer* (Reichenow, 1887) Fire Associated Injury. Afr. Herp News 70:22–24.

Keith M, Ginsburg AE. 2010. *Varanus niloticus* (Linneaus, 1758) Feeding behaviour. Afr. Herp News 51:19–21.

Kemp L, Conradie W. 2017. Geographical Distribution: *Aspidelaps scutatus scutatus* A. Smith, 1849. Afr. Herp News 65:42–44.

Kirchhof S, Hipsley CA, Corl A, Dell'Mour H, Müller J. 2014. Geographical Distribution: *Pedioplanis lineoocellata lineoocellata* (Duméril & Bibron, 1839). Afr. Herp News 61:28–30.

Kirchhof S, Hipsley CA, Corl A, Dell'Mour H, Müller J. 2014. Geographical Distribution: *Pedioplanis undata* (A. Smith, 1838). Afr. Herp News 61:30–33.

Kirchhof S, Losogo LB, Goosh CS, Malonza PK. 2018. *Latastia longicaudata* (Reuss, 1934). Diet. Afr. Herp News 67:21–25.

Klose L. 2013. *Bitis rubida* (Branch, 1997) Reproduction. Afr. Herp News 59:29–32.
Kvift GM. 2011. Geographical Distribution: *Rhampholeon boulengeri* (Steindachner, 1911). Afr. Herp News 54:20–21.
Kyle KJ, Warner JK. 2010. *Bitis gabonica gabonica* (Duméril, Bibron & Duméril, 1854) Winter breeding. Afr. Herp News 51:11–13.
Loehr VJT. 2012. *Homopus femoralis* Boulenger, 1888 Diet. Afr. Herp News 57:9–10.
Loehr VJT. 2017. *Homopus boulengeri* Duerden, 1906 Reproduction. Afr. Herp News 65:17–19.
Loehr VJT. 2018. *Chersobius boulengeri* (Duerden, 1906). Reproduction. Afr. Herp News 68:37–39.
Marais J. 2010. *Aparallactus capensis* (Smith, 1849) Envonmation. Afr. Herp News 52:8.
Marais J. 2010. *Atractaspis bibronii* (Smith, 1849) Diet. Afr. Herp News 52:9.
Marais J, Jubbe W. 2010. Geographical Distribution: *Naja melanoleuca* (Hallowell, 1857). Afr. Herp News 52:24–25.
Marais J, McGahey J. 2010. *Dendroaspis angusticeps* (Smith, 1849) Male combat. Afr. Herp News 52:15–16.
Marais J, Midlane N. 2010. *Philothamnus hoplogaster* (Günther, 1863) Male combat. Afr. Herp News 52:13–15.
Maritz B. 2012. *Bitis schneideri* Boetger 1886 Relative Prey Size. Afr. Herp News 57:16.
Maritz B. 2012. *Meroles knoxii* Milne-Edwards, 1829 Forced Copulation. Afr. Herp News 57:17.
Maritz B. 2013. *Bitis arietans arietans* (Merrem, 1820) Predation. Afr. Herp News 59:21–28.
Maritz B. 2018. *Philothamnus* (A. Smith, 1847). Predation. Afr. Herp News 68:48–49.
Maritz B, Alexander GJ. 2010. Geographical Distribution: *Dendroaspis polylepis polylepis* (Günther, 1864). Afr. Herp News 51:27–28.
Maritz B, Blackburn JL, Huang P. 2014. *Amblyodipsas polylepis* (Bocage, 1873) Mimicry. Afr. Herp News 61:23–24.
Maritz B, Blackburn JL, Huang P. 2014. *Gonionotophis nyassae* (Günther, 1888) Diet. Afr. Herp News 61:25–26.
Maritz B, Breytenbach L. 2015. *Acontias plumbeus* (Bianconi, 1849) Agonistic behaviour. Afr. Herp News 62:30–31.
Maritz B, Wallner A, Deans R. 2013. *Bitis parviocula* (Böhme 1977) Reproduction. Afr. Herp News 59:28–29.
Mashinini L. 2010. *Microacontias litoralis* (Broadley & Greer, 1969) Maximum size. Afr. Herp News 51:15.
Mashinini PL, Heideman NJL, Mouton PLFN. 2011. On some ecological aspects of the coastal legless lizard *Acontias litoralis* (Scincidae: Acontinae). Afr. Herp News 53:16–21.
Masterson GPR, Koen D, Du Toit L, Horn N. 2010. Size-class distributions for four lizard species found in Suikerbosrand Nature Reserve, Gauteng, South Africa. Afr. Herp News 51:4–6.
Masterson GPR, Lephuting J, Mathebula J, Shirinda E. 2012. *Python natalensis* Smith, 1840 Reproduction. Afr. Herp News 56:26–28.
Nicolau GK, Kemp L, Conradie W. 2018. Geographical Distribution: *Panaspis wahlbergi* Smith, 1849. Afr. Herp News 69:26–30.
Nicolau GK, Lynch KMJ. 2019. Geographical Distribution: *Pachydactylus purcelli* Boulenger, 1910. Afr. Herp News 70:33–35.
Nielsen SV, Conradie W. 2011. *Psammophis* Boie, 1827 Mortality. Afr. Herp News 55:17–18.
Oosthuizen DJ. 2018. Geographical Distribution: *Bitis arietans arietans* (Merrem, 1820). Afr. Herp News 68:56–59.
Oosthuizen DJ. 2018. Geographical Distribution: *Nucras livda* (A. Smith, 1838). Afr. Herp News 69:24–26.
Paasikunnas T, Kallio A. 2012. *Hemidactylus mabouia* Moreau de Jonnès, 1818 Predation. Afr. Herp News 56:31.
Paasikunnas T, Kallio A. 2012. *Philothamnus semivariegatus* Smith, 1840 Mortality. Afr. Herp News 57:14–15.
Parusnath S. 2012. *Smaug giganteus* A. Smith, 1844 Predation. Afr. Herp News 58:13–14.
Pauwels OSG. 2019. Geographical Distribution: *Feylinia currori* Gray, 1845. Afr. Herp News 71:42–44.
Petford M, van Huyssteen R. 2017. Geographical Distribution: *Homopholis mulleri* Visser, 1987. Afr. Herp News 65:38–39.

BIBLIOGRAPHY

Petford M, van Huyssteen R. 2018. *Hemirhagerrhis nototaenia* (Günther, 1864). Hunting strategy. Afr. Herp News 67:34–36.

Petford M, van Huyssteen R, Nicolau GK. 2018. *Bitis arietans arietans* (Merrem, 1820). Foraging Strategy. Afr. Herp News 68:41–43.

Pietersen DW, Davies JP. 2012. Geographical Distribution: *Afroablepharus walbergii* A. Smith 1849. Afr. Herp News 57:22–23.

Pietersen DW, Davies JP, Thompson LJ. 2018. Geographical Distribution: *Lygodactylus chobiensis* FitzSimons, 1932. Afr. Herp News 67:43–45.

Pietersen DW, Davies JP, Thompson LJ. 2018. Geographical Distribution: *Chamaeleo anchietae* Bocage, 1872. Afr. Herp News 67:45–47.

Pietersen DW, Davies JP, Thompson LJ. 2018. Geographical Distribution: *Kinyongia vanheygeni* Nečas, 2009. Afr. Herp News 69:22–24.

Pietersen DW, Stanton M. 2019. Geographical Distribution: *Prosymna pitmani* Battersby, 1951. Afr. Herp News 70:36–38.

Rabiega PS. 2018. Geographical Distribution: *Lycodonomorphus laevissimus* (Günther, 1862). Afr. Herp News 68:59–61.

Rebelo AD, Jordaan PR, Conradie W. 2018. Geographical Distribution: *Ptenopus garrulus maculatus* (Gray, 1866). Afr. Herp News 68:50–52.

Rebelo AD, Zhao Z, Jordaan A, Jordaan PR, Conradie W. 2018. Geographical Distribution: *Scelotes caffer* Peters, 1961. Afr. Herp News 68:53–56.

Reissig J. 2013. *Thelotornis capensis capensis* (A. Smith, 1849) Diet/Activity. Afr. Herp News 59:37–39.

Reissig J. 2013. *Bradypodion setaroi* (Raw, 1976) Reproduction. Afr. Herp News 59:42–44.

Reissig J. 2013. *Chamaeleo dilepis dilepis* (Leach, 1819) Reproduction. Afr. Herp News 59:44–45.

Reissig J. 2014. *Bradypodion melanocephalum* (Gray, 1865) Reproduction. Afr. Herp News 61:22–23.

Reissig J, Heaton JS. 2017. *Stigmochelys pardalis* (Bell, 1828) Nocturnal Activity. Afr. Herp News 65:28–30.

Reissig J, Tiedemann CA. 2018. *Bradypodion thamnobates* Raw, 1848 Reproduction. Afr. Herp News 69:20–21.

Reissig J, Tiedemann CA, Malan J, Boshoff D. 2019. *Crotaphopeltis hotamboeia* (Laurenti, 1768) Predation. Afr. Herp News 71:36–37.

Reissig J, Van Rensburg C, Shaw C. 2015. Geographical Distribution: *Aspidelaps scutatus fulafula* (Bianconi, 1849). Afr. Herp News 62:43–44.

Schmidt W. 2011. *Lycodonomorphus rufulus* (Lichtenstein, 1823) Diet. Afr. Herp News 54:15–17.

Schmidt W. 2014. Update on reptile taxonomy post-publication of the Atlas and Red List of the Reptiles of South Africa, Lesotho and Swaziland. Afr. Herp News 61:8–10.

Schneider C. 2010. *Pachydactylus fasciatus* (Boulenger, 1888) Reproduction. Afr. Herp News 51:17–18.

Schneider C. 2013. *Platysaurus imperator* Broadley, 1962 Tail Regeneration. Afr. Herp News 60:21–22.

Smith G. 2011. The status of the Rinkhals *Hemachatus haemachatus* in the city of Cape Town metropolitan area, Western Cape, South Africa. Afr. Herp News 53:13–16.

Smolensky NL, Hibbitts TJ. 2011. *Agama agama agama* (Linnaeus, 1758) Diet. Afr. Herp News 53:50–51.

Stander R. 2013. *Duberria lutrix* (Linnaeus, 1758) Size. Afr. Herp News 59:35–36.

Stander R. 2013. *Pseudaspis cana* (Linnaeus, 1754) Diet. Afr. Herp News 59:36–37.

Stark T. 2013. *Homopus signatus* (Gmelin, 1789) Diet. Afr. Herp News 59:19–21.

Struijk RPGH. 2014. *Dromicodryas bernieri* Duméril, Bibron & Duméril, 1854 Climbing Behaviour. Afr. Herp News 61:26–27.

Swanepoel S. 2010. Geographical Distribution: *Meizodon s. semiornatus* (Peters, 1854). Afr. Herp News 50:40–41.

Taft JM, Greuel J, Maritz B. 2017. *Lamprophis guttatus* (A. Smith, 1844 (in error)) Diet. Afr. Herp News 65:11–12.

Tiar G, Rouag R, Ferrah C, Ziane N, Benyacoub S, Luiselli L. 2010. Prevalence of *Hemolivia mauritanica* (Apicomplexa: Adeleina) in the blood of an Algerian population of the spur-thighed tortoise, *Testudo graeca*. Afr. Herp News 50:14–21.

Tilbury C, Branch B. 2014. Geographical Distribution: *Polemon christyi* (Boulenger, 1903). Afr. Herp News 61:36–38.
Van de Loock D, Bates MF. 2016. *Dasypeltis atra* Sternfeld, 1913 Diet and Distribution. Afr. Herp News 63:16–18.
van Huyssteen R, Petford M. 2017. Geographical Distribution: *Aparallactus lunulatus lunulatus* (Peters, 1854). Afr. Herp News 65:36–38.
van Huyssteen R, Petford M. 2018. *Lamprophis guttatus* (A. Smith, 1844). Diet. Afr. Herp News 67:26–27.
van Huyssteen R, Petford M. 2019. *Prosymna stuhlmannii* (Pfeffer, 1893) Hunting Strategy. Afr. Herp News 70:28–30.
van Loon FHA. 2018. *Homopus signatus* Gmelin, 1789. Two-egg clutching. Afr. Herp News 67:25–26.
Vaz Pinto P, Branch WR. 2015. Geographical Distribution: *Dendroaspis jamesoni* (Thrail, 1843). Afr. Herp News 62:45–47.
Verburgt L, Bodbijl T, Marais J. 2018. *Elapsoidea sundevalli longicauda* (Smith, 1848). Long-tailed Garter Snake. Afr. Herp News 68:26–31.
Verburgt L, Broadley DG. 2012. Geographical Distribution: *Trachylepis planifrons* Peters, 1878. Afr. Herp News 57:20–22.
Verburgt L, Clark TK, Cauldwell AE, Branch WR. 2013. Geographical Distribution: *Lycophidion albomaculatum* (Steindachner, 1870). Afr. Herp News 59:46–48.
Verburgt L, Nicolau GK, Viljoen M. 2018. The Kalahari Purple-glossed snake (*Amblyodipsas ventrimaculata*; Roux, 1907). A poorly known and overlooked species in South Africa. Afr. Herp News 68:20–26.
Verburgt L, Van Tonder H, Bauer AM, Broadley DG. 2012. Geographical Distribution: *Pachydactylus katanganus* de Witte, 1953. Afr. Herp News 57:23–26.
Verburgt L, Verburgt UK, Bates MF. 2015. Geographical Distribution: *Gerrhosaurus auritus* (Boettger, 1887). Afr. Herp News 62:48–49.
Visser J. 2010. Variation in hemipenes of different colour phases of *Pseudaspis cana* (Linneaus) warrants re-evaluation of the species. Afr. Herp News 51:2–3.
Visser J. 2010. Geographical Distribution: *Kinixys spekii* (Gray, 1863). Afr. Herp News 51:22–24.
Visser J. 2010. *Bitis peringueyi* (Boulenger, 1888) Mortality. Afr. Herp News 52:16–18.
Visser J. 2012. Geographical Distribution: *Gonionotophis nyassae* Gunther, 1888. Afr. Herp News 56:32.
Visser J. 2012. Geographical Distribution: *Naja nivea* Linaeus, 1758. Afr. Herp News 56:32–33.
Warner JK, Kyle KJ. 2010. *Bitis gabonica gabonica* (Duméril, Bibron & Duméril, 1854) Diet. Afr. Herp News 51:13–15.
Witberg M. 2011. *Dasypeltis* (Wagler, 1830) Inter-species copulation. Afr. Herp News 53:45–46.
Witberg M. 2011. *Naja nivea* (Linnaeus, 1758) Juvenile colouration. Afr. Herp News 53:46–47.
Witberg M. 2011. Geographical Distribution: *Pachydactylus mariquensis* (Wermuth, 1965). Afr. Herp News 53:53–54.
Witberg M. 2012. *Pseudaspis cana* Linnaeus, 1754 Cannibalism/Reproduction. Afr. Herp News 57:11–14.

Amphibian Articles

Barej MF, Sandberger-Loua L, Doumbia J, Kouamé NG, Rödel M-O, Penner J. 2017. Geographical Distribution: *Phrynomantis microps* (Peters, 1875). Afr. Herp News 64:37–39.
Branch WR. 2017. *Phrynomantis affinis* (Boulenger, 1901) Maximum Size & Defensive Display. Afr. Herp News 65:12–14.
Ceríaco LMP, Bauer AM, Heinicke MP, Blackburn DC. 2016. Geographical Distribution: *Ptychadena mapacha* Channing, 1993. Afr. Herp News 63:19–20.
Conradie W, Bills R, Bok A. 2011. *Leptopelis bocagii* (Günther, 1864) Maximum size. Afr. Herp News 53:42–43.
Evans N. 2013. *Natalobatrachus bonebergi* Hewitt & Methuen, 1912 Extended breeding season. Afr. Herp News 60:15–18.

BIBLIOGRAPHY

Hopkins RW. 2012. Description of the tadpole of *Leptopelis bocagii* Günther, 1864, from Bulawayo, Zimbabwe. Afr. Herp News 56:17–18.
Hughes DF, Behangana M, Wilber L, Greenbaum E. 2018. *Amietia nutti* (Boulenger, 1896). Leech Parasitism. Afr. Herp News 69:15–19.
Jacobsen N. 2013. *Strongylopus grayii* (Smith 1849) Colour. Afr. Herp News 59:16–18.
Jacobsen NHG, Ralston C. 2012. Geographical Distribution: *Afrixalus knysnae* Loveridge, 1954. Afr. Herp News 58:17–18.
Lyakurwa JV, Thomas SM. 2017. *Ptychadena anchieta* (Bocage, 1867) Predation. Afr. Herp News 65:30–32.
Measey J. 2015. *Scolecomorphus vittatus* (Boulenger, 1895) Behaviour. Afr. Herp News 62:32–34.
Measey J, De Villiers A. 2014. *Xenopus laevis* (Daudin, 1802) Diet. Afr. Herp News 61:16–18.
Miguel AR, Conradie W. 2019. Geographical Distribution: *Hyperolius stictus* (Conradie, Verburgt, Portik, Ohler, Bwong, Lawson, 2018). Afr. Herp News 71:44–46.
Oliver LA, Scott-Prendini E. 2011. *Pyxicephalus* Tschudi 1838 Reproduction. Afr. Herp News 55:15–16.
Rebelo A. 2017. *Cacosternum capense* Hewitt, 1925 Toxic Effect. Afr. Herp News 65:24–26.
Smith G, Bax L. 2013. *Amietophrynus pantherinus* (Smith, 1828) Defensive behaviour. Afr. Herp News 59:13–16.
Tarrant J. 2012. Tapping into frog conservation: a new programme for the Endangered Wildlife Trust. Afr. Herp News 58:1–3.
Tarrant J, Cunningham MJ. 2011. Rediscovery of the elusive Amatola Toad *Vandijkophrynus amatolicus*: twice seen in twenty-six years. Afr. Herp News 55:1–6.
van Wyk JCP. 2012. *Pyxicephalus adspersus* Tschudi, 1838 Reproduction. Afr. Herp News 56:24.
van Wyk JCP, Marais S. 2011. Geographical Distribution: *Chiromantis xerampelina* (Peters, 1854). Afr. Herp News 53:52.
Verburgt L, Coetzer A. 2016. Geographical Distribution: *Xenopus muelleri* (Peters, 1844). Afr. Herp News 63:21–23.
Verburgt L, Yetman CA. 2012. Geographical Distribution: *Pyxicephalus adspersus* Tschudi, 1838. Afr. Herp News 57:18–20.
Visser J. 2010. *Breviceps adspersus adspersus* (Peters, 1882) Morphology. Afr. Herp News 51:7–9.
Visser J. 2010. Geographical Distribution: *Phrynomantis affinis* (Boulenger, 1901). Afr. Herp News 51:22.
Weisenberger ME. 2011. *Xenopus borealis* (Parker, 1936) Terrestrial activity. Afr. Herp News 53:44–45.
Yetman CA, Clark T, Dippenaar-Schoeman A. 2017. *Pyxicephalus adspersus* (Tschudi, 1838) Predation. Afr. Herp News 65:19–24.
Yetman CA, Verburgt L, Laurence SD. 2015. Geographical Distribution: *Pyxicephalus adspersus* (Tschudi, 1838). Afr. Herp News 62:50–53.

Combination Articles

Bourquin O, Gruener V. 2017. A note on the Herpetofauna of Modisa Camp (Botswana) and its surroundings. Afr. Herp News 64:9–26.
Conradie W, Doucette-Riise S, Vanhooydonck B, Engelbrecht H, Measey J, Tolley K. 2011. Herpetological survey of Rooipoort Nature Reserve, Northern Cape, South Africa. Afr. Herp News 53:35–41.
Weinell JL, Portik DM, Bauer AM. 2017. Noteworthy records of amphibians and reptiles from Mozambique. Afr. Herp News 65:3–10.
Witberg M. 2012. The herpetofauna of Schaapen Island, Langebaan, South Africa. Afr. Herp News 56:11–16.

TRACKS IN THE SAND

Following the journeys of professional herpetologists

JEANNE TARRANT

Taking the leap

The journey to becoming an amphibian conservation biologist

TRACKS IN THE SAND

Following the journeys of professional herpetologists

"Dad! There's a frog in the kitchen!" – this was something I regularly shouted out growing up in the countryside town of Underberg in the southern Drakensberg Mountains of South Africa. The call was of course for my father to remove said creature from my midst! I was not afraid of them necessarily, but they did gross me out a bit – and I certainly didn't have much interest in them…yet! Little did I know that these creatures would form the focus of my adult career – and that their protection would become a life-long passion. The offending animal in the case of my childhood encounters I now know is the Guttural Toad, *Sclerophrys gutturalis*, so called because of its deep guttural call.

Jeanne growing up.

Now unafraid to pick them up, I know that these toads have the most beautiful golden eyes, and a fascinating breeding behavior governed by female mate-selection. I now also know that the diversity of frogs extends well beyond just that of the toads, and that each of the 8000-odd species has a fascinating life-history and incredible adaptations that allow them to survive in a huge range of habitats, including sometimes very extreme conditions. Such as the Maluti River Frog, *Amietia vertebralis*, from Lesotho - which became my first study species - and is adapted to high-elevation rivers that freeze over in winter, when these frogs can be seen swimming under the ice. The species also has an umbrella-like outgrowth above their pupil inside their eyes – an adaptation to the extreme high UV at these high elevations.

So, how did I make the journey from screeching for toad removal, to studying one of the region's largest river frog species, to ultimately a career spanning 15 years with a primary focus on frogs? Having lived abroad in the U.K. for several years after my undergraduate studies, I was ready to return to South Africa, and having a Zoology degree under my belt (but completely unused so far), I was keen to enter the field of conservation and to start exploring my own country. On the flight back to South Africa, I sat next to a woman who told me about a correspondence degree in Environmental Science through the North-West University (NWU). With some trepidation, I enrolled for an Honors degree, and set off to Potchefstroom to register and

gather course material. It turned out that a requirement for the degree was a practical dissertation. I had no idea what to do it on – I thought something like butterflies might be nice – until mentioning the frogs I shouted about in my childhood home. Well, that was that. I was immediately introduced to Professor Louis du Preez, who asked me "Do you like frogs?". I think my face may have looked like a box of frogs, but so the journey began. There was a taxonomic puzzle to be solved on river frogs in Lesotho and the Drakensberg – not far from where I grew up. My first field trip to the Central Berg had me convinced that this beat a day in the office in London. By far.

The mountain-based frog study was upgraded to a MSc and followed by a PhD looking at South Africa's threatened frog species, in particular in relation to the amphibian fungal disease, chytrid.

Jeanne in the field, KZN 2020

Jeanne and environmental education

I also focused on the Pickersgill's Reed Frog, *Hyperolius pickersgilli* – surveying over 80 sites along the coast of KwaZulu-Natal Province – where the species was known only from eight localities and was Critically Endangered. Since then, the species has become the focus of a comprehensive and collaborative action plan, is now known from over 40 sites, and has been down-listed to Endangered. I was then fortunate enough to continue this work through both a post-doc through N.W.U. at the same time as joining the Endangered Wildlife Trust, one of South Africa's largest conservation N.G.O.s Very little N.G.O. -based frog conservation work had taken place up until this point (around 2012), but the timing was really good as in 2011 a conservation strategy had been published for the region's frog species.

This provided a comprehensive guide to where and what conservation effort was needed, and building off my research, I established the Threatened Amphibian Programme.
As an NGO-based organization, our work is entirely donor-dependent. And so, I entered the world of fund-raising! This was challenging, as was keeping track of budgets! With support from colleagues from the EWT, we managed to secure an initial first small grant for work in the Amathole mountains for the Critically Endangered Amathole Toad, *Vandijkophrynus amatolicus*. For three years, I was the sole face of the programme, until 2015 when a national government grant was secured to implement alien plant clearing work at sites for Pickergsill's Reed Frog. This was a game-changer in that it really helped developed the social component of the programme. The programme now employs nine people, and our work covers three provinces, nine focal species, and a snake! Our social change and educational work are pivotal to the success of the programme.

Without the fantastic team that now makes up the Threatened Amphibian Programme, my work could not cover the scope that it does. The recent inclusion of several Western Cape species has not only allowed me to travel to exciting new areas, but also be able to work with brilliant researchers and conservationists. Conservation is a challenging career – not just because it relies on hard work and is entirely funding-dependent (especially not easy when frogs attract relatively little funding), but because it can leave one feeling very despondent at the state of the world and the feeling that one is fighting a losing battle. But it is also an incredibly rewarding career. I am so privileged to visit beautiful places in the quest to protect them, and understand more about the species that inhabit them, to working with an amazing group of super passionate people, and of course to have learnt – and to keep learning something new every day – about these beautiful, fun, and fascinating animals – the frogs! In themselves, they are wonderful, but they also serve to connect us to the natural world and inspire learning about just about everything else - from the insects they rely on for food, to freshwater ecology, to bird calls when needing to identify them from their vast range of sounds.

I feel truly privileged to have been able to enter this fascinating world, and hope to inspire similar journeys, especially for those who might be sitting at home with a fear or phobia of frogs…or snakes! For people entering the realm of herpetological conservation and research, it may seem daunting that lofty qualifications are a necessity, or that jobs are scarce. From what I have learnt over the last 15 years – in a career that has been somewhat unexpected! - is that a passion for knowledge, a willingness to learn from those you meet along the way, and an openness to taking every opportunity as well as determined hard work, can lead to a very rewarding and satisfyingly unique career. Some words of

advice would be to get out of your comfort zone, stretch yourself and know you can do more than you ever thought you could.

In my case, the Threatened Amphibian Programme with the Endangered Wildlife Trust was a continuation of my post-graduate work, but also a vision of the first N.G.O.-based programme carrying out direct conservation action for frogs. I have been fortunate to have had the support in nurturing this vision into what the programme is today. Another aspect that really helps is that herpetologists are a genuinely great bunch of people! Perhaps stereotyped as 'tattooed snake freaks' (who in reality turn out to be the best of people!), in my experience, herpetologists are amongst the few biologists where a diverse mix of extraordinary personalities work together towards the common goal of ensuring that their favourite four-legged, or no-legged, creatures are understood, appreciated and protected. I've met and worked with some of the most fabulous, like-minded, knowledgeable people and look forward to continuing these relationships for a long time to come.

Sharing how important the focus of our work is, is also a critical element of herpetological work. Our study creatures are often misunderstood, undervalued, under-funded and even persecuted. Communicating that the opposite is in fact true is vital to garnering an appreciation of these animals and can also be a lot of fun! For example, our Leap Day for Frogs campaign held annually invites people from across South Africa to get excited about frogs! Some of my most rewarding moments have been chatting to kids on frogging evenings and watching the enlightenment on their faces as they learn something for the first time.

Kloof Event with Jeanne Tarrant talking to the crowd

Look! A tree Frog!

TRACKS IN THE SAND

Following the journeys of professional herpetologists

While it can be easy to sink into the doom and gloom of extinction messages, it is vital also to keep a sense of hope, to inspire our next generation to pick up the baton. In the words of Noam Chomsky "Optimism is a strategy for making a better future. Because unless you believe that the future can be better, you are unlikely to step up and take responsibility for making it so".

BIOGRAPHY:
Dr Jeanne Tarrant

Bachelor in Zoology (2001) Rhodes University, South Africa, Masters in Environmental Science (2008) and PhD in Zoology at North-West University, Potchefstroom, South Africa.
Jeanne manages the Endangered Wildlife Trust's Threatened Amphibian Programme (TAP in South Africa). This is the only N.G.O. with a focus on frog conservation, using threatened species as flagships to:

- protect the critical freshwater and terrestrial habitats
- improve the management of important amphibian habitat
- use research to monitor species and habitats to support conservation action
- promote behavioural change that reflects increased knowledge and recognition of the importance of frogs and their habitats.

Jeanne is responsible for project design and coordination, specialist knowledge, partner and donor relations, fundraising and project management. Almost all of her work is linked to threatened frog species, which are usually associated with very limited distribution ranges and specific habitat types, most of which are not protected or well-managed.

In 2020, Jeanne was the recipient of the Whitley Award, or "Green Oscar" for her work in conservation.

Fun facts:
I took up mountain biking at age 40, I try to find time for yoga regularly, I increasingly love gardening and getting grubby!

I have two boys, who get very upset if I don't catch the snakes spotted in the garden for them if they are not around!

Favourite amphibian: Kloof Frog, *Natalobatrachus bonebergi* – they are handsome little frogs that have a unique egg-laying technique – attaching them to branches or rocks above water, females then watch over them.

Twitter handle: JeanneT4Frogs, #FrogLady

Languages: English, some Afrikaans and isiZulu

ENVENOMATION BY *APARALLACTUS* (REPTILIA : SERPENTES)

C. TILBURY, J. REISSIG & L. KEMP

Bites from species of the aparallactine lamprophiid genus *Aparallactus* are rarely inflicted on humans and even more rarely reported. These small opisthoglyph snakes specialise in consuming venomous invertebrate prey items, feeding almost exclusively on centipedes, which are rapidly immobilised by venom components (Marais 2004). Nothing is known of the constituent toxins of the venoms produced by *Aparallactus*, but they are generally considered to be harmless to humans (Branch 1998; Broadley et al. 2003; Alexander and Marais 2007). We present here, a note on a second case of envenomation from *Aparallactus lunulatus* and the first documentation of envenomation from *A. nigriceps*.

Figure 1. Reticulated Centipede Eater, *Aparallactus lunulatus*

CASE 1

***Aparallactus lunulatus* (Peters, 1854)**

On the 23rd January 2018, a 400 mm long Reticulated Centipede Eater, *Aparallactus lunulatus,* was found crossing a road at 19:39 near Klaserie, Limpopo Province, South Africa (2431AC) and was positively identified as *A. lunulatus* (Fig. 1). While photographing the snake, the handler (a 34-year-old, healthy male weighing 135 kg with no significant medical history or previous snakebites) was bitten on the left index finger. The bite was inflicted on the infero-lateral aspect of the middle phalanx.

The snake was not immediately removed and chewed for approximately 10 seconds before spontaneously disengaging its jaws. Unlike viperids and elapids with their high-pressure venom delivery system that allows a stab and withdraw attack, the rear fanged Colubrids, with their low-pressure venom delivery system, first attach their jaws and then 'chew' in order to engage the rear fangs to lacerate the skin to maximise venom seepage. Bite marks were not visible; however, small blood droplets could be seen. No pain or discomfort was experienced, and blood droplets clotted within a few minutes.

Within seconds after the bite, a sensation of numbness to touch was noticed. Reduced sensation spreading from the bite site involved the entire finger, eventually extending to the mid-palm and dorsum of the hand. The sensation reached its full extent within approximately five minutes

after the bite. After a further 10–15 minutes sensation began to return, and after approximately 2 hours all sensations had returned to normal. No local swelling, discoloration or additional neurological symptoms developed.

CASE 2

***Aparallactus nigriceps* (Peters, 1854)**

On 13 October 2018 at 08:02, a healthy 24-year-old male weighing 65 kg was bitten by an adult Mozambique Centipede Eater, *Aparallactus nigriceps,* while handling it after discovering it in leaf litter just south of Inhambane, Mozambique (2435AB). The snake, measuring 144mm SVL + 40mm tail length, was identified by the following characters: midbody scales were in rows of 15; five upper labials, the 2nd and 3rd in contact with the eye and 4th and 5th in contact with the parietal scale; body had a light brown colouration, with a black head and dappled pale flecks on the rostrum; the black band on the neck extended six scales posteriorly, bordered at both ends by a beige-coloured band, one scale wide. The snake was not taken as a specimen. While handling the snake, it attached its jaws to the base of the handler's right thumb (Fig. 2a) and was allowed to chew for approximately 45 seconds before spontaneously disengaging its jaws. A small amount of blood oozed from the wound for a few minutes (Fig. 2b) before ceasing.

Within 15 minutes, a burning sensation in the thenar muscles of the thumb was noticeable, subsiding after a further 20 minutes although some tightness was felt at the joint of the thumb and erythema (redness of the skin due to the accumulation of blood in dilated capillaries) developed at the bite site. No other symptoms were experienced.

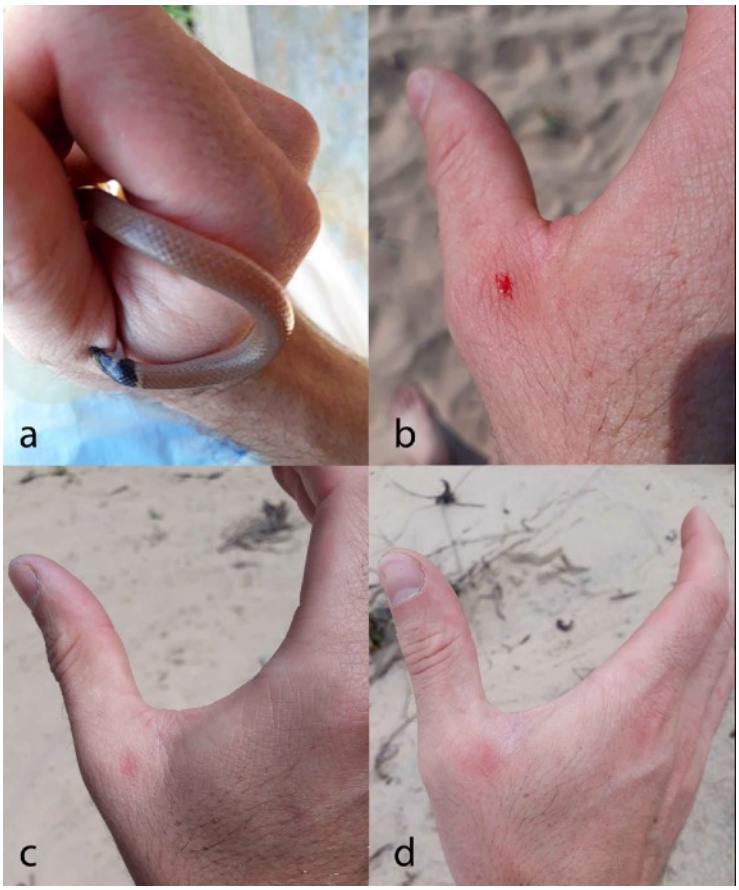


Figure 2. Signs resulting from the bite of Mozambique Centipede Eater, *Aparallactus nigriceps*

The following day (>24 hours) the bite site was still erythematous (Fig. 2c) and the metacarpal-phalangeal joint of the thumb was notably stiff. After 36 hours, some stiffness of the joint still persisted and the bite site had become itchy and appeared slightly inflamed. After 60 hours, the itchiness persisted and a small area of erythematous swelling had formed at the site (Fig. 2d). By the third day post envenomation (>72 hours), all symptoms and signs had resolved.

Due to the clinically mild nature of the envenomations, neither of the cases reported above underwent any biochemical or haematological laboratory investigations.

DISCUSSION

In the absence of venomic analyses or further clinical studies, one cannot but speculate that the bite from *A. nigriceps* recorded here might be considered to be typical of envenomation by this species and the clinical course as severe as might occur in an adult human. One of the authors (LK) has previously sustained two bites from *A. capensis* (both to the webbing between the fourth and fifth fingers) with no observed reactions. Moreover, Marais (2010) reported a bite to the index finger from the same species resulting in mild transient swelling and local skin sensitivity that lasted for two days. Based on this admittedly very limited data set, it would appear that the venoms of *A. nigriceps* and *A. capensis* have similar clinical effects in humans (i.e, mild local cytotoxic effects).

Weinstein and Warrell (2019) make brief reference to a bite sustained from a 460 mm *A. lunulatus* to an index finger lasting between 20–30 seconds. The clinical effects were limited to very slight, but sharp, pain from the fine teeth drawing less than a drop of blood. There were no other signs or symptoms and it is likely that it was a dry bite. In the presently described case of *A. lunulatus* envenomation, although it would appear from the symptoms experienced, that the clinical effect of the venom was similar to a short acting local anaesthetic injection, one cannot discount that this may have been a subjective interpretation of the symptoms and remains to be validated.

The observed feeding behaviour of *A. lunulatus* involves the snake seizing a centipede between its jaws, often near the head, and 'walking' its jaws up and down the body segments. The incapacitation of the centipede is rapid and occurs within minutes (Rasmussen 1974). Weinstein and Warrell (2019) speculate that the rapidity with which *Aparallactus* immobilises prey suggests the inoculation of rapidly acting prey-specific toxins into the centipedes' haemolymph, exposing its organs to circulating toxins and possibly disrupting its circulation due to trauma incurred during biting. The nature of these toxins and their mode of action are unknown.
At least 15 genera of rear-fanged snakes include species that prey on arthropods (Jackson et al. 2019), but none of these to date, including *Aparallactus*, appear to have had their venoms investigated. Due to the risk of retaliatory attack from venomous prey items, such as centipedes and scorpions, selection would favour predators of these arthropods that have a degree of immunity from their preys' venom and/or possess a highly efficient immobilising capacity for such arthropods in their venoms. Observed feeding behaviour in *Aparallactus capensis* suggests that these snakes may well be immune to the effects of centipede venom (FitzSimons 1962; Marais 2004), a defence which is likely for all species of *Aparallactus*.

Differences between the observed clinical effects of *A. lunulatus*, *A. capensis* and *A. nigriceps* may or may not reflect differences in venom composition. No feeding data exists for *A. nigriceps*, but while *A. capensis* is only known to prey on centipedes, *A. lunulatus* is quoted to include scorpions in its diet (Branch 1988, Spawls et al. 2002) and thus may have a different toxin arsenal to those species that only consume centipedes. Based on current evidence, bites from *Aparallactus* are uncommon unless handled, and their venom, while highly effective against arthropod prey items, appears to be of no medical significance to humans.

REFERENCES

Alexander GJ, Marais J. 2007. A Guide to the Reptiles of Southern Africa. Cape Town: Struik Publishers.

Branch WR. 1998. Field Guide to Snakes and other Reptiles of Southern Africa. Cape Town: Struik Publishers.

Broadley DG, Doria CT, Wigge J. 2003. Snakes of Zambia. An Atlas and Field Guide. Frankfurt am Main: Edition Chimaira.

FitzSimons VFM. 1962. Snakes of Southern Africa. Cape Town: Purnell and Sons.

Jackson TNW, Jouanne H, Vidal N. 2019. Snake venom in context: neglected clades and concepts. Front. Ecol. Evol. 7:332.

Marais J. 2004. A Complete Guide to the Snakes of Southern Africa. Cape Town: Struik Publishers.

Marais, J. 2010. *Aparallactus capensis* (Smith, 1849) Envenomation. Afr. Herp News 52:8.

Rasmussen G. 1974. Observations on snakes feeding in captivity. J. Herpetol. Ass. Afr. 12(1):18-20.

Spawls S, Howell K, Drewes R, Ashe J. 2002. A Field Guide to the Reptiles of East Africa. London: Academic Press.

Weinstein SA, Warrell DA. 2019. The African and Middle Eastern Burrowing Asps (*Atractaspis* spp.) and their Allies: Biology, Venom and Envenoming. Frankfurt am Main: Edition Chimaira.

SUBMITTED BY:

COLIN R. TILBURY
Department of Botany & Zoology, University of Stellenbosch, P.O. Box 347, Nottingham Road, 3280. KwaZulu Natal, South Africa.
E-mail: sacoltil@mweb.co.za

JENS REISSIG
Ultimate Creatures, P.O. Box 62, Kelvin, 2054. Gauteng, South Africa.
E-mail: jens@ultimatecreatures.com

LUKE KEMP
African Snakebite Institute, 814 Wapadrand Road, Wapadrand, 0081. Gauteng, South Africa.
E-mail: luke.kemp94@gmail.com

A NATURAL TEST FOR THE 'ENDOTHERM DIET HYPOTHESIS'

N. EVANS & G.J. ALEXANDER

FitzSimons (1962) states that Black Mambas (*Dendroaspis polylepis*) feed exclusively on 'warm-blooded prey'. However, the lack of a particular prey type in the list of recorded prey items for a species does not necessarily mean that the predator would not feed on it – the prey type may not have been recorded due to an incomplete dataset, or the natural histories of the predator and prey may make it unlikely that the predator has the opportunity to feed on a potential prey type (e.g., they may occupy different microhabitats). Thus, a proper test for FitzSimons' (1962) 'endotherm diet hypothesis' should include evidence that a Black Mamba had an opportunity to eat an ectotherm but chose not to. For example, Lloyd (1974) tested prey choice in Green Mambas (*Dendroaspis angusticeps*) by offering a captive individual a menu that included both ectotherms and endotherms and reported that only endothermic prey were consumed.

A study by Phelps (2002) provides a natural test for the endotherm diet hypothesis in *D. polylepis*. Phelps (2002) reported several examples of Black Mambas sharing refugia with snakes of other species (i.e., Mozambique Spitting Cobras [*Naja mossambica*] and Southern African Pythons [*Python natalensis*]) sometimes for extended periods of time. The fact that the cohabitants were of body sizes that could have been ingested by the Black Mambas indicate that *D. polylepis* is not ophiophagous. Similar observations of cohabitation of *D. polylepis* with Egyptian Cobras (*Naja haje*) have been reported by Spawls et al. (2018). Several Turner's Geckos (*Chondrodactylus turneri*) and Striped Skinks (*Trachylepis striata*) share the Black Mamba enclosure in the Hoedspruit Reptile Centre, oftentimes with skinks using the snakes' bodies as basking sites (C. Cooke pers. comm.). However, published accounts of cohabitation with Black Mambas appear to be restricted to other snake species.

Here we provide two observations of free ranging Black Mambas cohabiting with Nile Monitors (*Varanus niloticus*). On the 8th of May 2018, two Black Mambas were removed from the roof of a storeroom at a private residence in Sundial Avenue, Tongaat, KwaZulu-Natal Province, South Africa (29°33'22.16"S; 31°07'43.34"E, 2931CA). The male's total body length was 2 610 mm and body mass 2 600 g. The female measured 2 170 mm and weighed 1 490 g. The pair had taken up residence in the space between the ceiling boards and asbestos roof. A subadult *V. niloticus* (total length < 1 m) was also discovered sharing the cavity. Both Black Mambas were easily

large enough to ingest the lizard.

On the 13th of November 2020, a Black Mamba was reported hiding under a large concrete patio in Plumbstead Crescent, Reservoir Hills, Durban, KwaZulu-Natal Province (29°48'38.76"S; 30°57'32.20"E, 2930DD). The Black Mamba exited the cavity and moved into the dense bush below the property prior to our arrival and was thus not located or captured. However, a Nile Monitor approximately 1 100 mm in total length was discovered in the cavity. The homeowner reported regularly observing the monitor using the cavity as a refuge. The Black Mamba was first seen entering the cavity on the 6th of November 2020 and had been observed on at least one subsequent occasion before the 13th of November 2020, indicating that the Black Mamba and Nile Monitor must have occupied the refuge together. Judging from a video recorded by the homeowner, the Black Mamba was an adult > 2 m total length and would have easily been able to ingest the monitor. These observations show that these Black Mambas had the opportunity to feed on the two Nile Monitors but showed no indication of doing so. Our observations thus support FitzSimons' (1962) endotherm diet hypothesis, extending the test to include *V. niloticus*.

Using ancestral reconstruction to investigate the evolutionary history of diet in elapids, Maritz et al. (2021) conclude that the endothermic dietary specialization in *Dendroaspis* is a derived condition that has evolved from a generalized ectothermic ancestral diet. Maritz et al. (2021) posit that this change is the result of an increase in body size in *Dendroaspis* (which allowed for the ingestion of bulky endotherms), but this explanation fails to explain why ectotherms now appear to be excluded from the *Dendroaspis* diet – if a lizard meal is readily available, then a Black Mamba should benefit by eating it. Conceivably, the restriction of *D. polylepis* diet to endotherms may represent some physiological or venom-related trade-off. For example, Stuginski et al. (2018) show that digestion is more energy efficient in pit viper (*Bothrops*) species which are dietary specialists in comparison to generalists, and Daltry et al. (1996) demonstrate that venom is closely associated with diet in Malayan Pit Vipers (*Calloselasma rhodostoma*). However, the potential benefits of dietary specialization have not yet been investigated in *Dendroaspis*.

The only published report of Black Mambas feeding on prey items other than mammals and birds is the reported consumption of termite alates by a 2 m individual (Branch 1991). However, this observation was not made by Branch (1991) but was extracted by him from the South African National Parks Board annual reports. No information is provided as to who originally made the observation, its credibility or the veracity of the snake's identification. In our opinion, this record should be viewed with utmost circumspection given that termites differ so dramatically from mammals and birds as prey. It is also difficult to imagine how a large snake could manipulate such small prey items to achieve ingestion. We thus recommend that this record be removed from future analyses of diet in *Dendroaspis*. Many snakes show ontogenetic shifts in diet, with juveniles feeding on ectothermic prey, shifting to endothermic prey as they mature (Greene 1997).

This common pattern may result from the fact that, because snakes are gape-limited predators, juveniles may simply be unable to feed on the prey types eaten by adults due to their smaller body size (Branch et al. 1995). Feeding records of juvenile *D. polylepis* are few, apparently due to their rapid growth (FitzSimons 1962) and/or their more cryptic life history. This is borne out by the fact that only 7.3% of a sample of 314 Black Mambas captured in KwaZulu-Natal Province were < 1 m (total length) and only 12.7% were < 1.5 m. Average total length for this sample was 2.09 m. (N. Evans, unpubl. data). Phelps (2002) does report juveniles consuming 'skinks and other small lizards' under artificial captive conditions, but Branch et al. (1995) found no evidence of subadult or juvenile *D. polylepis* consuming anything other than endothermic prey in a natural setting. Certainly, juvenile *D. polylepis* are capable of killing and are large enough to ingest small rodents (FitzSimons 1962) which would permit a strictly endotherm diet irrespective of the mamba's age or size. However, the question of whether juvenile *D. polylepis* are obligate endotherm specialists can only be assessed with the collection of more feeding records, specifically in a natural setting.

REFERENCES

Branch WR. 1991. Unusual herpetological observations in the Kruger National Park. Afr. Herp News 16:39–40.

Branch WR, Haagner GV, Shine R. 1995. Is there an ontogenetic shift in mamba diet? Taxonomic confusion and dietary records for black and green mambas (*Dendroaspis*: Elapidae). Herpetol. Nat. Hist. 3:171–178.

Daltry JC, Wüster W, Thorpe RS. 1996. Diet and snake venom evolution. Nature 379:537–540.

FitzSimons VFM. 1962. Snakes of southern Africa. Cape Town: Purnell.

Greene HW. 1997. Snakes: The evolution of mystery in nature. Berkeley, California: University of California Press.

Lloyd CNV. 1974. Feeding behaviour in the green mamba *Dendroaspis angusticeps* (A. Smith). J. Herpetol. Assoc. Afr. 12:12–16.

Maritz B, Barends JM, Mohamed R, Maritz RA, Alexander GJ. 2021. Repeated dietary shifts in elapid snakes (Squamata: Elapidae) revealed by ancestral state reconstruction. Biol. J. Linn. Soc. doi.org/10.1093/biolinnean/blab115

Phelps T. 2002. A study of the black mamba (*Dendroaspis polylepis*) in KwaZulu-Natal, South Africa, with particular reference to long-term-refugia. Herpetol. Bull. 80:7–19.

Spawls S, Howell K, Hinkle H, Menegon M. 2018. Field guide to East African reptiles. London: Bloomsbury.

Stuginski DR, Navas CA, de Barros FC, Grego KF, Martins M, de Carvalho JE. 2018. The role of feeding specialization on post-prandial metabolic rate in snakes of the genus *Bothrops*. Zool. Sci. 35:373–381.

SUBMITTED BY:

NICK EVANS
KwaZulu-Natal Amphibian & Reptile Conservation
Email: nickevanskzn@gmail.com

GRAHAM J. ALEXANDER
Animal, Plant and Environmental Sciences
University of the Witwatersrand, South Africa
Email: graham.alexander@wits.ac.za

Pachydactylus rugosus
Smith, 1849
Rough Scaled Thick-toed Gecko
MAXIMUM SIZE

K. FINN

Rough Scaled Thick-toed Geckos *(Pachydactylus rugosus)* are medium-sized geckos that occur from the Kaokoveld in Namibia southwards to the Nama-Karoo in the Northern Cape Province of South Africa (Branch 1998). Throughout their range they are associated with dry riverbeds, and are typically found under stones, the bark of trees, or fallen logs (FitzSimons and Brain 1958; Bauer 2014). They also occur under human debris and around buildings (Bauer and Branch 2001; Finn, pers. obs.). FitzSimons and Brain (1958) mention this species was commonly encountered under stones and fallen logs in the Kgalagadi Transfrontier Park, while Bauer and Branch (2001) concluded it was widespread but not abundant in the Richtersveld National Park.

On 21 May 2021 I found a large male *P. rugosus* (Fig. 1) under a fallen Sociable Weaver (*Philetairus socius*) nest about 1 km from Van Zylsrus, Northern Cape Province, South Africa (Fig. 1, 2622CC, ca. 935m asl). The individual was found in Southern Kalahari Mekgacha (Azi3) on the ecotone with Kathu Bushveld (SVk12) on white sandy substrate (Mucina and Rutherford 2011). The location was a flat sandy plain dominated by grasses with scattered Three Thorn (*Rhigozum trichotomum)* bushes, Black Thorn (*Senegalia mellifera*) trees, and Camel Thorn (*Vachellia erioloba*) trees (Fig. 2).

Figure 1. Rough Scaled Thick-toed Gecko (*Pachydactylus rugosus*) male from Van Zylsrus, Northern Cape Province, South Africa. Photo: K. Finn

Figure 2. Habitat from where the male *Pachydactylus rugosus* reported in this note was found, showing a Sociable Weaver (*Philetairus socius*) nest in a Camel Thorn (*Vachellia eriloba*) tree.

While the location was in close proximity to the dry Kuruman River, it lacked any rocky deposits. I measured the individual with a standard ruler, photographed it (https://www.inaturalist.org/observations/79655315; Ueda 2021), and then released it back at the point of capture. The gecko's snout-vent length (SVL) was 62 mm with a total length of 96 mm. Branch (1998) reports a maximum SVL of 51 mm for males. This represents a 21.6% increase in known maximum size for male *Pachydactylus rugosus*.

REFERENCES

Bauer, AM. 2014. *Pachydactylus rugosus* (Smith, 1849). In Bates MF, Branch WR, Bauer AM, Burger M, Marais J, Alexander GJ, de Villiers MS, editors. Atlas and Red List of the Reptiles of South Africa, Lesotho and Swaziland. Suricata 1. Pretoria: South African National Biodiversity Institute.

Bauer AM, Branch WR. 2001. The herpetofauna of the Richtersveld National Park and the adjacent northern Richtersveld, Northern Cape Province, Republic of South Africa. Herpetol. Nat. Hist. 8:111–160.

Branch WR. 1998. Field Guide to the Snakes and other Reptiles of Southern Africa. 3rd Edition. Cape Town: Struik Publishers.

FitzSimons V, Brain CK. 1958. A short account of the reptiles of the Kalahari Gemsbok National Park. Koedoe 1:99–104.

Mucina L, Rutherford MC. 2011. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. Pretoria: South African National Biodiversity Institute.

Ueda K. 2021. iNaturalist Research-grade Observations. iNaturalist.org. Occurrence dataset https://doi.org/10.15468/ab3s5x accessed via GBIF.org on 2021-08-07. https://www.gbif.org/occurrence/3124734688

SUBMITTED BY:

KYLE FINN
University of Pretoria, Department of Zoology and Entomology, Lynnwood Road, Hatfield, Pretoria 0002
Email: kyletfinn@gmail.com

Dasypeltis scabra
(Linnaeus, 1758)
Rhombic Egg-eater
FEEDING

J.M. BARENDS, R.A. MARITZ & B. MARITZ

African egg-eating snakes of the genus *Dasypeltis* feed obligately on bird eggs, but unlike most other oophagous snakes, they generally consume only the liquid contents of eggs (Bates and Little 2013). Most of these species, including the Rhombic Egg-eater *D. scabra* (Linnaeus, 1758), possess unique morphological structures in the oesophageal region which are used to crush and drain ingested eggs. This specialised approach to feeding allows them to swallow only the liquid content of eggs without the eggshells, which they regurgitate immediately afterwards (Gans 1952; Branch 1998).
As part of an ongoing investigation into the relationship between feeding and growth of *D. scabra*, we currently maintain a colony of 11 individually housed, wild-caught individuals from Cape Town, Western Cape Province, South Africa (Cape Nature Permit No: CN44-31-11003, University of the Western Cape Animal Research and Ethics clearance: AR 20/1/2). At least once per month, we feed these individuals on an assortment of locally-sourced bird eggs. Eggs are weighed before being offered and after each meal the regurgitated eggshell remains are collected and weighed to establish the mass of the liquid content consumed.

On 2 March 2021, we presented a large adult female Rhombic Egg-eater (snout-vent length: 936 mm, mass: 220.3 g) with a finch egg (width: 14.9 mm, mass: 2.4 g) and a chicken egg (width: 43.5 mm, mass: 53.9 g) which we left in her enclosure overnight. Upon inspection the following day, both eggs were gone and only the regurgitated shell of the chicken egg was present, identified by colour and size (shell mass: 7.2 g; Fig. 1).

Figure 1. Regurgitated remains of a chicken egg consumed by a large adult female Rhombic Egg-eater (*Dasypeltis scabra)* on 2 March 2021. Photo: J.M. Barends

The snake's enclosure only contained paper towels as substrate, newspaper for cover, and a ceramic water bowl, leaving little chance of missing the shell remains of the finch egg. The finch egg was presumed to have been consumed in its entirety. This snake had also on previous occasions failed to regurgitate the shells of small eggs that she had consumed, including one occasion when she regurgitated the shell of only one of three eggs consumed (ca. 4 g each) and two separate occasions where she failed to regurgitate any shells after consuming four and five eggs (c.a. 3 g each), respectively.

Given the large size of this individual and the comparatively small size of the finch egg (snake mass:egg mass ratio 91:1), the eggshell remains may have been swallowed involuntarily. Her previous meals when shells were regurgitated involved larger eggs (ratio generally about 15:1). In this case, the crushed remains of the finch egg may have been too small to be mechanically retained in the oesophageal region, which could explain why they were not regurgitated.

The liquid contents of bird eggs are rich in protein, calories, lipids, and water but only contain trace amounts of calcium (Stadelman and Cotterill 1995). Conversely, eggshells mostly consist of calcium and other minerals. Because *Dasypeltis* do not generally consume eggshells apart from swallowing small fragments involuntarily during the egg-breaching process (Gans 1952; Bramwell 2006), their diets are largely calcium-deficient. However, *Dasypeltis* are known to sometimes consume eggs with well-developed embryos (de Waal 1978) which could provide them with high quantities of calcium and other nutrients. The non-regurgitation of eggshells may act as a mechanism in which calcium is accumulated or recovered rapidly. The snake in question had recently (20 January 2021) laid a large clutch of 19 infertile eggs (total mass: 57.2 g, dimensions: 17.1–30.6 x 12.6–19.2 mm; Fig. 2) that likely depleted her calcium reserves. On the other occasions that this snake failed to regurgitate eggshells, she had also recently laid a clutch of eggs.

Figure 2. A clutch of 19 infertile eggs deposited by the captive *Dasypeltis scabra* on 20 January 2021. Photo: J.M. Barends

Direct observations of *Dasypeltis* predating wild bird eggs are rare (Maritz and Maritz 2020). In many cases, these snakes are only confirmed as nest predators by the presence of regurgitated eggshells found near nests (Bates and Little 2013), although occasional reports of predation on eggs in the wild have been published (e.g, Van de Loock and Bates 2016) building on observations by Visser (1971), our note provides a detailed report of *Dasypeltis* consuming bird eggs in their entirety without regurgitating the shell remains. If wild *Dasypeltis* do occasionally consume bird eggs without regurgitating the shells, the lack of shell remains near nests does not rule them out as potential culprits and suggests that the estimated rate of predation of eggs by *Dasypeltis* relative to other nest predators may be underestimated.

REFERENCES

Bates MF, Little IT. 2013. Predation on the eggs of ground-nesting birds by *Dasypeltis scabra* (Linnaeus, 1758) in the moist highland grasslands of South Africa. Afr. J. Herpetol. 62: 125–134.

Branch B. 1998. Field guide to the snakes and other reptiles of southern Africa. 3rd Edition. Cape Town: Struik.

Bramwell C. 2006. Feeding ecology, sexual dimorphism and reproduction in *Dasypeltis scabra* (Colubridae). [Honours thesis]. Johannesburg: University of the Witwatersrand.

de Waal SWP. 1977. The Squamata (Reptilia) of the Orange Free State, South Africa. [PhD thesis]. Durban: University of Natal.

Gans C. 1952. The functional morphology of the egg-eating adaptations in the snake genus *Dasypeltis*. Zoologica 37: 209–244.

Maritz RA, Maritz B. 2020. Sharing for science: high-resolution trophic interactions revealed rapidly by social media. PeerJ 8:e9485.

Stadelman WJ, Cotterill OJ. 1995. Egg science and technology. New York: CRC Press.

Van de Loock D, Bates MF. 2016. *Dasypeltis atra*, Montane Egg-eater: Diet and distribution. African Herp News. 63: 16–18.

Visser. J. 1971. Notes on captive egg eaters (*Dasypeltis scabra)* J. Herpetol Assoc. Afri. 7: 7-9.

SUBMITTED BY:

JODY M. BARENDS
Department of Biodiversity and Conservation Biology, University of the Western Cape, Bellville, Cape Town, South Africa.
jbarends99@gmail.com

ROBIN A. MARITZ
Department of Biodiversity and Conservation Biology, University of the Western Cape, Bellville, Cape Town, South Africa.
maritzrobin.a@gmail.com

BRYAN MARITZ
Department of Biodiversity and Conservation Biology, University of the Western Cape, Bellville, Cape Town, South Africa.
bryanmaritz@gmail.com

Salamandra algira
Bedriaga, 1883
Atlas Fire Salamander
LARVAL DIET

Y. EL KOURCHI, S. FAHD, D. ESCORIZA & J. BEN HASSINE

Salamander (Order Caudata) larvae are considered important predators in their aquatic habitats, feeding primarily on small invertebrates and amphibian larvae (Holomuzki and Collins 1987; Durant and Hopkins 2008; Escoriza et al. 2020). However, there are few studies assessing the larval diet of the genus *Salamandra* (García-París et al. 2004; Lanza et al. 2007). This note presents the first data on the larval diet of (*Salamandra algira)*.

Figure 1. Atlas Fire Salamander (*Salamandra algira splendens*) breeding site in Talassemtane National Park (north-western Morocco).

As part of a broad ecological study of Atlas Fire Salamander ecology in Talassemtane National Park in north-western Morocco (35°05'21.1"N, 5°09'21.6"W) in February 2019, we captured three *S. algira splendens* larvae in a cattle trough located at 1 286 m elevation, with a surface area of 53 m^2 and average depth of 980 mm (Fig. 1). Dip net sampling was conducted using a 500 µm mesh size net. Collected larvae were euthanized by submerging them in 6 g/L tricaine methanesulfonate before being fixed *in situ* in 70 % ethanol prior to returning to the laboratory. In the laboratory, larvae were weighed to the nearest 0.001 g using a digital milligram scale (Digital Jewellery Scale) and total length (TL) was measured to the nearest 0.01 mm using a digital calliper (VWR Callipers Digital, model VWRI819-0012). The stomach and intestines were removed, and the contents spread in a Petri dish. The prey items were separated, identified and quantified using a stereomicroscope (Nikon SMZ 745 C-PSN) with an incorporated micrometer to measure the size of the prey items. The items were identified to order based on dichotomous keys provided by Tachet et al. (2000).

Figure 2. **(A)** Stomach and intestinal contents of a larval Atlas Fire Salamander (*Salamandra algira splendens*) captured in Talassemtane National Park and **(B)** Pseudoscorpion (family Neobisiidae) found in the stomach content of the studied larvae.

The gastric content of one specimen (TL = 55.96 mm; mass = 0.611 g) showed a wide range of invertebrate prey items (Table 1, Fig. 2a). A total of eight taxa were identified (with the quantity of each prey taxon indicated in brackets): Cladocera (3), Ostracoda (2), Copepoda (5), Nematoda (1), Diptera larvae (1), adult Coleoptera (1) and Coleoptera larvae (1). Unidentified plant material was also present. In addition to these aquatic prey items, we found a pseudoscorpion (Family Neobisiidae: length = 2.14 mm; Fig. 2b). This is the first mention of pseudoscorpions as a prey for *S. algira* larvae. The gastric contents of the other two captured larvae revealed the presence of Ephemeroptera larvae, Odonata larvae, Diptera adults (Chironomidae) and Gastropoda, in addition to the prey items found within the first larva (Table 1).

Table 1. Stomach content of Atlas Fire Salamander (*Salamandra algira splendens*) larvae in Talassemtane National Park (north-western Morocco). M = mass (g) ; TL = total length (mm); n = number of prey items recorded in the stomachs of each larva.

	LARVA 1		LARVA 2		LARVA 3	
	M = 0.611	TL = 55.96	M = 0.475	TL = 42.31	M = 0.523	TL = 45.56
PREY ITEMS	**n**		**n**		**n**	
Cladocera	3		4		2	
Copepoda	5		2		4	
Ostracoda	2		0		5	
Diptera larva (Chironomidae)	1		9		5	
Coleoptera adult	1		0		5	
Coleoptera larva (Dryopidae)	1		0		0	
Ephemeroptera larva (Baetidae)	0		1		1	
Odonata larva (Aeshnidae)	0		1		0	
Nematoda	1		0		0	
Gastropoda	0		0		1	
Pseudoscorpion	1		0		0	

Larvae of the genus *Salamandra* opportunistically prey on a wide range of small invertebrates (García-París et al. 2004). Common items found are Copepoda, Cladocera, Ostracoda, Diptera (larvae and adults), Ephemeroptera larvae, Trichoptera larvae, Plecoptera larvae and Coleoptera larvae (Degani and Mendelssohn 1979; Bas 1986; Kuzmin 1994; Bressi et al. 1996; Costa et al. 2014, 2017).
In addition, cannibalism has been observed when prey is scarce or the density of the larvae is high (Degani 1993; Bressi et al. 1996; Escoriza and Comas 2007, Escoriza and Ben Hassine 2019).

According to Bressi et al. (1996) and Costa et al. (2014), salamander larvae feed on terrestrial prey that accidentally fall into the water. The pseudoscorpion (Family Neobisiidae) we found in the stomach of the larva is likely accidental prey, given that this group of arthropods are terrestrial.

ACKNOWLEDGEMENTS

We are grateful to K. Sammet for the identification of the pseudoscorpion specimen. We also thank S. El Yaagoubi for her assistance identifying prey. All field work, including specimen collection, was authorized by a scientific permit provided by the Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification, Rabat, Morocco (ref. 18/2021 DEF/DLCDPN/DPRN/CFF).

REFERENCES

Bas S. 1986. Los anfibios y reptiles de Ancares (Lugo, N.O Espana). Munibe 38:89–98.

Bressi N, Dolce S, Stoch F. 1996. Observations on the feeding of Amphibians: IV. Larvae diet of the Fire Salamander, *Salamandra salamandra salamandra* (Linnaeus, 1758), near Trieste (north eastern Italy) (Amphibia, Caudata, Salamandridae). Atti Mus. Civ. Stor. Nat. Trieste. 47:275–283.

Costa A, Baroni D, Romano A, Salvidio S. 2017. Individual diet variation in *Salamandra salamandra* larvae in a Mediterranean stream (Amphibia: Caudata). Salamandra. 53:148–152.

Costa A, Salvidio S, Romano A, Baroni D. 2014. Larval diet of *Salamandra salamandra* (L. 1758): preliminary results on prey selection and feeding strategy. Proc. Atti X Congr. Naz. Soc. Herpetol. Italica, Genova 33–38.

Escoriza D, Comas MM. 2007. Description of a new subspecies of *Salamandra algira* Bedriaga, 1883 (Amphibia: Salamandridae) from the Beni Snassen massif (Northeast Morocco). Salamandra 43:77–90.

Escoriza D, Ben Hassine J. (2019). Amphibians of North Africa. London: Academic Press.

Escoriza D, Ben Hassine J, Boix D, Sala J. 2020. Diet of larval *Pleurodeles waltl* (Urodela: Salamandridae) throughout its distributional range. Limnetica 39:667–676.

Degani G. 1993. Cannibalism among *Salamandra salamandra* (L.) larvae. Israel J. Zool. 39:125–129.

Degani G, Mendelssohn H. 1979. The food of Salamandra salamandra (L.) tadpoles in Israel in different habitats. Proc. X Sci. Conf. Israel Ecol. Soc:19–45.

Durant SE, Hopkins WA. 2008. Amphibian predation on larval mosquitoes. Can. J. Zool. 86:1159–1164.

García-París M, Montori A, Herrero P. 2004. Fauna Ibérica vol. 24. Amphibia: Lissamphibia vol. 45. Madrid: Consejo Superior de Investigaciones Científicas.

Holomuzki JR, Collins JP. 1987. Trophic dynamics of a top predator, *Ambystoma tigrinum nebulosum* (Caudata: Ambystomatidae), in a lentic community. Copeia 1987:949–957.

Kuzmin SL. 1994. Feeding ecology of *Salamandra* and *Mertensiella*: a review of data and ontogenetic evolutionary trends. Mertensilla 4:271–286.

Lanza B, Andreone F, Bologna MA, Corti C, Mazzetti E. 2007. Fauna d'Italia. Amphibia. Bologna: Edizioni Calderini Editoria Specializzta S.r.l.

Tachet H, Richoux PH, Bournaud M, Usseglio-Polatera P. 2000. Invertébrés d'eau douce: systématique, biologie, écologie. Paris: CNRS éditions.

SUBMITTED BY:

YASSINE EL KOURCHI
Laboratoire Ecologie, Systématique, Conservation de la Biodiversité (LESCB), Unité de Recherche Labellisée CNRST N°18. Faculté des Sciences de Tétouan, Université Abdelmalek Essaadi. Morocco.
E-mail: yassine.elkourchi@gmail.com

SOUMIA FAHD
Laboratoire Ecologie, Systématique, Conservation de la Biodiversité (LESCB), Unité de Recherche Labellisée CNRST N°18. Faculté des Sciences de Tétouan, Université Abdelmalek Essaadi. Morocco.
E-mail: soumiafahd@yahoo.fr

DANIEL ESCORIZA
GRECO, Institute of Aquatic Ecology, University of Girona, Campus Montilivi, 17071 Girona, Spain.
E-mail: daniel_escoriza@hotmail.com

JIHENE BEN HASSINE
Faculty of Sciences of Tunis, 2092 Tunis, Tunisia.
E-mail: jihenbenhassine@gmail.com

GEOGRAPHICAL DISTRIBUTIONS

SCINCIDAE

Scelotes bidigittatus

FitzSimons, 1930

Lowveld Dwarf Burrowing Skink

Scelotes fitzsimonsi

Broadley, 1994

FitzSimons' Dwarf Burrowing Skink

Scelotes vestigifer

Broadley, 1994

Coastal Dwarf Burrowing Skink

P. R. JORDAAN

The geographical distribution of several reptile taxa occurring along the Mozambique coastal plain in northern KwaZulu-Natal Province, South Africa, abruptly and suspiciously end along the Mozambique border (see descriptions in Bates et al. 2014; Jordaan et al. 2020). Such obvious absences in reptile diversity over this artificially created section of border (Roque 2010), should be considered an artefact of inadequate structured sampling efforts and reporting for the extreme southern section of Mozambique. This is evident when considering that even high-density species observed elsewhere in Maputaland, such as the Large-scaled Grass Lizard *Chamaesaura macrolepis* (Cope, 1862) (Bruton and Haacke 1980), have only recently been reported in the area in question (Jordaan 2020). This lack of herpetofaunal assessment, combined with the cryptic nature of small-bodied, fast-burrowing fossorial reptiles, (e.g., *Scelotes* spp.), may cause such species to avoid detection during assessments (Maritz and Alexander 2008). The genus *Scelotes* Fitzinger 1826 currently consists of a group of 21–24 fossorial skinks exhibiting varying degrees of limb reduction and loss (Whiting et al. 2003; Bates et al. 2014). During structured herpetofaunal surveys conducted during 2020 in Maputo Special Reserve (MSR), several fossorial reptiles were encountered including five *Scelotes* species, two of which represent the northern-most geographical distributions for the species in Mozambique (*Scelotes fitzsimonsi* Broadley, 1994 and *Scelotes vestigifer* Broadley, 1994), and the third (*Scelotes bidigitatus* FitzSimons, 1930) representing the first records for the species in the country. *Scelotes arenicolus* (Peters, 1854) and *Scelotes mossambicus* (Peters, 1882) were also recorded during surveys but were restricted to the western sections of the protected area.

Whilst specialised surveying methods incorporating excavation is generally

Table 1. The locations, pitfall array centre point, and capture data for *Scelotes fitzsimonsi* Broadley, 1994 as derived from the 2020 pitfall and funnel trapping survey in Maputo Special Reserve. SVL = Snout-vent length.

Date	Pitfall Array Central Point Coordinates	Trap Type	SVL (mm)	Tail (mm)	Total Length (mm)	Mass (g)	Notes
2020.03.11	26°25'33.80" S 32°55'8.44" E	Small funnel	49	50	99	0.6	Captured in coastal dune forest.
2020.03.14	26°25'33.80" S 32°55'08.44" E	Terminal funnel	54	47	101	1.0	Captured in coastal dune forest. Tail regeneration
2020.03.15	26°25'33.80" S 32°55'08.44" E	Small funnel	51	53	104	1.0	Captured in coastal dune forest.
2020.03.15	26°25'33.80" S 32°55'08.44" E	Terminal funnel	54	54	108	1.2	Captured in coastal dune forest. Tail regeneration.
2020.03.19	26°25'33.80" S 32°55'08.44" E	Large funnel	52	62	114	9.0	Captured in coastal dune forest.
2020.03.24	26°24'07.47" S 32°54'35.18" E	Pitfall	47	52	99	0.7	Captured in sand forest.
2020.03.27	26°25'33.80" S 32°55'08.44" E	Pitfall	31	10	41	0.4	Captured in coastal dune forest. Caudal autotomy
2020.03.27	26°25'33.80" S 32°55'08.44" E	Terminal funnel	40	35	75	0.5	Captured in coastal dune forest.
2020.03.11	26°24'21.41" S 32°52'43.31" E	Pitfall	39	32	71	0.4	Captured in sand forest.

considered necessary to quantify soil adapted reptiles *in situ* (Maritz and Alexander 2008; Measey et al. 2009), their periodic movement over the soil surface or through shallow substrate may allow fossorial species to be captured during pitfall and funnel trapping (Khunz et al. 2005; Henderson et al. 2016; Verburgt et al. 2018). As part of the faunal monitoring in MSR, a series of pitfall and funnel trap arrays were installed across the protected area, supplemented by some preliminary fossorial assessments. The structure of the pitfall and funnel trap arrays were adapted from the basic structure in Verburgt et al. (2018) as described in Jordaan et al. (2020). Arrays were distributed according to vegetation types as designated by the National Directorate of Conservation Areas, Mozambique (DNAC 2010). The preliminary fossorial herpetofaunal assessment was adapted by combining elements from both Maritz and Alexander (2008) and Measey et al. (2009), as discussed and described in Jordaan et al. (2019). All specimens were identified from descriptions in Branch (1998), using a combination of limb presence/absence and structure, scale counts, and colour patterns. Captured specimens were measured (mm) and weighed (kg) during processing before being released.

A single *S. bidigittatus* was encountered on the 17th of July 2020 during a quantitative fossorial quadrat survey assessing soil-living herpetofaunal density and diversity in *Helichrysum kraussii* encroached dry hygrophilous grassland (as per DNAC 2010) on white sand (26°28'00.60"S 32°44'18.09"E) excavated to a minimum depth of 0.25m (Jordaan et al. 2019). As described in Branch (1998) for *S. bidigittatus*, the specimen had no front limbs, with the small reduced hindlimbs having two toes each and exhibiting typical colouration for the species including a blue tail. This species has previously been suspected to occur in southern Mozambique (Marais and Bauer 2014a), but the specimen in question is the first confirmation of *S. bidigittatus* in the country. The record was uploaded to the Animal Demography Unit Virtual Museum as record no 179227 (FitzPatrick Institute of African Ornithology 2021). A total of 13 quadrats of 4 m^2 (2 m x 2 m) each, representing 52 m^2, were surveyed at the site. This included the excavation, sorting, and sifting of sand to expose all reptile and amphibian specimens (Jordaan et al. 2019). From the quantified sample, the estimated density for *S. bidigittatus* is 0.02 individuals/m^2 for the site. In addition to the *S. bidigittatus* specimen, *Acontias parietalis* (Broadley, 1990), *Amblyodipsas m. microphthalma* (Bianconi, 1852), *Scelotes arenicolus*, and *Zygaspis arenicolus* (Broadly and Broadly, 1997) were also exposed as part of the same survey.

Several *S. fitzsimonsi* and *S. vestigifer* specimens were encountered during the 2020 MSR pitfall and funnel trap survey. Both species have been reported from Ponta du Ouro (Marais and Bauer 2014b,c) but no prior records for either species could be located further north in Mozambique. Specimens of *Scelotes fitzsimonsi* specimens were primarily distinguished from *S. mossambicus,* which exhibits a similar colour pattern,

Table 2. The locations and capture data for *Scelotes vestigifer* Broadley, 1994 as derived from the 2020 pitfall and funnel trapping survey in Maputo Special Reserve.

Date	Pitfall Array Central Point Coordinates	Trap Type	SVL (mm)	TAIL (mm)	Total Length (mm)	Mass (g)	Notes
2020.02.01	26°23'14.95" S 32°49'29.65" E	Pitfall	67	51	118	2.0	Captured in sand forest. Caudal autotomy.
2020.03.12	26°22'45.47" S 32°55'15.54" E	Pitfall	60	45	105	1.2	Captured in coastal dune forest. Tail regeneration.
2020.03.14	26°22'45.47" S 32°55'15.54" E	Pitfall	76	27	103	1.6	Captured in coastal dune forest. Tail regeneration.
2020.03.14	26°25'33.80" S 32°55'8.44" E	Pitfall	62	48	110	1.4	Captured in coastal dune forest.
2020.03.16	26°25'33.80" S 32°55'8.44" E	Pitfall	74	36	110	0.6	Captured in coastal dune forest. Tail regeneration
2020.03.16	26°25'33.80" S 32°55'8.44" E	Pitfall	64	54	118	1.2	Captured in coastal dune forest.
2020.03.25	26°27'05.01" S 32°55'05.92" E	Pitfall	35	22	57	0.5	Captured in coastal dune forest.
2020.03.27	26°25'33.80" S 32°55'8.44" E	Pitfall	37	26	63	0.4	Captured in coastal dune forest.
2020.03.27	26°27'05.01" S 32°55'05.92" E	Pitfall	37	23	60	0.3	Captured in coastal dune forest.
2020.03.27	26°22'45.47" S 32°55'15.54" E	Pitfall	64	26	90	1.0	Captured in coastal dune forest. Tail regeneration

by the total lack of limbs, whereas the latter species has hind-limbs with a single toe each (Branch, 1998). *Scelotes fitzsimonsi* were mostly captured in coastal dune forest with two individuals captured in sand forest along the east of the protected area transitioning into coastal dune forest. These records extend the distribution of the species approximately 50 km north of the international border. A representative photographic record of an individual was submitted to the Animal Demography Unit Virtual Museum as record no. 179228 (FitzPatrick Institute of African Ornithology 2021). Refer to Table 1 for morphometric measurements and capture data for each encountered individual.

Scelotes vestigifer specimens were primarily identified and distinguished from the similar species, *S. arenicolus,* by the comparatively enlarged rostral scale as well as the dorsal scalation and patterning described in Branch (1998). A total of 10 *S. vestigifer* individuals were captured during the 2020 pitfall and funnel trap survey, and various data recorded (Table 2). Whilst nine specimens were collected from coastal dune forest, a single specimen was collected from an isolated patch of sand forest on the western banks of Lake Max. Two representative photographic records for the species have been submitted to the Animal Demography Unit Virtual Museum (FitzPatrick Institute of African Ornithology 2021) for specimens collected in pitfall arrays north of Ponta Membene (ADU Record no. 179230) and north of Ponta Milibangalala (ADU Record no. 179229). These records expand the known geographic distribution of the species approximately 53 km north of the international border.

The presence of these *Scelotes* spp. in MSR is not unexpected as the protected area contains characteristic habitat for all three species (Marais and Bauer 2014a,b,c). The distribution of *S. fitzsimonsi* and *S. vestigifer* likely extends further north into the Machangulo peninsula and potentially to Inhacha island, however this requires confirmation.

ACKNOWLEDGEMENTS

The surveys described in this communication were conducted during the authors tenure as the Lubombo Transfrontier Conservation Area Scientific Technician for MSR and Tembe Elephant Park. The position as well as the surveys were funded by *the Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) through Peace Parks Foundation (PPF) and the *Administração Nacional das Áreas de Conservação* (ANAC). JSR Cutler, M Hudson, and D Snijder assisted with the installation and field work during the summer pitfall survey in MSR. H Chiponde assisted with the field work during the quantitative fossorial herpetofaunal quadrat surveys in MSR.

REFERENCES

Branch WR. 1998. Field guide to snakes and other Reptiles of Southern Africa. Cape Town: Struik.

Bruton M, Haacke WD. 1980. The reptiles of Maputaland. In: M.N. Bruton, K.H. Cooper, editors. Studies on the ecology of Maputaland. Durban: Rhodes University and the Natal branch of the Wildlife Society of Southern Africa.

DNAC (National Directorate of Conservation Areas, Mozambique). 2010. Maputo Special Reserve Management Plan, First Edition. Maputo: Ministry of Tourism, National Directorate of Conservation Areas (DNAC), Mozambique.

Henderson RW, Powell R, Martin J, Lopez P. 2016. Arboreal and Fossorial Reptiles. In: Dodd CK, editor Reptile Ecology and Conservation. England: Oxford University Press.

Jordaan PR, Measey J, Hanekom CC, Green AN, Woolcock AB, Combrink X. 2019. Grassland and savanna fossorial herpetofaunal densities. Afr. Herp News. 72: 106.

Jordaan PR. 2020. Geographical Distribution CORDYLIDAE *Chamaesaura macrolepis* (Cope 1862) Large Scale Grass Lizard. Afr. Herp News. 75: 60-61.

Jordaan PR, Cutler JSR, Snijder D. 2020. Geographical Distribution LAMPROPHIIDAE *Lycophidion pygmaeum* Broadley 1996 Pygmy Wolf Snake. Afr. Herp News. 74: 88-91.

Khunz LA, Burton RK, Slattery PN, Oakden JM. 2005.Microhabitat and population densities of California Legless Lizards with comments on effectiveness of various techniques for estimating numbers of fossorial reptiles. J. Herpetol. 39: 395-402.

Marais J, Bauer A. 2014a. *Scelotes bidigittatus* FitzSimons, 1930 Lowveld Dwarf Burrowing Skink. In: Bates MF, Branch WR, Bauer AM, Burger M, Marais J, Alexander GJ, de Villiers MS, editors. Atlas and Red List of the Reptiles of South Africa, Lesotho, and Swaziland. Suricata 1. Pretoria: South African National Biodiversity Institute.

Marais J, Bauer A. 2014b. *Scelotes fitzsimonsii* Broadley, 1994 Coastal Dwarf Burrowing Skink. In: Bates MF, Branch WR, Bauer AM, Burger M, Marais J, Alexander GJ, de Villiers MS, editors. Atlas and Red List of the Reptiles of South Africa, Lesotho, and Swaziland. Suricata 1. Pretoria: South African National Biodiversity Institute.

Marais J, Bauer A. 2014c. *Scelotes vestigifer* Broadley 1994 Coastal Dwarf Burrowing Skink. In: Bates MF, Branch WR, Bauer AM, Burger M, Marais J, Alexander GJ, de Villiers MS, editors. Atlas and Red List of the Reptiles of South Africa, Lesotho, and Swaziland. Suricata 1. Pretoria: South African National Biodiversity Institute.

Maritz B, Alexander G.J. 2008. Breaking ground: quantitative fossorial herpetofaunal ecology in South Africa. Afr. J. Herpetol. 58: 1-14.

Measey GJ, Armstrong AJ, Hanekom, C. 2009. Subterranean herpetofauna show a decline after 34 years in Ndumu Game Reserve, South Africa. Oryx 43 (2): 284-287.

Roque AC. 2010. Sources for the history of southern border of Mozambique: preliminary results of a project on archives of the Portuguese Commission of Cartography. J. Borderland Stud. 25(2):77-93.

Verburgt L, Verburgt UK, Branch WR. 2018. A new species of *Scolecoseps* (Reptilia:Scincidae) from coastal north-eastern Mozambique. Afr. J. Herpetol. 67: 86-98.

Whiting, AS, Bauer A, Sites JW. 2003. Phylogenetic relationships and limb loss in sub-Saharan African Scincine lizards (Squamata: Scincidae). Mol. Phylogenet. Evol.. 29: 582-598.

SUBMITTED BY:

PHILIPPUS RUDOLPH JORDAAN
Lubombo Transfrontier Conservation Area Scientific Technician: Maputo Special Reserve 2018-2020
Email: jordaanpr@gmail.com

AHN

INSTRUCTIONS TO AUTHORS

AFRICAN HERP NEWS

publishes manuscripts in four categories, namely
Articles, Herpetological Surveys, Natural History Notes, and Geographical Distributions.

CONTRIBUTIONS SUBMITTED IN AN INCORRECT STYLE (SEE GUIDELINES BELOW) WILL BE RETURNED TO THE AUTHORS

The type of submission (e.g., Article, Natural History Note, Geographical Distribution) should be clearly indicated in the file name. As a general note, always use the latest available issue of AHN for instructions. All authors jointly take responsibility for all permits, permission to use data and ethical clearance required to perform the work as and when appropriate.

All submissions should be typewritten in English (UK spelling), set in 10 pt Calibri. Words should not be divided at the right-hand margin. Use the active voice in the first person where possible (except for submissions for *Tomorrow's Herpetologists Today*). Formatting should be achieved with paragraph settings rather than tabs or spaces. Authors should consult the *Council of Biology Editors Style Manual,* 5th edition (1994) for style and abbreviations. Sentences should be separated by a single space (character). Genus and species names must be italicised. Centre major headings in small caps. Subheadings are in bold and left justified (*also in title case*). Footnotes are not accepted. The International System of Units (Systeme Internationale; SI) should be followed. Use decimal points rather than commas. Measures should be in mm, m or km rather than cm or dm. Integers less than 10 should be spelled, while those greater than 10 (including 10) should be given numerically. Group integers of thousands together with a space and do not use a comma (e.g. 10 500 and 1 230). All statistical symbols should be italicised. Follow the Fourth Edition (1999) of the International Code of Zoological Nomenclature.

For current common names for reptiles, please refer to Bill Branch's (1998) Field Guide to Snakes and other Reptiles of Southern Africa, third edition. For amphibians, please consult du Preez and Carruthers (2009) A Complete Guide to the Frogs of Southern Africa.

Every word of the English common name should start with a capital letter (e.g. Namaqua Dwarf Adder).

Appendices, Material Examined, Tables, legends to Figures, and Figures must follow the References. For current common names for reptiles, please refer to Bill Branch's (1998) Field Guide to Snakes and Other Reptiles of Southern Africa, third edition. For amphibians, please consult Du Preez & Carruthers' (2009) A Complete Guide to the Frogs of Southern Africa.

AHN

INSTRUCTIONS TO AUTHORS

TOMORROW'S HERPETOLOGISTS TODAY

This is a popular style article showcasing the work and/or research of young, upcoming herpetologists across the African continent. Unlike any of the other submissions, this style should be written in the third person. It could feature work already published or ongoing work. Photographs to accompany the article are highly encouraged. These may include study specimens, study area, and/or researchers.

A general format should be followed:
Author name ([in full], centred, upper case)
Original text (aligned left)

ARTICLES

African Herp News publishes longer contributions of general interest that would not be presented as either Natural History Notes or Geographical Distributions. A standard format is to be used, as follows:

TITLE (bold, centred, upper case);

AUTHOR(S) (initials and surname, bold, centred)

HEADINGS (bold, centred, upper case)

Subheading 1 (bold, aligned left, lower case except first letter of first word) as required

Subheading 2 (bold, italics, aligned left, lower case except first letter of first word) as required

ACKNOWLEDGEMENTS (bold, centred)
REFERENCES (bold, centred), following the standardised formats described below.
SUBMITTED BY: (bold, aligned left), following the standardised format described below

HERPETOLOGICAL SURVEYS

African Herp News publishes succinctly annotated species lists resulting from local surveys of amphibians and reptiles on the African continent and adjacent regions, including the Arabian Peninsula, Madagascar, and other islands in the Indian Ocean. The area surveyed may be of any size but should be defined as a geographic unit of special relevance to the herpetological community. For example, surveys should address declared or proposed conservation reserves, poorly explored areas, biogeographically important localities or administrative zones. The relevance of survey results should be judged by the extent that these records fill distributional gaps or synthesise current knowledge.

As far as possible, survey records should be based on accessible and verifiable evidence (specimens deposited in public collections, photos submitted illustrating diagnostic features, call recordings and sonograms, or DNA sequences accessioned into international databases).

Survey results should be presented in the same format as used for Articles (described above), and must additionally include a systematic account.

(bold, aligned left): comprises Scientific name (including author citation), location and habitat, evidence (including registration numbers and location of vouchers), and comments (where required).

NATURAL HISTORY NOTES

Brief notes concerning the biology of the herpetofauna of the African continent and adjacent regions, including the Arabian Peninsula, Madagascar, and other islands in the Indian Ocean. A standard format is to be used, as follows:

FAMILY (bold, centred, uppercase)
Scientific name (bold, italicised, centred)
Author citation (centred)
English Common Name (centred, all words starting with a capital letter)
KEYWORD (bold, centred)
AUTHOR(S) (initials and surname, bold, centred)
[Original text] (left aligned)
ACKNOWLEDGEMENTS (bold, centred), if applicable
REFERENCES (bold, centred), following the standardised formats described below
SUBMITTED BY: (bold, aligned left), following the standardised format described below The Keyword should be one or two words best describing the topic of the note (e.g., Reproduction, Avian predation, etc.).

The body of the note should include information describing the locality (Country; Province; quarter-degree locus; location; latitude and longitude in D° M' S" format; elevation above sea level), providing the date (day, month, year), naming the collector(s), and stating the place of deposition and museum accession number or describing the fate of the animal.

GEOGRAPHICAL DISTRIBUTIONS

Brief notes of new geographical distributions of amphibians and reptiles on the African continent and adjacent regions, including the Arabian Peninsula, Madagascar, and other islands in the Indian Ocean. Records submitted should be based on specimens deposited in a recognised collection. A standard format is to be used, as follows:

FAMILY (bold, centred, uppercase)

Scientific name (bold, italicised, centred)

Author citation (centred)

English Common Name (centred, all words starting with a capital letter)

AUTHOR(S) (initials and surname, bold, centred)

Original text (left aligned)

ACKNOWLEDGEMENTS (bold, centred), if applicable

REFERENCES (bold, centred), following the standardised formats described below

SUBMITTED BY: (bold, aligned left), following the standardised format described below

The body of the note should include information describing the locality (country; province; quarter-degree locus; location; latitude and longitude in D° M' S" format; elevation above sea level), providing the date (day, month, year), naming the collector(s), and stating the place of deposition and museum accession number, or fate of the animal. The body should also include information on the size, colour and taxonomic characters (e.g., scalation, webbing) used to identify the specimen, as well as the distance to the nearest published locality.

ACKNOWLEDGMENTS

Acknowledgements should be brief and should not list titles and institutions, but should include the first name and surname in full. Institutions should only be listed where individuals are cited as pers. comm. in the text. Authors must acknowledge collecting permits and animal care protocols together with which author they were granted. Any mention of authors should refer to them by initials only (e.g. GJA for Graham J. Alexander). It is recommended that authors acknowledge reviewers by name if they waive anonymity. This is not a requirement, but would be greatly appreciated.

REFERENCES

Reference formatting is similar to African Journal of Herpetology. As of 2019, extensive changes have been made to simplify its appearance. However, as always, references should be listed in alphabetical order and should refer only to publications cited in the text. Abbreviate journal names in the References in the standard way. Standard abbreviations can be found at various web sites such as: www.bioscience.org/atlases/jourabbr/list.html or home.ncifcrf.gov/research/bja/

References should be in the following format:

Article: Branch WR. 2007. A new species of tortoise of the genus *Homopus* (Chelonia: Testudinidae) from southern Namibia. Afr. J. Herpetol. 56:1–21.

Book: Spawls S, Howell K, Drewes R, Ashe J. 2002. A field guide to the reptiles of East Africa. London: Academic Press.

Chapter in a collection: Bruford MW, Hanotte O, Brookweld JFY, Burke T. 1992. Singlelocus and multilocus DNA Fingerprinting. In: Hoezel AR, editor. The South American Herpetofauna: Its Origin, Evolution, and Dispersal. Molecular Genetic Analysis in Conservation. Oxford: IRL Press.

Thesis: Russell AP. 1972. The foot of gekkonid lizards: a study in comparative and functional anatomy. [PhD thesis]. London: University of London.

Website: Wilgenbusch JC, Warren DL, Swofford DL. 2004. AWTY: a system for graphical exploration of MCMC convergence in Bayesian phylogenetic inference. [accessed 15 April 2011]. http://ceb.csit.fsu.edu/awty.

AHN

INSTRUCTIONS TO AUTHORS

In text citations should be in chronological order: (Jacobs 1952, 1966; Edwards and Holmes 1965; Rosen et al. 1990). When a paper with more than two authors is cited, only the first appears in the text (Taylor et al. 1993). If a paper has more than ten authors, only the first five should appear in the references followed by et al. Cite unpublished data as e.g. Alexander (in press), which then appears in the list of references, or as G. J. Alexander (pers. comm. 2020), in which case Graham J. Alexander's name and institutional affiliation should appear under Acknowledgements. Unpublished reports are cited as personal communications.

AUTHOR AFFILIATIONS

Authors' full names and affiliations should be provided at the end of the submission, as follows:

SUBMITTED BY: [for each author]

AUTHOR'S NAME (bold, upper case),

Address or affiliation.

E-mail: example@gmail.com

(hard return)

TABLES

Tables should be in Arabic numerals, double spaced and on separate pages with a legend at the top. Lines should only be used to separate headings. Table formatting is most convenient when 'table commands' are used to separate columns. Do not use vertical lines. All tables must be mentioned in the text and numbered consecutively (Arabic numerals).

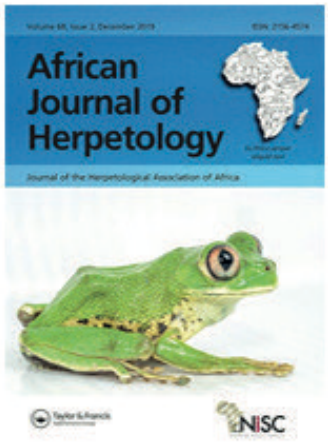
FIGURES AND PHOTOGRAPHS

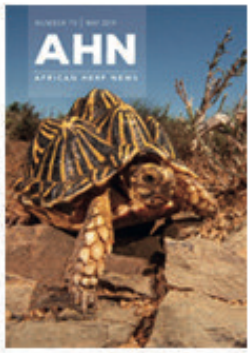
Figures must be restricted to the minimum needed to clarify the text. The same data should not be presented in both graph and table form. Photographs and figures should be provided at high resolution (minimum of 600 dpi for colour images). Lower resolutions are not acceptable. Files should be saved and submitted as one of the following file formats:

TIFF (Tagged Image File Format; preferred), PostScript or EPS (Encapsulated PostScript). Please submit line art as a scalable vector diagram (EPS). Labelling in figures should be in lower case, except for the first letter of the first word. All figures must be mentioned in the text and numbered consecutively (Arabic numerals).

AHN

HAA MEMBERSHIP





HAA MEMBERSHIP INCLUDES

2 hard copy issues of AJH per year
Online access to all AJH issues through Taylor & Francis
3 electronic issues of AHN per year (one year embargo waived)
Reduced conference fees
Eligibility for HAA research grants
Priority access to webinars
Notifications of jobs offers, field trips, publications & general herp news
Access to the HAA Collaborative Skills Development (HAA-CSD) initiative via Slack

Ex Africa semper aliquid novi

HERPETOLOGICAL
ASSOCIATION OF AFRICA

Founded 1965

AHN

HAA MEMBERSHIP

HAA MEMBERSHIP FEES

African Membership	**1 Year**	**R 200 3 Years (10% discount)**	**R 540**
Senior Citizens	**1 Year**	**R 100 3 Years (10% discount)**	**R 270**
Students & Scholars	**1 Year**	**R 150 3 Years (11% discount)**	**R 400**
International Membership	**3 Years**	**$60 or €50 or R775**	

BANKING DETAILS

ACCOUNT NAME	**Herpetological Association of Africa**
ACCOUNT NUMBER	**62614292910**
BANK	**First National Bank**
BRANCH	**Woodlands Boulevard (230732)**
SWIFT CODE	**FIRNZAJJ**

IMPORTANT TO REMEMBER

NOTICE REGARDING ELECTRONIC PAYMENTS

It is essential that your membership reference number (or initials and surname, if you are a new member) be used as a reference for electronic payments, and that you let the HAA Treasurer, Jens Reissig (treasurer@africanherpetology.org), know when you authorise the payment, so that it can be traced.

BANK FEES

Please note that all bank fees for electronic payments to the HAA must be borne by you, the payee. Thus, please ensure that you add an extra 5% to cover bank charges, or that these come directly off your account when electronically transferring money, and NOT off the amount received by the HAA.