African Herp News

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HERPETOLOGICAL ASSOCIATION OF AFRICA
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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, geographical distribution notes, herpetological survey reports, venom and snakebite 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.

COVER PHOTOGRAPH: *Chameleo namaquensis* from the Northern Cape Province, South Africa. Photograph by: Andre Coetzer. Canon EOS 30D (1/125, F20, ISO 400).

10TH CONFERENCE OF THE HERPETOLOGICAL ASSOCIATION OF AFRICA – GENERAL MEETING

CHAIRMAN'S REPORT

Since my election two major issues have occupied most of my effort as Chairman. The first was the change in the approach to publishing *African Journal of Herpetology*. This significant shift in our model of journal production and distribution was ably spearheaded by John Measey, who has my thanks on behalf of all HAA members. A second issue was the unfortunate delay in the finalisation of accounting from the 2008 Sterkfontein Dam Conference, now thankfully resolved. I was also involved with e-mail correspondence with the Committee and HAA members regarding a diversity of topics, including the approval of the new student paper and poster awards, the website, the Exceptional Contributions to African Herpetology Award, the general promotion of the Association, the future of personal and library subscriptions in the age of e-journals, and the availability of the publications of the Herpetological Association of Rhodesia, the precursor to the HAA. In this last case I am happy to announce that Don Broadley kindly loaned his set of the *HAR Journal* for scanning and that this task is now complete. Following editing of the files, these will be made available to all members via the website.

The next HAA committee elections will take place later this year. The call for nominations appear in this issue of the newsletter. Although this results in a slight delay in ballot distribution it enfranchises the maximal number of members. To the best of my knowledge all but one of the current Committee members are willing to stand again. However, I would like to take this opportunity to encourage anyone with an interest in running for the open spot or challenging for one of the other positions to make their intentions known to me.

On behalf of the Association I wish to thank Krystal Tolley and John Measey as well as their able team at SANBI, for taking on the task of organizing this fine meeting. We are all cognisant of the time and effort involved. We also thank Bill Branch for organizing and running the auction (with the able assistance of Stuart Nielsen), which I think was a huge success and I hope will remain a staple of H.A.A. conferences in the future. I also thank Taylor & Francis for sponsoring the Don Broadley Prize and Don's attendance at the meeting. I am sure that I speak for everyone in attendance when I say how pleased I am that both Don Broadley and Wulf Haacke, recipient of the Exceptional Contributions to African Herpetology Award, were able to attend this conference. We hope to benefit from their presence at many conferences to come.

Venue and date for the next HAA symposium—Our practice with regard to future symposia is to call upon members during the General Meeting to ask if anyone is prepared to arrange the next meeting. However, Abeda Dawood has very kindly agreed to take on the responsibility of chief organizer of the next symposium. She is prepared to arrange an HAA symposium at the National Zoological Gardens in Pretoria for late 2012 or early 2013, the timing to be determined based on venue availability and member preference, if such can be determined. As there were no other offers and Abeda had already agreed, our next symposium will take place in 2012 (or 2013) in Pretoria.

AARON BAUER

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TREASURER'S REPORT

Bank accounts - The Association has three ABSA bank accounts. Two were existing accounts and the third (i.e. '0393) account was opened for the HAA 2011 conference. The HAA treasurer is the signatory on all three accounts. Balances since the last conference year in 2008 are given in table 1. We are still using Breck Bartholomew's service for credit card/overseas payment. We are paying a fee of 10% for this service (to be confirmed).

Table 1: Balances from the three HAA bank accounts from 28 February 2008 through 7 January 2011

Description	Account	28 Feb 08	28 Feb 09	28 Feb 10	7 Jan 11
Subscriptions	'6077	R92,271.22	R92,939.86	R134,778.62	R152,937.14
Subscriptions	'7227	R23,633.46	R24,311.76	R 24,990.00	R 30,828.43
Conference 2011	'0393				R 78,182.55

Membership - Thanks to the secretary, Jeanne Tarrant, for getting the members to renew their membership. This is reflected in the bank balance. An amount of R342.63 was paid to the secretary for HAA related postage. ABSA bank has agreed in 2010 to waive all charges on international member subscription cheque deposits e.g. EBSCO cheques deposited by the treasurer. These charges were R100 per $60 cheque and up to R300 per $180 cheque. Due to the treasurer being on maternity leave for most of 2010, receipts have not been issued timeously. This will be addressed in 2011.

Journal and newsletter - Due to some initial hiccups with the handover from the previous treasurer/secretary and with the split of the duties of treasurer and secretary, there were some delays in members receiving their journal issues. This has been addressed and all should run smoothly from 2011. 320 copies for the newsletter are printed at a cost of *ca.* R6.50 per issue for printing and postage. Sabinet paid R23,747.20 on to the HAA for AJH subscription sales for 1 April 2009 to 31 March 2010. Formeset refunded R7,330.20 for a double payment made for printing the AJH in December 2009.

9th HAA Symposium - According to the 2009 audited financial statement, the outstanding amount paid from the HAA to the conference organisers was a total of R57,985. No detailed statements were received by the treasurer for the symposium. From the information received the surplus/loss from the conference could not be audited as the accounts have not been finalised. Receipts of R27,912 on 11/12/2008, and of R18,859.89 was paid to the HAA on 28/07/2010. Thus as there are no audit report for the conference, the amount owing to the HAA would be R11,213.11 (if no profit was made). Receipts, invoice book and bank statements were received on 14/1/2011. These will be sent to the auditors so that the audit reports can be completed.

The secretary calculated that R22,486 was raised at the symposium auction. After receipt of R5,729.34 on 16/01/2009 for the Symposium Auction, the amount owed to the HAA was R16,756.66. In order to recover the funds, the H.A.A. secretary contacted members directly regarding moneys owing for the auction. The HAA recovered R16,115 of a total of R22,486 owed for auction items. Thus the HAA received R21,844.34 in total for the auction. This means that R641.66 was not recovered for the auction.

10th HAA Symposium - Transfers of R30,000 (27/05/10) and R20,000 (17/09/10) were paid into the conference account. In addition, the HAA paid for travel and accommodation for Don Broadley (flight R6,800) for the Don Broadley award for student contributions to the AJH and Wulf Haacke (flight R1,278) to attend the conference and to receive the Award for Exceptional Contribution to African Herpetology.

2009 & 2010 Audits - The accounts were audited by M & D Finansiele Dienste for February 2009 and 2010 at a cost of R2,500 for 2009. For 2009 (page 4 of this issue) they found that the financial statements are in agreement with the accounting records. No details of receipts and expenses were received for the 2008 9th Symposium so the 2009 audit report is incomplete. The audited statements for 2010 are outstanding. The documents are with the auditors and I do not forsee any problem.

HAA Website for 2010 - The HAA paid R9,351.03 to Martin Cocks Web Programming for the website. This included the content, graphics and the registration of the domain name africanherpetology.org until 2013. The site is not complete as yet.

Tax exemption status - The accounting officer must submit tax returns and audited financial statements to SARS for 2009 and 2010 in order to apply for renewal of our tax exempt status.

ABEDA DAWOOD

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SECRETARY'S REPORT

Paid membership to the HAA has increased steadily during this period with current figures as outlined below. The figures take into account all previous institutional (library and university) subscriptions have been taken over by Taylor & Francis (8 African and 21 overseas). This also includes new members from the conference (1 year membership included in conference fees) and other new members to date.

Table 1: Breakdown of HAA membership for 2008 and 2010

	Dec 2008	Dec 2010
African Members (of which are Students)	~40	133 (14)
Overseas Members	~70	93
Total Subscribers	110	226

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ACCOUNTING OFFICER'S REPORT
TO THE MEMBERS OF
HERPETOLOGICAL ASSOCIATION OF AFRICA

We have performed the duties of Accounting Officers to **HERPETOLOGICAL ASSOCIATION OF AFRICA** as required by article 62 of the Law of Close Corporations 1984. No audit needs to be done as required by the law, and no audit was performed.
The financial statements are the responsibility of the members. We have determined that the financial statements are in agreement with the accounting records and have books of account and record as we considered necessary in the circumstances. We have also reviewed the accounting policy which have been applied in the preparation of the annual financial statements and we consider that they are appropriate to the business.

M&D FINANSIELE DIENSTE
ACCOUNTANTS

A series of renewal reminders where sent to all members whose subscription was due to lapse in 2010 or had already lapsed. 127 members (both African and international) have not yet renewed and these can still be pursued. Only 9 members actively expressed wishing to discontinue their memberships.

Renewal reminders for 2011 will be sent out shortly after the conference (first sent 24 Jan 2011). There is scope to attract many more members, especially students.

There were some initial distribution problems after this had been handed over to UNISA (people not receiving copies of the journal or waiting a long time) as well as labelling problems (for example, no name used), but this seems to be improving.

During 2010 the new HAA website was also launched and this is an improvement on the previous one in terms of layout and use of graphics, however some additional work on the site is necessary, including giving members the ability to sign-up or renew membership online. Also, there is no mention of *African Herp News* on the site.

JEANNE TARRANT

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JOURNAL EDITOR'S REPORT

This report covers the period where I was acting editor (Feb 2009 – October 2009) and my first term as editor (October 2009 to time of writing in December 2010).

I inherited African Journal of Herpetology (AJH) in good working order from previous editors who had provided an excellent grounding for this scholarly journal of the Herpetological Association of Africa (HAA). Without this grounding it would not have been possible to build the journal and I am indebted to all previous editors. Maintaining the *status quo* for AJH would have continued to produce an excellent product, but it would have retained a heavy burden on the editor to also act as publisher and distributor. In this respect, I wanted to eliminate the publishing burden for myself and future editors allowing for more time to be dedicated to editing quality content both for members of the HAA and a wider academic audience.

Taylor & Francis Publishing AJH - Following negotiations which started with the previous AJH editor (Alex Flemming) in 2008, the HAA committee voted to accept an offer from the Taylor & Francis (hereafter T&F) publishing group (http://www.tandf.co.uk/journals/) to publish the African Journal of Herpetology (AJH) and a contract was signed by HAA chair, Aaron Bauer, in December 2009.

In the past 12 months, many changes have occurred to AJH and I attempt to summarise the highlights here. The style of the journal has changed to conform to the shape of other T&F publications, while retaining the familiar formatting of AJH. This includes movement to a single column, and inclusion of publishers' logos. The cover now has a colour image and a non-political, more herpetological, map of Africa. The editorial board was revamped with new members being responsible for promotion of AJH, resolution of any disputes and judging of the "Don Broadley Prize for Excellence in African

Herpetology". The current content has become available online via the T&F website, and is available free to all members via a password which was supplied in July 2010. In addition to the current issue, members can access articles which have been accepted and appear online early. The last month of 2010 saw the completion of the scanning of the entire back catalogue of AJH and Journal of the Herpetological Association of Africa. Every article of every issue is freely available to HAA members right back to Volume 1 (1965). This is something that I think should be of great interest to all members and I encourage you to make use of this facility. **Do not distribute pdfs that you download**. The HAA will lose revenue if members distribute pdfs and so individual members will lose access if they are found to be distributing journal contents when they are not authors. As each pdf downloaded bears the members name, it is not difficult to detect abuse. There is an amazing variety of material to enjoy: from an unavoidable late start by J.D. Visser in July 1965 (JHAA 2:17-20) to a revision of East African *Melanoceps* by Broadley et al in 2006 (AJH 55:95-112).

T&F have taken the management of all subscriptions to the journal. HAA members should note that this does not apply to individuals, only to libraries and institutional members. If you are an individual member of the HAA you receive the journal (paper and electronic access) as part of your membership. Active sales of subscriptions to the journal, as well as the sale of individual articles, are ongoing and T&F expect these numbers to rise steadily over the coming years. Increasing subscriptions and sales represents revenue to HAA so please encourage your institution to subscribe if they don't already.

Lastly, AJH switched over to an online submissions base (ScholarOne) in April 2010. This has considerably decreased the editorial work of tracking articles by email. It has also allowed the editors to conduct "double-blind" reviewing where authors' names are not disclosed to reviewers and reviewers' names are not disclosed to authors. When submitting articles, authors are asked to provide additional information and assurances to the editor, these include: adhesion to AJH ethical guidelines (drawn up by the editorial team), declaration of conflict of interest, application for entrance to the "Don Broadley Prize for Excellence in African Herpetology" and whether the manuscript is suitable for a press release. Two press releases have already been made.

The ScholarOne system produces its own metrics which will become a feature of future reports by the AJH editor. The following metrics (Tables 1) relate to the last 9 months (32 submissions which included 2 review articles, 23 original articles, and 7 short communications) of activity for AJH on ScholarOne.

Table 1: ScholarOne metrics for the last nine months worth of submissions to AJH on ScholarOne

ScholarOne metric	**Days**
Average Time to First Decision	24
Average Referee Turnaround time	21
Average Time to Final Decision	33
Proportion Accepted	43%

This compares favourably with metrics for the previous 14 months (from Feb 2009) in which only 25 manuscripts were received. However, metrics from this 14 month period were submitted to the Committee on Scholarly Publishing in South Africa (CSPiSA) together with answers to a questionnaire. This resulted in the recommendation by the Academy of Science of South Africa (ASSAf) that AJH remain on the list of accredited journals.

Associate editors - Work on the journal has not been achieved by the editor alone but through a committed editorial team. I'd like to take this opportunity to thank former Associate Editors (AEs) Aaron Bauer, Krystal Tolley, and Brian Henen for their outstanding service to the HAA through acting as editorial associates of AJH. Krystal, Aaron, and Brian joined the editorial team in 2005, when Graham Alexander was editor. Krystal and Aaron served until 2009, while Brian served until 2011. Two new AEs were appointed in 2009: David Blackburn (University of Kansas) and Eli Greenbaum (University of Texas). AEs take on an important and vital role investing a lot of time in reading manuscripts, reading reviewer's reports and making recommendations. Currently AJH does not have enough AEs and is looking for more. If you would like to be considered, please contact the editor.

Metrics - As many members will be aware, the world of scientific publishing is now largely governed by metrics. Since Graham Alexander got AJH admitted onto Thompson/Reuters ISI in 2005, AJH has received an Impact Factor (IF) representing the number of cited articles from the journal in the previous 2 years. Having taken 2 years to become effective, this widely used journal metric has now produced three IF scores: 2007 = 0.618; 2008 = 0.600; 2009 = 0.455. The trend is probably too small and short to be interpreted meaningfully, but it is going in the wrong direction which is not in the interest of the journal or association. It is hoped that by placing the journal online, changing publication months to January and June (instead of June and December) this will increase the metrics of AJH. HAA members can make a difference by citing relevant recent works from the journal in their publications and by publishing articles that are highly citable. From an editorial standpoint the best way of increasing the IF is to have the contents of interest to a wider scientific audience. I believe that this is also in the interest of the HAA, its members and authors and readers of AJH.

As we reach Volume 60 in 2011, I hope you will contribute to the success of the HAA's journal for the future, as well as being able to appreciate all the work from past Editors, Associate Editors and Authors that have made the outstanding publication that we have today.

JOHN MEASEY

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NEWSLETTER EDITOR'S REPORT

This report represents a summary of African Herp News from issue 47 to 52 inclusive. During this period the newsletter was edited by both Angelo Lambiris (issues 47 - 48) and myself (issues 49 – 52). The six issues included in this report comprised a total of 205 pages (mean = 34 pages per issue), and included a total of 15 Articles, 40 Natural History Notes, and 16 Geographical Distribution contributions. Additionally, AHN published several other contributions including but not limited to messages from various committee members, the abstracts of the 14th African Amphibian Working Group meeting, conference announcements, and an obituary.

The short time-frame that this report deals with limits assessment of the trends associated with publication of AHN. However, there has been an increase in the total number of submissions. This increase in submission rate is pleasing as it indicates a growing readership and thus wider impacts. This increase in submissions also allows an editor to be more selective in which articles to publish: a trend supported by an increase in the number of rejected articles.

Submissions to AHN generally focus on squamate reptiles (84 %), evenly shared between 'snakes' and 'lizards'. Submissions regarding amphibians (5 %) or testudines (8 %) are relatively rare. Three percent of submissions dealt with herpetofaunal communities.

Costs for printing and postage of hard copies of the newsletter are detailed in Table 1. Variation in the total amount is a result of varying numbers of pages in each issue. The December 2010 issue of AHN was distributed at the 10th Conference of the HAA, and the remaining copies were posted to members not attending the meeting. An additional amount of R 866.05 has been spent on envelopes and labels.

Table 1: Costs for printing and distribution of issues 49 through 52 of *African Herp News*

Issue	Printing	Distribution
49	R 2,995.81	R 3,251.45
50	R 4,332.00	R 2,762.25
51	R 4,295.70	R 2,659.65
52	R 3,416.45	R 2,026.05

Please continue to support *African Herp News* by submitting your short articles, natural history notes, geographical distribution notes, and herpetological surveys for publication.

BRYAN MARITZ

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Delegates at the 10th HAA Conference in Cape Town, January 2011. Photograph by John Measey

Clockwise from top left: Wulf Haacke receiving Exceptional Contribution to African Herpetology Award; Jessica Da Silva receiving award for best student presentation from Aaron Bauer; Krystal Tolley and Mike Bates let their hair down; Don Broadley presents Gavin Masterson with the inaugural Don Broadley Award; Stuart Nielsen...well...yes.

ARTICLES

EXCEPTIONAL CONTRIBUTION TO AFRICAN HERPETOLOGY AWARD: WULF DIETRICH HAACKE

MICHAEL F. BATES

Department of Herpetology, National Museum, P.O. Box 266, Bloemfontein, 9300, South Africa; E-mail: herp@nasmus.co.za.

Wulf Dietrich Haacke was born in Windhoek, Namibia, on 15 December 1936. His parents were German and in 1929 and 1930 they immigrated to the former South West Africa, where they were married. Wulf spent the first 20 years of his life in Namibia. His first job, in 1955, was as an assistant to the mineralogist at Tsumeb Mine in Namibia. In 1957 he moved to South Africa where he studied for a BSc degree at the University of Pretoria. Wulf took up a post in the Section of Locust Control and Research at the Department of Agriculture in February 1960, and in June 1961 he was appointed as head of the Department of Lower Vertebrates and Invertebrates at the Transvaal Museum. He was head of the department, later re-named Department of Herpetology, from 1961 until his retirement in 2002, a period of over 40 years. During that time the herpetological collection at the Transvaal Museum increased in size from 26 000 to 85 000 specimens.

In addition to curating the herp collection, Wulf was appointed as Assistant Director of the Transvaal Museum in June 1988, as Deputy Director from August 1991 to June 1992, and as co-ordinator of vertebrate studies from December 2000 until his retirement in January 2002. Soon after his retirement, in February 2004, he was appointed as Honorary Curator of Herpetology.

When he began work at the Transvaal Museum, Dr Vivian FitzSimons was still the Director. His association with FitzSimons ranks as the first highlight in Wulf's career. At the time, FitzSimons had only one functional eye, and was virtually blind. FitzSimons nevertheless still insisted on publishing two editions of his *Field Guide to the Snakes of Southern Africa*, as well as an Afrikaans version of the book. Wulf edited the first edition of the book and had to read each and every amendment to FitzSimons. Wulf also co-operated with Barry Barratt, the artist, supplying him with specimens and evaluating his illustrations. Wulf later updated the second edition of the *Field Guide*, again having to read each and every change to FitzSimons. He was even more intensely involved in the production of the Afrikaans version of the *Guide*. This was no problem for Wulf, who is fluent in German, English and Afrikaans. He was therefore able to associate closely with FitzSimons, who Wulf refers to as a "great man" who "never lost interest in his main study subject". Wulf also noted that FitzSimons was "a very dignified and approachable man, who I admired and respected".

While at the Transvaal Museum, Wulf completed a Masters degree on the burrowing geckos of southern Africa. The field work involved in this project and the prepara-

tion of the five major journal articles that resulted from it, which were published in the *Annals of the Transvaal Museum*, rank as another highlight in Wulf's career. The publication of these papers in 1975 and 1976 firmly established Wulf as an expert on geckos, a group of reptiles in which he has maintained a lifelong interest.

Wulf has had a long association with the HAA, being one of its longest serving members. He was HAA journal editor from 1980 to 1982, and has also served on the journal's editorial committee. He is an Honorary Life Member of both the Transvaal Herpetological Association and the East Rand Herpetological Association. In fact, he is a past Chairman and founder member of the THA. Wulf was also the South African representative on the Council of the World Congress of Herpetology from 1994 to 1998.

Wulf has authored about 80 scientific and semi-scientific articles and about 20 popular articles. He has presented papers in three languages at 22 national and international symposia. It is interesting to note that his first paper, published in 1963, was not on herps, but on the discovery of the first live specimen of the Namib Golden Mole, published in the *IUCN Bulletin*. Reptile taxa described by Wulf include *Ptenopus kochi* and *Typhlosaurus braini* in 1964, *Afroedura africana tirasensis* and *Rhoptropus bradfieldi diporus* in 1965, *Pachydactylus tsodiloensis* in 1966*, Bitis xeropaga* in 1975, *Chondrodactylus angulifer namibensis* and *Colopus wahlbergii furcifer* in 1976, *Typhlosaurus lomiae* in 1986, *Afrogecko swartbergensis* in 1996, *Typhlacontias rudebecki* in 1997, and *Afrogecko plumicaudus* in 2008. He was also co-author on the descriptions of *Kaokogecko vanzyli* with Steyn in 1966, and of *Lygosoma miopus* from Somalia with Greer in 1982. The latter species was later re-named *Haackgreerius miopus* in honour of the authors. None of the species Wulf has authored have been synonymised.

As many of you already know, Wulf's interest has largely centered on the reptiles of Namibia. Apart from his seminal works on the burrowing geckos, other important contributions include papers on the reptiles of Maputaland, accounts of the herpetofauna of the southern Kalahari, and of the Kamanjab and Damaraland regions, and a systematic and biogeographical analysis of the genus *Typhlacontias*. Some smaller but nevertheless notable contributions include the re-discovery of *Australolacerta australis*, a number of reptile range extensions in Namibia, and more recently, various short notes with Mica Barts, documenting captive maintenance and reproduction of Southern African geckos. Wulf has worked mainly on lizards and snakes, but has published a few papers on frogs, including the first record of *Amietophrynus lemairii* from Southern Africa. He also co-authored papers on the frogs of southwestern Angola and Lesotho. The Angola paper, published in 1993, includes the description of *Bufo grandisonae* by Poynton and Haacke.

Wulf is a co-author of the book *Reptiles of the Kruger National Park*, published in 1983, and first author of a small book titled *Frogs* published in 1987. He also contributed species accounts for the 1988 South African Red Data Book of Reptiles and Amphibians. More recently, he was very active as a member of the Expert Panel of SARCA and spent a considerable amount of time identifying images of reptiles, later reviewing various sections of the Reptile Atlas manuscript. He is currently occupied with a taxonomic revision of the genus *Telecopus* in southwestern Africa.

Apart from his published contributions to herpetology, Wulf has also been a source of inspiration and councel to many young herpetologists. He has reviewed countless manuscripts and dissertations, and always found the time to welcome visitors to his of-

fice or home in Pretoria, sharing in his wealth of knowledge. Wulf's various collections of reptiles and amphibians, made during trips throughout the subcontinent, should be seen as yet another significant contribution. Many taxonomic revisions have benefited substantially from this material. Most of Wulf's expeditions were conducted using a Land Rover which he built from scratch, and maintained himself, after becoming something of an expert vehicle mechanic. In recognition of his contribution to southern African herpetology, Wulf has had two lizards named after him, namely *Afroedura pondolia haackei* and *Pachydactylus haackei*. It is also noteworthy that during the time when his department included invertebrates, Wulf collected everything that caught his attention, resulting in colleagues naming a grasshopper, tenebrionid beetle, solifugid, scorpion and snail after him. His comprehensive collection of excellent photographs deserves mention too, and many of these have been used by colleagues in field guides and other publications. Wulf has also presented numerous talks and slide shows, and his expert advice has been aired on radio and television.

Wulf has traveled extensively, visiting several African countries, including Angola, Tanzania, Kenya and Algeria, as well as North and South America, Australia, Europe, and most recently Antarctica which he visited with his wife. Wulf has a special interest in the pre-colonial and colonial history of Namibia, Botswana and Namaqualand. He recently conducted an expedition to Botswana in search of a battlefield dating back to skirmishes between German colonial troops and indigenous people who had fled across the border from South West Africa.

Since his retirement in 2002 Wulf has been active as a freelance environmental consultant and has prepared 441 environmental impact assessment reports. He has also continued with some herpetological research and as recently as 2008, described one of the most remarkable geckos in Africa, the feathery-tailed gecko *Afrogecko plumicaudus* from Angola. The discovery of this gecko, and its description, rank as the most recent highlight in Wulf's career.

The Herpetological Association of Africa is proud to present its highest honour, the *Exceptional Contribution to African Herpetology* award, to Wulf Haacke.

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THE STATUS OF THE RINKHALS *HEMACHATUS HAEMACHATUS* IN THE CITY OF CAPE TOWN METROPOLITAN AREA, WESTERN CAPE, SOUTH AFRICA

GRANT SMITH

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INTRODUCTION

In 2008, conservation authorities believed that the monotypic elapid *Hemachatus haemachatus* was extinct in the City of Cape Town (CCT) metropolitan area in the

Western Cape Province, South Africa (Dorse, Holmes & Wood 2008). However, in other parts of its range, despite urban development, this snake is known to be common (Marais, 2004). Wingate (1967) confirms that this species was once abundant in the Cape and known from a number of locations, particularly along the Cape Flats.

Official records, however, are not readily available for this species. In 2010 the Western Cape Nature Conservation Board (CapeNature) held less than 10 official records (Turner personal communication 2010), the South African Reptile Conservation Assessment (SARCA; 2005-09) consolidated another five, whereas records held by the CCT's Biodiversity Management Branch on the South African Biodiversity Database (http://www.biodiversity.co.za) at this time were virtually nonexistent.

The collection of *presence/absence* data is the primary method used to determine habitat use and species distribution and assumes that if a species is locally present, it should be perfectly detected (Tibor *et al*. 2009). Of course, this perfect detectability is rarely the case in nature, and the conclusion that a species is either absent or extinct often fails to take false absences, due to imperfect detectability, into consideration (Tibor *et al*. 2009).

The *ad hoc* nature with which data had been collected on this particular snake species provided little scientific backing to the assumption that it had been lost from the greater Cape Town area and this study was initiated to ascertain whether *H. haemachatus* is still to be found within the CCT.

METHODS

The CCT is divided into four regions; North, Central, South and East and is situated in the south western corner of the Western Cape Province, South Africa. Data from the CCT's official website (http://www.capetown.gov.za) indicate that the CCT has 294 km of coastline and covers an area of 2, 461 km². The CCT is situated in the Cape Floral Kingdom, the smallest and most diverse of the world's six floral kingdoms (CCT Nature Reserves 2010). It is also situated in one of the world's 34 biodiversity hotspots, namely the Cape Floristic Region (CFR). There are over 30 natural areas and nature reserves managed by the CCT within this area covering a range of ecosystems such as: fynbos, strandveld, wetlands, renosterveld and forest. Soil type and rainfall further determine the subdivision of these groups into vegetation types (CCT Nature Reserves 2010).

Communication media intended to reach a large proportion of the population in the greater Cape Town area were utilised in order to create awareness and consolidate *H. haemachatus* observations by members of the public. Flyers were handed out physically in areas where the species was previously thought to be present and a media release developed in conjunction with the CCT's communications department was published in a number of newspapers and broadcast on a number of radio stations.

Significant consideration was taken into account when analysing observations received from the general public. Factors such as weather conditions, behaviour and physical characteristics were used to elucidate the records. For example, a dark snake reported to display a clear hood while moving on a cool misty morning was considered more likely to be a rinkhals than the Cape cobra *Naja nivea*, as the former species is known to

be effective at regulating and maintaining a high body temperature even in cool conditions (Marais 2004), while the Cape cobra, for example, typically only leave their refuges in temperatures ranging between 26ºC and 28ºC (Phelps 2007).

However, these criteria on their own are not deemed sufficient to confirm a record and a combination of criteria was therefore used. In the case where a reported observation met one of the criteria, such as the evidence of venom spraying, the observation was recorded as *possible* (Po). If the observation met more than one of the criteria accurately it was placed into the category *probable* (Pr). Only observations accompanied by photographic evidence were considered *confirmed* (C).

RESULTS

Over a period of four months, 24 observations, dating between 2000 and 2010, recorded within the CCT, were sent in by members of the public. These observations comprised four *confirmed* (C), 16 *probable* (Pr) and four *possible* (Po) records. The CCT's Biodiversity Management Branch utilises a ten year time frame to ascertain a species' status: if a species is not recorded in five years it goes onto a red list and if it is still not recorded after 10 years it is thought to be locally extinct. An additional four *confirmed* (C) and three *probable* (Pr) observations were recorded within 10 kilometres of the study area (Figure 1). The majority of the records were collected from the eastern and southern region of the CCT particularly along the slopes of the Hottentot's Holland mountain range as well as on and around the Table Mountain National Park (TMNP).

DISCUSSION

The results clearly demonstrate that *H. haemachatus* is still present within the CCT and the surrounding areas. Although there is a lack of photographic evidence from the individuals reported on parts of the TMNP, the grouping of probable observations collected from here fall within a relatively small spatio-temporal scale, increasing the likelihood of an existing population in these areas. Moreover, the majority of observations from both the TMNP and from the eastern region of the CCT have been pinpointed to areas containing a variety of water bodies, particularly wetlands and dams, habitat features of known *H. haemachatus* preference (Marais, 2004).

A number of factors may influence the low detectability of *H. haemachatus*; however, this cannot yet be statistically demonstrated due to the anecdotal nature of previous evidence. Therefore, sites in the Cape currently known to have *H. haemachatus* present, sites previously known to have been occupied, and sites of potential occupancy should be surveyed and both detection probabilities and occupancy estimations calculated, in order for future inferences of distribution and status to have sound statistical backing.

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ON SOME ECOLOGICAL ASPECTS OF THE COASTAL LEGLESS LIZARD *ACONTIAS LITORALIS* (SCINCIDAE: ACONTINAE)

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INTRODUCTION

Studies on the ecology of lizards have focused primarily on limbed, surface dwelling species and information on the ecology of their fossorial legless counterparts remains poorly known. This lack of information was mentioned by Patchell & Shine (1986) more

than two decades ago and not much progress has been made to date, as most available information consists primarily of anecdotes. As in amphisbaenians, this lack of information regarding fossorial lizards may be attributable to their secretive habits associated with their burrowing lifestyle (Colli & Zamboni 1999). Such information is essential to understanding why certain species are successful in exploiting particular habitats (Meek 1986; Mason et al. 2000).

Acontias litoralis belongs to Acontinae, a subfamily comprising of 26 species belonging to two genera, namely *Acontias* and *Typhlosaurus* (Lamb et al. 2010). The genus *Acontias* comprises of 21 species ranging throughout southern Africa to East Africa (Lamb et al. 2010). Ecological data regarding members of the subfamily are generally lacking and anecdotal in nature. This study adds to the existing knowledge on microhabitat selection, population density and sex ratios in *A. litoralis*. In addition, we compare our data on population density with those available on a few other species of legless lizards in other parts of the world.

METHODS

Study area - This study was conducted at McDougal's Bay in Port Nolloth ($29^{0}02$'S, 16° 09' E) situated on the west coast of South Africa. The general area within which the study area falls is characterized by desert-like climate, with mean annual temperatures ranging 16 – 18 °C and annual rainfall below 100 mm (Schulze & McGee 1978). The vegetation is classified as Succulent Karoo (Low & Rebelo 1996). The area was approximately two to three kilometres from the coast line and consisted of white aeolian sand with sparse vegetation of low shrubs and sporadic patches of grass. A small residential area separated the coast line from the study area. No human activity seemed to be taking place in the area except on few occasions when shepherded goats were seen grazing in the area. The study area was visited for a three to four day period once in a season for four seasons: December 2000, March 2001, July 2001 and September 2001.

Microhabitat utilization - Before each search a quadrat of 100 m x 100 m (1 ha) was selected and marked using visible string. In each quadrat, lizards were collected by hand and searched to depletion by a group of two to three people using garden rakes. Lizards were searched for using a moderate-impact survey method, which involves using hand tools and a more extensive disturbance of vegetation and duff layers (Kuhnz et al. 2005). Searches involved carefully raking the sand to a depth of approximately 300 mm in areas under and adjacent to shrubs, in grass and under patches of leaf litter. Although not quantified, the most commonly encountered shrub species in the study area were *Amphibolia rupis-arcuatae, Cephalophyllum ebracteatum, Jordaniella* sp., *Mesembryanthemum guerichianum*, *Phyllobolus prasinus* and *Ruschia crassisepala*. For convenience, vegetation in the study area was grouped into three categories: '*R. crassisepala* group', 'other shrubs' group and 'grass' group. When a lizard was encountered, the type of vegetation under which it was found was documented. Lizards were killed three to four hours after capture by placing them in the freezer for 20 - 30 minutes. Body measurements (SVL & tail length) were made and lizards were subsequently preserved in 70%

ethanol and transported to the laboratory for further study.

Density – Population density (number of lizards/area) was calculated by dividing the number of lizards in a quadrat by the sampling area (1 ha).

Sex ratios – Adults were distinguished from juveniles by examining their reproductive status. The minimum size of females at sexual maturity was determined as the SVL of the smallest female containing vitellogenic follicles. Male size at sexual maturity was determined as that of the smallest male with enlarged testes containing sperm in the seminiferous tubules. Sex ratio was determined as the ratio of adult males to adult females in the sample.

Data analysis - Chi-square test (χ^2) and log-likelihood ratio for goodness-of-fit test (G test) were used to analyze sex ratio data and the observed versus expected frequencies in the number of lizards occupying different microhabitats, respectively (Zar 1996). Where applicable, data are reported as mean ± one standard deviation (SD). Differences between data sets were considered significant at $P < 0.05$.

RESULTS & DISCUSSIONS

Microhabitat utilization - Lizards collected in the study area were not distributed randomly among the three vegetation groups ($G_{0.05,3} = 352.68$, $N = 246$, $P < 0.001$). Significantly more lizards ($N = 222$, 90.2%) were found under the leaf litter at the base of *R. crassisepala* while 16 (6.5%) and 8 (3.3%) were found under other shrubs and in grass respectively. Additional data from two museum specimens showed that they were collected on a rubbish tip, an indication that *A. litoralis* may also utilize anthropogenic microhabitats.

Unlike other shrub species in the area which grow vertically, *Ruschia crassisepala* grows more horizontally and the branches cover a relatively larger surface area adjacent to the point of growth. When leaves abscise from the plant, they are trapped into a network of branches and accumulate over time, forming a dense layer of dry leaf litter which is colonized by the lizards. Miller (1944) and Kuhnz et al. (2005) found that California legless lizards (*Anniella pulchra*) were strongly associated with areas covered with vegetation material. Miller (1944) found that the presence of vegetation cover on sand alters its conditions by holding the moisture near the surface of the sand. Moisture in the sand enhances the substrate as a source of water for *A. pulchra* (Fusari 1985; Kuhnz et al. 2005). Also, vegetation material attracts and harbours a variety of insects, which are a source of food for the lizards (Miller 1944; Kuhnz et al. 2005, Mashinini 2004). Since there were no pools of standing water seen in the study area, it is highly likely that vegetation and leaf litter cover play a vital role in retaining moisture necessary for the lizards' metabolic requirements.

Density - A total of eight quadrats and 175 specimens of *A. litoralis* were used for population density estimates at the study site. The overall mean population density was 21.9 ± 8.27 lizards.ha^{-1}, and ranged from 33 (quadrat 6) and six (quadrat 8) specimens.ha^{-1}

respectively (Table 1). The lowest density (six specimens) was obtained in a quadrat in which the sand was becoming progressively harder, partially suggesting that loose, soft sand is an essential structural requirement of the lizards' microhabitat. While future studies will be needed to validate this, we presume that the lizards' density in the area is a function of the availability of suitable microhabitat.

Table1: Measured population densities of *Acontias litoralis* at eight quadrats at our study site

Date	Quadrat #	Density (animals.ha^{-1})
December 2000	1	16
	2	23
March 2001	3	19
	4	28
July 2001	5	24
	6	33
September 2001	7	26
	8	6

Studies have shown that lizards' population densities are highly variable between different species (e.g. Tinkle 1961; Tinkle *et al*. 1970; James 1991). Due to the lack of data in other species populations within the subfamily Acontinae, it is difficult at this point to comment on whether the estimates found in this study are comparatively high or low. The mean population density estimate of *A. litoralis* in this study, however, was the least when compared with densities of other few studied legless lizard species around the world (Table 2).

Table2: Density estimates for other fossorial lizard species

Taxon	Density (animals.ha^{-1})	Source
Acontias litoralis	21.9	This study
Anniella pulchra	228	Kuhnz *et al*. (2005)
Anniella pulchra	110	Bury (1985)
Anniella pulchra	28	Miller (1944)
Ophisaurus apodus	34.6	Meek (1986)

Sex ratios - Of the 243 lizards collected, 149 were adults and 97 were juveniles. Because a large number of juveniles could not be sexed with confidence, they were excluded in the sex ratio analysis. Of the 149 adults, 82 were females and 67 were males, or one male per 1.2 females. This ratio did not differ significantly from 1:1 ($\chi^2 = 1.51$, $P > 0.05$).

Most vertebrates have even sex ratios at birth, which sometimes change with increasing age due to differential mortality between males and females (Drickhamer & Vessey 1992). In lizards, these mortalities are associated with poor resources experienced by smaller males in territorial species, and predation on males during breeding season (Stamps 1983). A non-significant difference in sex ratio of *A. litoralis* in this study indicates equal survival rate to adulthood in both sexes.

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THE DISTRIBUTION OF *LYGODACTYLUS BRADFIELDI* HEWITT 1932 IN LIMPOPO PROVINCE, SOUTH AFRICA

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INTRODUCTION & METHDODS

Bradfield's Dwarf Gecko *Lygodactylus bradfieldi* Hewitt 1932, has a wide but disjunct distribution in southern Africa having been recorded from south-western Zimbabwe (Broadley 1991, 1992). In the first paper it was suggested that the taxon could occur in the north-western Transvaal as the species had been recorded in the Tuli Circle and along the Shashi River (Broadley 1991, 1992). Accordingly specimens of *Lygodactylus capensis* (A. Smith) 1849 from the former Transvaal, (now Northwest, Mpumalanga and Limpopo Provinces) were re-examined, as well as, for comparative purposes, specimens of *Lygodactylus bradfieldi* from Namibia, housed in the Transvaal Museum (Northern Flagship Institute). From this re-examination of specimens it was established that *L. bradfieldi* is present in Limpopo Province.

RESULTS

Forty-nine of the specimens examined were considered to be *Lygodactylus bradfieldi* and the distribution of the species in the north-western Limpopo Province is presented in Figure 1 with localities (per degree square) listed below:

2228-CA TM 58824 Farm Gwaai 62MR. -CD TM 58630 Farm Bottelang 115MR; TM 58790 Farm Koeberg 52MR; Farm TM 58765 Zoetfontein 154MR.-DB TM 58841 Farm Dardanellen 203MR.

2229-AB TM 67926 Farm Greefswald 37MS; TM 41748 Farm Weipe 47MS.-AC TM 50297 Farm Breslau 2MS; TM 58682, 58754 Farm William Porter 90MS.-BC TM 58661, 58843 Farm Belvedere 184MS; TM 58633 Farm Shelton Hall 102MS.-BD TM 58949 Farm Gulliver 237MS; TM 58828 Farm Killaloe 235MS. –CA TM 29892 All-days; TM 58767 Farm Loretto 264MS. –CB TM 58703 Farm Dirleton 276MS. -CC TM 58669, 58792 Farm Greenfield 333MS. –CD TM 14948, 14949, 14950, 14951 Salt Pan. -DA TM 58606 Farm Bordeaux 555MS.

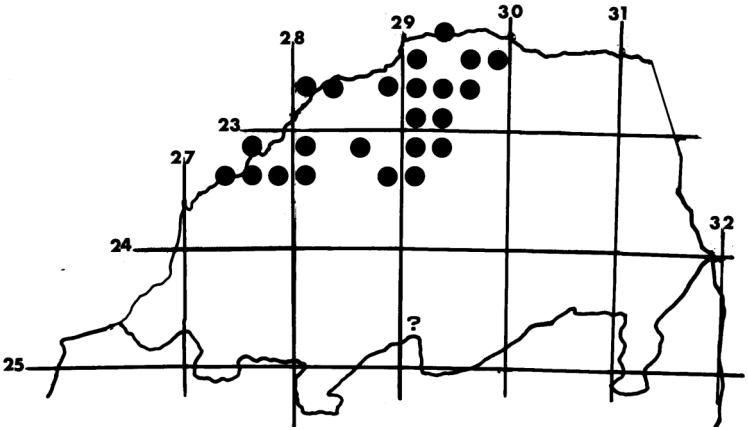
2327-AD TM 58789, 58797 Farm Lisbon 19LQ. –BA TM 58688, 58820 Farm Uitspan 65LQ. –BC TM 58702 Farm Wolmunster 108LQ. –BD TM 58730 Farm Paarl 102LQ

2328-AA TM 58774, 58808, 58815, 58825 Farm Moonlight 111LR. –AC TM 58806 Farm Melinda 164LR. –BA TM 58748 Farm Glen Alpine 304LR. –BD TM 58665, 58678, 58742 Farm Harriets Wish 393LR

2329-AA TM 58698, 58752 Farm Ameland 11LS; TM 58769 Farm Urk 10LS. –AB TM 47203 Vivo area; TM 58718 Farm York 108LS. –AC TM 58585 Farm Bochum 145LS

2429-CA TM 58594 Farm Gewenscht 562KS; TM 4309, 4310 Brak River

Figure 1: The distribution of *Lygodactylus bradfieldi* in Limpopo



Province, South Africa

Namibian Material examined: TM 38288 Waterberg 2017AD; TM 63108, 63109, 63110 Okosongomingo 2017CA; TM 57284 Naukluft 2426AA; TM 41863 Farm Holoog 106 2717AC; TM 28010 Farm Velloor 2019CA; TM 28005 Farm Middelpos, 11 miles (17,6 km) from Karasberg 2718BA; TM 9529 Waterberg District 2017AD; TM 48615 Farm

Aigamas 471 1917AD; TM 28268 Farm Hobas, 15 miles (24 km) east of Fish River Canyon 2717DA; TM 31171, 39478, 39479, 39480 Gobabeb 2315CA; TM 4558, 7578, 7579 Farm Quickborn, Okahandja 2117AA; TM 3054 Quibis 2616DB; TM 3052, 3053 Narudas Sud 2718BD; TM 44419 Swartbank 2314CD; TM 48452 Farm Omatako 189 2116BA; TM 30468 Kombat 1917DA; TM 47264 Soutrivier, Kuiseb River 2314DB; TM 50137 2 km south of Nomidas 2214DA; TM 3049, 3050 Wasserfall on farm Wittenhorst 2718BA; TM 50807 Sesfontein 1913BA; TM 71354. Specimens considered to be *L. capensis* include: TM 71355 Epupa Falls 1613CD; TM 39250 Linyanti 1823B?; TM 71316 Opuwo; TM 33513 Farm Labora, Gobabis District 2119CD.

DISCUSSION

The occurrence of *Lygodactylus bradfieldi* in the Limpopo Province was previously overlooked as the taxon was formerly only recorded from the Northern Cape Province, Namibia and eastern Botswana at the southern margin of the Makgadigadi Pans. The subsequent discovery of the species in south-western Zimbabwe resulted in this re-evaluation and confirmation of the taxon in the northwest of the province. The species is very similar to *Lygodactylus capensis* and there is some difficulty in separating the two species morphologically. All of the characters used to separate the two taxa overlap which makes separation difficult, especially when considering that the two species occur sympatrically in some areas.

According to FitzSimons (1943) the main distinguishing character is the number of perinasal scales, which in *L. bradfieldi* number four including the rostral, 1st upper labial and two postnasals while *L. capensis* has mostly five including the rostral, 1st upper labial and three postnasals. In a sample of 277 *L. capensis* specimens (outside the distribution of *L. bradfieldi*) the postnasals range from two (29,6%, n = 82), two plus a granular scale (6,8%, n = 19) and three (63,5%, n = 176). It was apparent during this assessment that the nasorostral scales of *L. bradfieldi* mostly tended to be small, while those of *L. capensis* were mostly large but there are intermediates, again limiting the usefulness of this character.

Similarly FitzSimons (op cit) mentions that *L. bradfieldi* has five preanal pores in males whereas *L. capensis* ranges from 4-7 (usually 5). Specimens of *L. bradfieldi* examined from Namibia and the Limpopo Province exhibited 4-6 preanal pores mostly five, while *L. capensis* ranged from 3-7 with four and to a lesser extent five predominating (Appendices 1 & 2). In a sample of 28 specimens of the *L. bradfieldi* from Limpopo Province, two (7%) had four, 24 (86%) had five and two (7%) had six. In contrast, in a sample of 252 specimens of *L. capensis*, six (2,4%) exhibited 3 pores, 163 (64,7%) had four, 68 (27%) had five, 14 (5,5%) had six and 1 (0,4%) had seven. Some females of both species exhibited undeveloped preanal pores which were not included in this analysis.

Broadley (1991, in litt) and Branch (1998) also refer to the irregular arrangement of the subcaudals of *L. bradfieldi*. This was also observed in the specimens examined but some individuals exhibited regular arrangement at least on the distal half of the tail where scales were arranged in 2.1.1 or 2.1, 2.1, 2.1.1, 2.1.1 sequences. While this assists

the diagnosis, it is restricted to those individuals with original tails. Many of the specimens examined had tails broken off or were regenerating, obscuring the original arrangement (Table 1, Appendix).

According to Broadley (loc. cit), in the Tuli Circle, Zimbabwe, the two species occur parapatrically, with *L. bradfieldi* on trees away from the Shashi River and *L. capensis* along trees in the riparian zone. Similarly on Sentinel Ranch, most *L. capensis* were taken on live trees and most *L. bradfieldi* were found on dead trees (Broadley in litt). This is in strong contrast to the occurrence of the former elsewhere in its range, inhabiting live and dead trees as well as rotting logs and branches on the ground (FitzSimons 1943, Jacobsen 1982, 1989, Branch 1998). Similarly elsewhere in the distribution of *L. bradfieldi*, it occurs on Acacia trees and also on rocks (FitzSimons op cit).

However in areas of parapatry it is uncertain what happens along the ecotone between the riparian vegetation and the drier woodland where both taxa may be found. *L. capensis* is widespread in areas of open woodland throughout much of the Northwest and Limpopo Provinces, habitat which, where the two species occur, is taken over by *L. bradfieldi*. It is peculiar then that the latter does not have a wider distribution in the north of the Limpopo Province and southern Zimbabwe as mentioned by Broadley (1991).

Although these distribution records are based on a conservative evaluation there remain doubts about some, due to the overlap in characters and the subsequent breakdown in ecological requirements with distance from areas of sympatry. This pertains in particular to females that have fewer discriminating characters. TM 58594, a female with undeveloped precloacal pores, from the Farm Gewenscht 562KS, 2429CA appears to be typical *L. bradfieldi* with four perinasals including small nasorostrals but the locality is far removed from the nearest other for the species in the province (Figure 1) and should be viewed with caution as it may be a translocation or an atypical Cape Dwarf Gecko.

No specimens from the Northwest Province adjoining the Northern Cape Province and Botswana in the west could be referred to *L. bradfieldi*. Perhaps a more in depth assessment along the upper Limpopo and Molopo Rivers may provide a link between the current disjunct populations.

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Appendix 1: Details of material examined from Limpopo Province, South Africa. (I = irregular; Reg = regular; R = regenerating; B/C = broken on capture; Nas = nasals; I = internasals; PP = precloacal pores; PNR = posterior nasorostrals; Sub = subcaudals).

TM No.	Locality	Sex	QDS	Nas	Int	PP	PNR	Sub
58825	Moonlight 111LR	M	2328AA	2	3	5	small	Reg, 2.1.1
58748	Glen Alpine 304LR	M	2328BA	2	2	6	small	R
4310	Brak River	F	?	2	2	5	moderate	B/C
58754	William Porter 90MS	M	2229AC	2	2	5	small	I
41748	Weipe 47 MS	M	2229AB	2	1	5	small	I
58661	Belvedere 184MS	M	2229BC	2	2	5	small	B/C
58767	Loretto 264MS	M	2229CA	2	2	5	?	B/C
58688	Uitspan 65LQ	M	2327BA	2	3	5	small	R
58824	Gwaai 62MR	F	2228CA	2	3	0	small - moderate	I
58808	Moonlight 111LR	F	2328AA	2	2	0	small	I
58594	Gewenscht 562KS	F	2429CA	2	2	5	small	B/C
58843	Belvedere 184MS	F	2229BC	2	1	0	?	R
14949	Salt Pan	F	2229CD	2	1	5	moderate	B/C
58789	Lisbon 19LQ	F	2327AD	2	2	0	moderate	B/C
58606	Bordeaux 55MS	M	2229DA	2	2	5	small	I
67926	Greefswald 37MS	M	2229AB	2	2	5	moderate	B/C
14948	Saltpan	F	2229CD	2	2	0	?	?
14950	Saltpan	M	2229CD	2	2	5	moderate - large	B/C
14950	Saltpan	M	2229CD	2	2	5	moderate	I, R
58774	Moonlight 111LR	F	2328AA	2	3	0	?	?
58949	Gulliver 237MS	M	2229BD	2	1	5	?	?
58678	Harriets Wish 393LR	F	2328BD	2	3	5	?	?
58828	Killaloe 235MS	J	2229BD	2	2	0	?	?
58841	Dardanellen 203MR	M	2228DB	2	2	5	small - moderate	B/C
58769	Urk 10LS	J	2329AA	2	2	0	large	I
58702	Wolmunster 108LQ	F	2327BC	2	1	0	small - moderate	I
50297	Breslau 2MS	M	2229AC	2	3	5	moderate	B/C
58630	Bottelang 115MR	M	2228CD	2	2	5	small - moderate	B/C
58718	York 108LS	F	2329AB	2	1	0	small	B/C
4309	Brak River	M	?	2	1	5	small - moderate	I, Reg
58730	Paarl 102LQ	F	2327BD	2	2	0	small	I
58752	Ameland 11LS	F	2329AA	2	2	0	moderate	I
58675	Zoetfontein 154MR	F	2228CD	2	3	0	small	Reg, 2.1, 2.1
58703	Dirleton 276MS	F	2229CB	2	1	0	small	B/C
58682	William Porter 90MS	M	2229AC	2	2	6	small	B/C

Appendix 1 (cont.)

TM No.	Locality	Sex	QDS	Nas	Int	PP	PNR	Sub
58820	Uitspan 65LQ	F	2327BA	2	2	0	small	B/C
47203	Vivo area	F	2329AB	2	3	5	small	I
58806	Melinda 164LR	F	2328AC	2	2	0	moderate - large	I, 2.1, 2.1
58792	Greefswald 333MS	M	2229CC	2	2	5	small	B/C
58665	Harriets Wish 393LR	F	2328BD	2	3	0	small	B/C
58702	Wolmunster 108LQ	F	2327BC	2	2	0	?	?
58790	Koeberg 52MR	F	2228CB	2	1	0	?	Reg, 2.1.1
58756	Greenfield 333MS	F	2229CC	2	2	0	moderate	I, B/C
58742	Harriets Wish 393LR	M	2328BD	2	2	4	small	B/C
29892	Alldays	M	2229CA	2	2	5	moderate	R
14951	Saltpan	M	2229CD	2	2	5	moderate - large	I
58815	Moonlight 111LR	F	2328AA	2	3	0	small	I
58669	Greenfields 333MS	F	2229CC	2	2	0	small	R
58633	Shelton Hall 102MS	F	2229BC	2	3	0	?	?

Appendix 2: Details of material examined from Namibia. (Legend as for Appendix 1 above).

TM No.	Locality	Sex	QDS	Nas	Int	PP	PNR	Sub
71355	Epupa Falls	M	1613CD	3	1	5	?	I, 2.1.1
39250	Linyanti	F	?	3	1	0	?	I, Reg
71354	Epupa Falls	F	1613CD	2	1	0	?	Reg, 2.1.1
33513	Farm Labora, Gobabis District	F	2119CD	2	1	0	?	Reg, 2.1.1
38288	Waterberg	F	2017AD	2	2	0	?	I
63110	Okosongomingo	F	2017CA	2	3	0	?	Reg
57284	Naukluft	F	?	2	1	0	?	B/C
41863	Holoog 106	?	2717AC	2	3	?	?	B/C
28010	Farm Velloor	F	2019CA	2	2	0	?	I
28005	Farm Middelpos, 17,6 km from Karasberg	?	2718BA	2	2	0	?	B/C
9529	Waterberg District	M	2017AD	2	1	4	?	I
48615	Aigamas 471	M	1917AD	2	1	5	?	Reg
28208	Farm Hobas, 24 km E of Fish R. Canyon	F	2717DA	2	2	0	?	R
31171	Gobabeb	M	2315CA	2	2	5	?	B/C
7579	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	2.1.1, B/C
7577	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	I R
3054	Quibis	F	2616DB	2	1	0	?	B/C
3053	Narudas Suid	M	2718BD	2	2	5	?	B/C
39479	Gobabeb	F	2315CA	2	2	0	?	I
39478	Gobabeb	M	2315CA	2	1	5	?	R

Appendix 2 (cont.)

TM No.	Locality	Sex	Degree	Nas	Int	PP	PNR	Sub
44419	Swartbank	F	2314CD	2	3	0	?	I, Reg, B/C
48452	Omatako 189	M	2116BA	2	3	5	?	I R
30468	Kombat	F	1917DA	2	3	0	?	Reg, 2.1.1
71316	Opuwo	F	1813DB	3,2	1	0	?	I
63109	Okosongomingo	M	2017CB	2	2	4	?	I B/C
63108	Okosongomingo	F	2017CB	2	2	0	?	R
47264	Soutrivier, Kuiseb River	M	2314DB	2	3	5	?	R, 2.1.1
39480	Gobabeb	M	2315CA	2	2	4,1	?	B/C, 2.1.1, I
50137	2km south of Nomdas	F	2214DA	2	2	0	?	I, R
4558	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	B/C
3052	Narudas Suid	F	2718BD	2	2	0	?	?
3050	Waterfall of Farm Wittenhorst	M	2718BA	2	2	4	?	B/C
7578	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	B/C
3049	Waterfall of Farm Wittenhorst	F	2718BA	2	1	0	?	B/C
50807	Sesfontein, Kaokoveld	J	1913BA	2	2	0	?	?

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THE TERRESTRIAL REPTILES OF SIR BANI YAS ISLAND, UNITED ARAB EMIRATES

ORTWIN BOURQUIN

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INTRODUCTION

A survey for animals potentially harmful to man was conducted on Sir Bani Yas Island from 28 March to 26 April 2008 under contract to International Conservation Services for the Tourist Development and Investment Company (TDIC) of the United Arab Emirates. The survey included terrestrial reptiles and took place from 28 March to 26 April 2008. Collected and photographed reptiles were identified by the author and D. Egan, and collected material is at present kept on the island. With the exception of Hardwick's rat snake (Tiedemann 1991), there were no published records of other reptiles from Sir Bani Yas until Soorae (2004) listed three lizards and three snakes from the Island. Thirteen species of terrestrial reptiles were recorded during the March/April 2008 survey, and subsequently an additional two species were reported in an unpublished document to the TDIC by the Dome Oilfield and Engineering Services, 2009.

Nine of the fifteen species recorded here thus represent the first published records for Sir Bani Yas Island, of which seven species were recorded for the first time during this survey, and two species were recorded for the first time subsequent to this survey.

METHODS

Study area - Sir Bani Yas Island is located in the Persian Gulf, 9 km off the Jebbel Dhanna headland, some 170 km west of Abu Dhabi, in the Abu Dhabi Emirate, United Arab Emirates, at 24° 30.7' N; 54 ° 25.5' E. The island was formed 5 mya when a dome of salt deposits, covered by limestone and sandstone, surged upward through the sea (Aston 1985). There is a central core of mountains with a high point of 482 m, surrounded by flat to undulating stony and sandy land. The island is oval, originally measuring 11.5 km by 8 km. Extensions to the coastline, by dredging sand and coral from the sea, and by moving rock from the central mountains have resulted in an increase in the island's size to about 12.5 km by 8.5 km.

Development has resulted in the almost complete destruction of the sparse, original natural vegetation complexes. An example of such cover was found in an inland, fenced archaeological site, in which no bulldozing, planting or irrigation had taken place. The dominant plant was *Heliotropium kotschyi,* other plants included *Chenopodium album, Helianthemum lippii, Malva parvifolia, Polycarpaea repens, Zygophyllum simplex,* and *Zygophyllum qatarense.* The cover was generally less than 600 mm tall. Some 3.5 million trees and shrubs have been planted and, with exception of mangrove communities, are irrigated from desalinized water pumped from the mainland. Pastures to provide green fodder for large mammals have also been established. Soil-water relations have been altered to an unknown degree by the extensive irrigation systems maintaining the cultivated plants. There is no surface freshwater, except in small artificial ponds or troughs established as drinking sites for large mammals.

Substrates vary from sand-dunes, gravel flats, stony areas to bare rock. Some of these have been man-caused by deposition of rocks and sand, or by bulldozing. Thousands of tons of sand were transported to the island from the mainland to provide a better quality substrate for tree growing. Large enclosures were erected to contain the over 20 000 large mammals and some birds (Ostrich, Emu, Rhea) present at the time of this survey, mainly species adapted to arid conditions. The area is being developed as a tourist destination.

Collection - For ground dwelling animals, array traps modified from designs given in Crosswhite et al (1999), and Tomasek et al (2007) were used. Twenty trapping sites were chosen to represent conditions on the island. These involved wholly transformed habitats, partially transformed habitats and natural habitats. Wholly transformed habitats were those where the original ground surface and its native vegetation had been bulldozed, and/or covered with bulldozed and imported sand or rock spoil, or with buildings, roads and other developments. Partially transformed habitats where areas which had not been bulldozed or covered but which had trees planted in them. The greater part of Sir Bani Yas has been modified by bulldozing and/or tree-planting, so that there are no large areas of wholly natural habitats except in the central mountains, rocky hills and ridges. Because of the mainly rocky and stony nature of the ground in the central areas, little pit-trapping could be performed there except in small *wadis* (drainage lines) in which sand had accumulated. The traps were checked each morning. A total length of 440 m of arrays was used for the survey. Array traps were left *in situ* for at least five days before being moved to new localities.

Night and day searches were undertaken in the areas where traps were placed, as well as in areas with no traps. The searches were conducted on foot by two to three people, walking through a chosen area, and investigating rubble, litter, buildings, rock faces, rocky areas and gravel plains. In sandy areas tracks were followed and attempts to locate burrowing fauna were made by digging. Below ground-level, concrete-lined water-pumping stations for maintaining the irrigation systems were checked at intervals along the road systems. Some specimens found were collected by hand as voucher specimens and subsequently preserved, others were identified and released. All collected specimens were photographed, as were numbers of other specimens which were caught and subsequently released.

SYSTEMATIC ACCOUNT

Family: GEKKONIDAE

***Bunopus tuberculatus* (Blanford, 1874) Baluch rock gecko or Arabian Desert gecko**
This species was not common around human habitations, being more often found in vegetated sandy areas. The largest one found during this survey measured (SVL + tail) 41.7 mm + 57 mm, total length 98.7 mm. (Fig. 1, Fig. 5).

***Cyrtopodion scabrum* (Heyden, 1827) Rough-tailed bowfoot gecko**
The species was found in open sand areas with scattered clumps of small bushes (*Heliotropum kotschyi*) and around human structures, such as water tanks, water control points, under rubbish lying near buildings and stone walls, usually with planted trees in the near vicinity. They were often seen in association with *Hemidactylus turcicus.* The largest measured was 49 mm + 25 mm (truncated). The only gecko measured with its tail intact measured 41.5 mm + 56.5 mm. Recorded previously by Soorae (2004). (Fig. 1).

***Hemidactylus robustus* (Heyden, 1827) Red sea leaf-toed gecko**
The Red sea leaf-toed gecko is nocturnal and is strongly associated with structures built by humans, including water tanks, pumphouses and under debris in the vicinity of such structures. It is capable of spreading into planted areas several hundred meters from man-made structures, especially if there is a man-built structure or rubble lying around there. It was not found on the buildings inhabited by Yellow-bellied house geckos, and there is no doubt that the larger house geckos prey on the smaller Red sea leaf-toed geckos. The largest measured individual was 45 mm + 14 mm (truncated), while the largest measured with a complete, unregenerated tail was 44 + 50.5 mm. A fair number of these geckos were gravid. Recorded previously by Soorae (2004) as *Hemidactylus turcicus* Linnaeus 1758. (Fig. 1, Fig. 5).

***Hemidactylus flaviviridis* (Rueppell, 1835) Yellow-bellied house gecko**
The Yellow-bellied house gecko was found in and on buildings in the labour housing complex, and appears to be common in this restricted area. It is very common throughout its range around coastal Arabia. The only house gecko measured 78 + 69 mm (regenerated). Recorded previously by Soorae (2004). (Fig. 2).

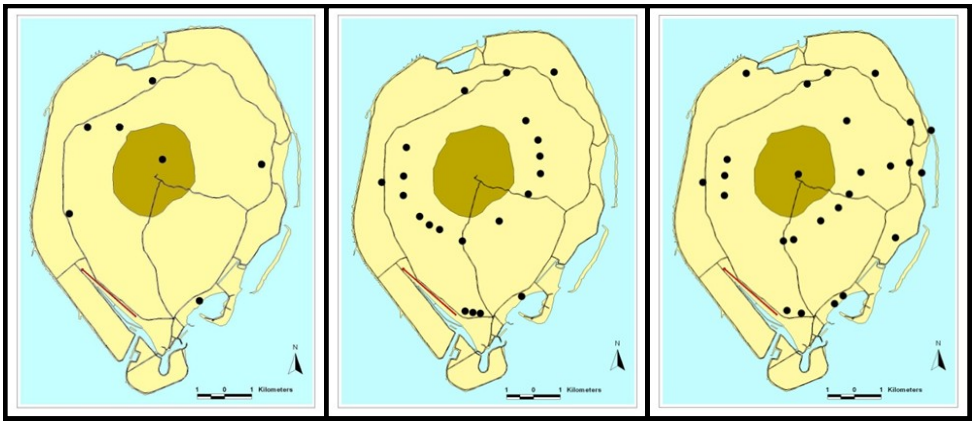

Fig. 1: (L to R) *Bunopus tuberculatus*, *Cyrtopodion scabrum,* & *Hemidactylus robustus*

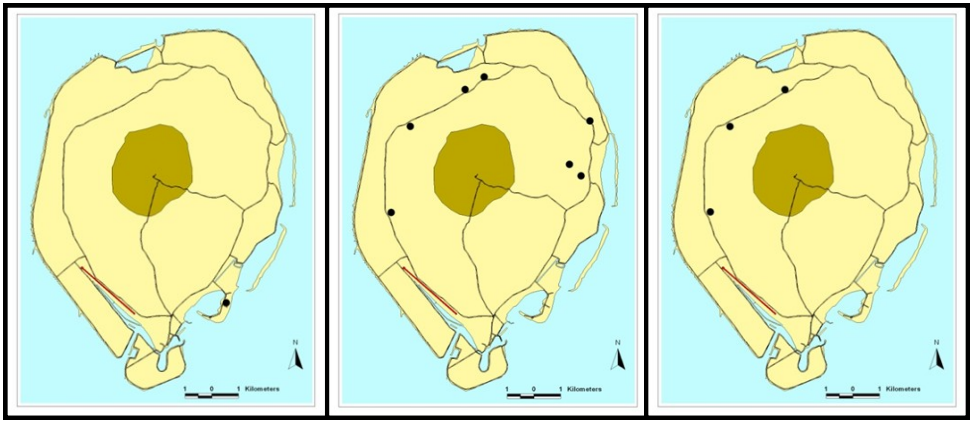

Fig. 2: (L to R) *Hemidactylus flaviviridis*, *Stenodactylus sleveni ,* & *S. arabicus*

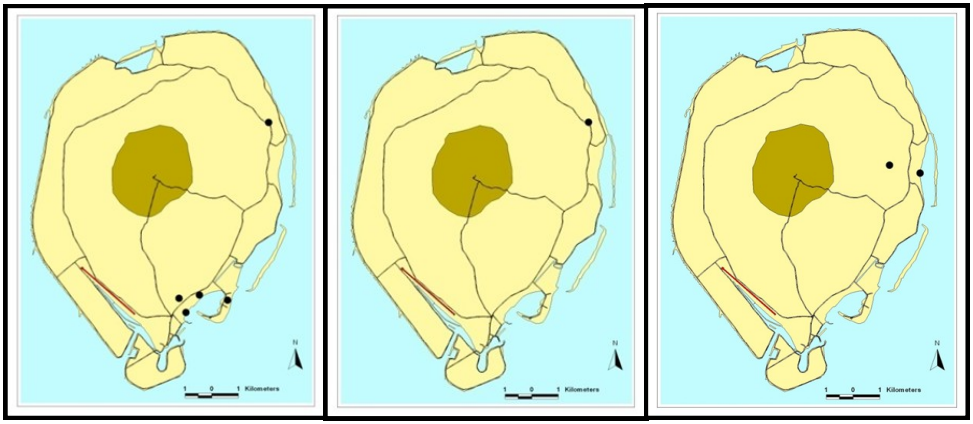

Fig. 3: (L to R) *Chalcides ocellatus*, *Scincus scincus conirostris ,* & *Eryx jayakari*

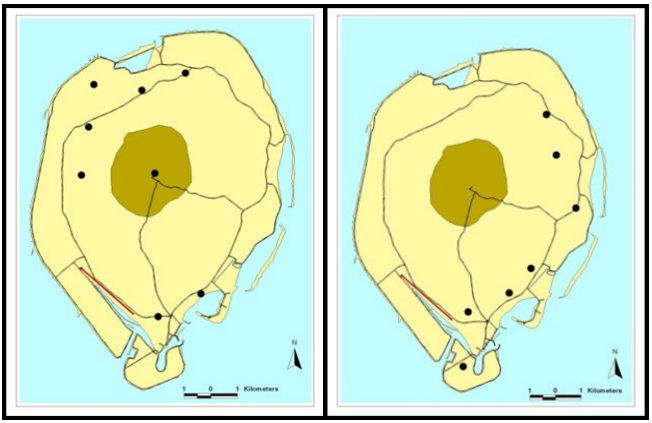

Fig. 4: (L to R) *Platyceps ventromaculatus*, and *Psammophis s. schokari*

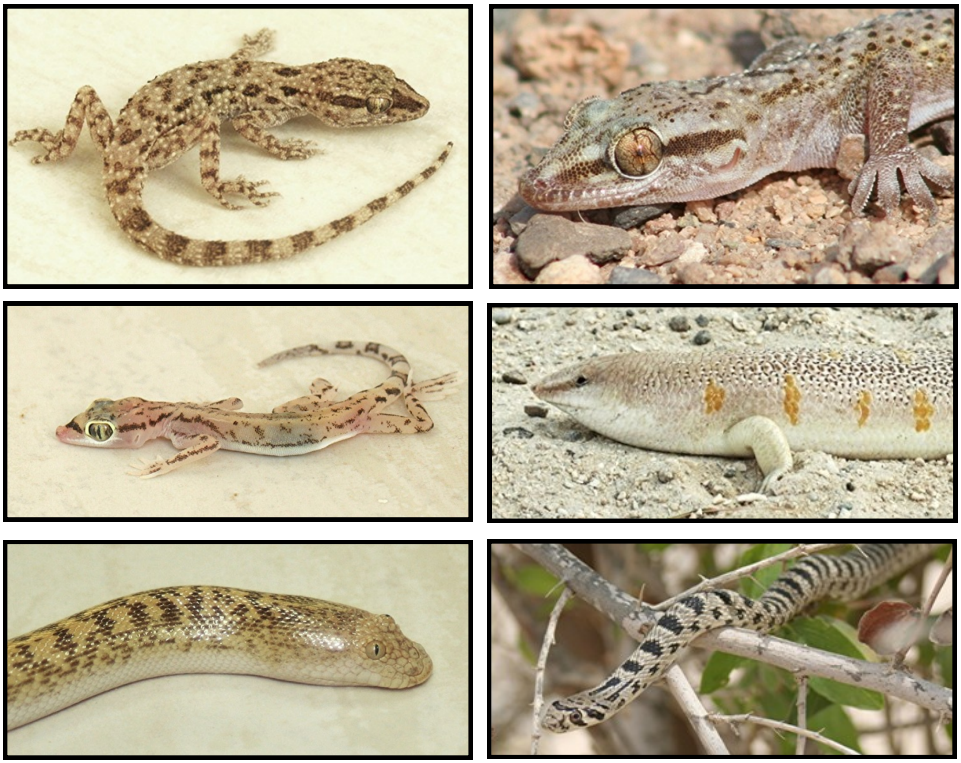

Fig. 5: (L to R, top to bottom) *Bunopus tuberculatus, Hemidactylus robustus*, *Stenodactylus arabicus*, *Scincus scincus conirostris, Eryx jayakari*, *Platyceps ventromaculatus.* Photograph by O. Bourquin.

***Hemidactylus persicus* (Anderson, 1872) Persian leaf-toed gecko**
A single specimen was found on 23 September 2009 in the central rocky area (Dome Oilfield and Engineering Services, 2009).

***Pristurus rupestris* (Blandford, 1874) Rock semaphore gecko**
One record is known from the central area of the Island (Dome Oilfield and Engineering Services, 2009). There is no information as to the date of collection or the specific habitat.

***Stenodactylus sleveni* (Haas, 1957) Sleven's sand gecko**
Sleven's sand gecko has only been found in sandy or partially sandy areas, usually where there is some form of plant cover, especially small bushes. One was found walking across a gravel plain between sand dunes; all others were captured in pit traps. Several were found to be gravid. The largest one measured 64 + 43.5 mm. (Fig. 2).

***Stenodactylus arabicus* (Haas, 1957) Arabian sand gecko**
The Arabian sand gecko was found exclusively in sand dune areas, and seemed to prefer areas with scattered small shrubs. It is not as wide-spread as Slevin's sand gecko on Sir Bani Yas. The front feet of this species are webbed, making it easier for the animal to dig and to run on loose sand. It is said to lay a single egg only (Hellyer and Aspinall 2005, quoting Leptien 1992). The only gravid Arabian sand gecko found was carrying one egg. The largest measured was 34.5 + 31 mm. (Fig. 2, Fig. 5).

Family: LACERTIDAE

No lacertids were found. The Short-nosed desert lizard *Mesalina brevirostris* Blanford, 1874, is a wide-spread UAE species, and was expected to occur on Sir Bani Yas as it has been found on the mainland and on other islands nearby (eg Muhayyamat Island, Soorae 2003; Umm al Kurkum, Marius Prinsloo, pers com and specimen, 11.iv.08). Its preferred habitat is sparsely vegetated flat sandy or gravel plains. However, suitable vegetated beaches are not present, all the present beaches around Sir Bani Yas being artificially built up from dredged and bulldozed spoil, including sand from its original beaches. A female from Umm al Kurkum contained 4 developing eggs, and measured 56.5 + 72 mm (truncated).

Family: SCINCIDAE

***Chalcides ocellatus* (Forskal, 1775) Ocellated skink**
This species was frequently encountered near man-made structures, especially in presence of plant and human debris, and only along the developed south-east section of the Island. The lizard is diurnal but is not active during the hotter times of day. Two to four young are born alive. The largest collected individual measured 91 + 149 mm (truncated). (Fig. 3).

***Scincus scincus conirostris* (Blanford, 1881) Sandfish**
A single specimen was captured in a pit trap in a partially transformed habitat, unbulldozed but planted with trees. The sand substrate was fairly well compacted, with patches of softer sand scattered on the surface. It was not measured, and was released live. It attains a total length of about 200 mm. The lizard is mainly a sub-surface dweller but comes to the surface during cooler periods to sun itself, and also during mating periods. The Sir Bani Yas specimen had bars of orange-yellow down the sides. (Fig. 3, Fig. 5).

Family: BOIDAE

***Eryx jayakari* (Boulenger, 1888) Arabian sand boa**
An Arabian sand boa was caught in a well sanded *wadi* in which no bulldozing had taken place, but where woody plants (*Acacia tortilis, Salvadora persica*) had been established and were being maintained by an irrigation pipe system. A second sand boa was found in an un-irrigated sandy area under a pile of planks between a lagoon and a hard surfaced planted area. Both animals were kept captive for a few weeks and spent the day under sand, emerging occasionally during early evening and during the night to crawl intermittently on the surface. They fed readily on geckos presented to them, constricting them and commencing swallowing while the geckos were still alive. Under natural conditions, the boa feeds almost entirely on nocturnal geckos, with very young snakes also feeding on soft-bodied invertebrates. They may also feed on rodents, shrews (Egan 2007) and amphisbaenians (Gasperetti 1988). The specimens from Sir Bani Yas were not measured, as they were released live, but appeared to be between 200 – 230 mm long. There is the possibility that Sand boas were introduced to the Island in loads of sand transported from the mainland, because sand boas are common in the mainland (pers. com. D. Egan 2008). Recorded previously by Soorae (2004). (Fig. 3, Fig. 5).

***Platyceps ventromaculatus* (Gray, 1834) Hardwick's rat snake**
The rat snake was found in various habitats, such as well-watered gardens and tree groves, thatched roof of an aviary; water-control box in a totally transformed habitat in the north of the Island, and on an undisturbed hill among loose rocks. The largest specimen from the Island measured 514 + 171 mm. They are normally ground dwelling, but can climb trees with ease. This species was not recorded from the UAE by Gasperetti (1988), or from mainland UAE (Egan, 2007). It was recorded from Sir Bani Yas by Tiedeman (1991) based on specimens preserved by Bish Brown in 1989 and 1991 (Brown 1991), and was also recorded by Soorae (2004). (Fig. 4, Fig. 5).

***Psammophis shokari schokari* (Forskal, 1775) Afro-Asian sand snake**
A number of specimens were recorded and the species was seen more frequently than other snakes on the Island. The largest one, a road-killed male, measured 1430 mm total length. The species feeds on a variety of small vertebrates (birds, lizards, rodents), and is considered to be a tree snake rather than a ground dweller (Gasperetti, 1988). One was tracked through a sandy area to a small tree (*Acacia tortilis*) into which it had climbed. The transformation of the Island, with the establishment of a great number of trees, may suit this species. Recorded previously by Soorae (2004).(Fig. 4).

ACKNOWLEDGEMENTS

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HERPETOLOGICAL SURVEY OF ROOIPOORT NATURE RESERVE, NORTHERN CAPE PROVINCE, SOUTH AFRICA

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INTRODUCTION

Rooipoort Nature Reserve is one of the oldest conservation areas in southern Africa. The reserve dates back to as early as 1893 and is comprised of more than 40 000 hectares. It is located approximately 65 km west of Kimberley, Northern Cape Province (2824CA & 2824CB, 1000 m – 1200 masl). It is situated in the transition zone of Karoo, Kalahari, and grassland zones and also borders more than 32 km of the Vaal River riverine habitat in the west. We conducted a herpetological survey of the Rooipoort Nature Reserve, Kimberly, Northern Cape Province, South Africa. The main survey took place from 8 – 15 October 2009 and a second survey from 27 January – 1 February 2010. The purpose of the surveys was to 1) document the species that occur on the reserve and 2) to provide data, samples, and museum specimens to the Reptile Speciation Project (http://sites.google.com/site/reptilespeciationproject/). Rooipoort Nature Reserve was previously identified as a significant gap in the current sampling for the project, and as such the reserve was targeted for data collection.

METHODS

Three standard Y-shape trap arrays (4 buckets on the ends and 6 funnel traps on the sides) were set in different corners and habitat types of the reserve (trap 1: 28.61603S; 24.32650E; trap 2: 28.57303S; 24.20439E and trap 3: 28.59664S; 24.21083E) and the traps were visited twice daily (morning and evenings). In addition, the team conducted daily active searches for reptiles in different habitat types. Reptiles were captured by hand or by noosing them in the case of lizards. All reptiles and amphibians encountered were captured for proper identification purposes. DNA samples were obtained from target species and representative voucher specimens of lacertids were deposited in the Port Elizabeth Museum (PEM).

SYSTEMATIC ACCOUNT

(Known distribution data based on Minter et al. 2004 for amphibians, and the preliminary SARCA maps. * represents species not previously recorded in 2824CA, ** represents species not previously recorded in 2824CB, *** represents species not previously recorded in 2824CA and 2824CB.)

Family: BREVICIPITIDAE

Breviceps adspersus* Peters, 1882**

After heavy rain on the night of 11 & 13 October 2009, adult *B. adspersus* were captured in all three traps. (Fig. 1).

Family: BUFONIDAE

Amietophrynus* (=*Bufo*) *poweri* (Hewitt, 1935)*

Adult males were calling and captured at an artificial cement garden pond near the main farm house (28.63703S; 24.28044E). One female was captured near the research accommodation.

Vandijkophrynus (=Bufo) gariepensis* (Smith, 1848)

Numerous tadpoles were observed from the same artificial cement waterhole as the *A. angolensis* tadpoles.

Family: HYPEROLIIDAE

***Kassina senegalensis* (Duméril & Bibron, 1841)**

Specimens were observed in the empty swimming pool at the main house and were captured in the traps after heavy rain.

Family: PYXICEPHALIDAE

***Amietia* (=*Afrana*) *angolensis* (Bocage, 1866)**

Adults and tadpoles were observed from two artificial waterholes created for game in the reserve (28.57656S; 24.18650E and 28.57656S; 24.18650E).

Cacosternum boettgeri* (Boulenger, 1882)*

After heavy rain, *C. boettgeri* males were heard calling at all temporary water bodies on the eastern side of the reserve.

***Tomopterna cryptotis* (Boulenger, 1907)**

Numerous adult males were heard calling in the same artificial cement pond as the *A. poweri* specimens were observed. Call recordings were made and compared to Du Preez & Carruthers (2009) for proper identification.

Family: PELOMEDUSIDAE

Pelomedusa subrufa* (Lacepéde, 1788)*

One specimen was observed in the same pond as *A. poweri* and *T. cryptotis*.

Family: TESTUDINIDAE

Psammobates oculifer* (Kuhl, 1820)*
One specimen was observed on the grassland area to the east of the reserve (28.61716S; 24.32233E).

Stigmochelys pardalis* (Bell, 1828)**
Specimens were observed on the side of the main roads to the west of the reserve, associated with more compacted soil types. The adult tortoises were small in size and resemble the *S. p. bacocki* race.

Family: AGAMIDAE

Agama aculeata* Merrem, 1820 **
Specimens were captured on the side of the roads, sitting on gravel or sand. They were observed over the whole of the reserve.

Agama atra* Daudin, 1802**
Specimens were captured on rocky outcrops at trap 3 and the rocky outcrops to the west of the reserve.

Family: CHAMAELEONIDAE

Chamaeleo dilepis* Leach 1819*
One juvenile was captured on a night drive, near the main gate of the reserve (28.65742S; 24.25217E).

Family: CORDYLIDAE

Cordylus polyzonus* Smith, 1839**
Specimens captured at Rooipoort were red/orange in colour. Specimens were not captured on the big rocky outcrops, but were more associated with scattered roadside rocks (28.59664S; 24.21083E and 28.62147S; 24.34228E).

Family: GEKKONIDAE

Chondrodactylus bibronii* (Smith, 1846)**
These thick-toed geckos were found over the whole reserve, associated with large rock outcrops. Specimens were also captured on the walls of two old buildings.

Lygodactylus capensis* (Smith, 1849)
Specimens were observed in the natural environment around one of the waterholes and on the walls of an old shed (28.65867S; 24.19150E).

Pachydactylus capensis* (Smith, 1845)**
Found under rocks on the surrounding koppies and under the bark of dead *Acacia* trees.

Ptenopus garrulus garrulus* (Smith 1849)
Adult males were heard calling on a sandy grassland area of the reserve near trap 3. Males started calling at dusk.

Family: GERRHOSAURIDAE

Gerrhosaurus flavigularis* Wiegmann, 1828
During the October survey no *G. flavigularis* were seen, but numerous sub-adult specimens were observed during the February survey. They were running around in the leaf litter under large bushes to the west of the reserve (28.59664S; 24.21083E). Only one unconfirmed record for *G. flavigularis* exists for the Northern Cape (Visser, 1984), thus this is the first confirmed record for the Northern Cape Province.

Family: LACERTIDAE

Ichnotropis squamulosa* Peters, 1854**
Similar circumstances and habitat to *G. flavigularis*. No specimens were observed in October, but were abundant in February.

Nucras holubi* (Steindachner, 1882)**
Specimens were captured on the western side of the reserve on more compacted soil and thicker vegetation. Voucher specimens were collected: PEM R18239, 18240, 18285, 18290, 18293, 18296 & 18299. 5 males, 1 female & 1 juvenile.

Nucras intertexta* (Smith, 1839)*
During October only two specimens were captured in traps 2 and 3. During February six adult specimens were noosed in the open. Voucher specimens were collected: PEM R18257: 1 adult female, 28.57303S; 24.20439E (trap 2). PEM R18258: 1 adult female, 28.59664S; 24.21083E (trap 3)

Pedioplanis lineoocellata* (Duméril and Bibron, 1839)**
These lacertids were more abundant on the sandy areas of the reserve. Voucher specimens were collected: PEM R18236, 18252, 18265, 18286, 18287, 18288, 18289, 18297, 18298 & 18304: 4 adult males & 6 adult female.

Pedioplanis namaquensis* (Duméril and Bibron, 1839)**
These lacertids were more abundant on harder surfaces associated with calcrete. Voucher specimens were collected: PEM R18245, 18246, 18251, 18273, 18291, 18292, 18295, 18300, 18657, 18663 & 18664: 7 adult males & 4 adult females.

Family: SCINCIDAE

Panaspis walbergii* (Smith, 1849)**
Specimens were captured around rocks covered with a few layers of leaf litter on the south-western side of the reserve (28.65867S; 24.19150E and 28.68111S; 24.17233E). One individual was captured in the funnel of trap 2.

Trachylepis punctulata* (Bocage, 1872)*
These skinks were found in the same habitat as *T. sulcata*.

Trachylepis spilogaster* (Peters, 1882)**
These skinks were observed on the *Acacia* trees in the sandier areas of the reserve, near trap 3. One adult was captured in the swimming pool.

Trachylepis sulcata* (Peters, 1867)
One of the more abundant skink species, restricted to the rockier area.

Trachylepis varia* (Peters, 1867)
Found on the sandier area around low growing shrubs.

Family: VARANIDAE

Varanus albigularis* Daudin, 1802**
Two individuals were found. One (female) was observed in her rock hide-out on the western side of the reserve on a rocky outcrop. The second individual (male) was seen curled up in a big bush, cold after the previous night's rain near trap 1.

Varanus niloticus* (Linnaeus, 1762)
Two adult individuals were observed diving into the Vaal River, western side of the reserve.

Family: AMPHISBAENIDAE

***Monopeltis capensis* Smith, 1848**
One specimen was captured late one afternoon, a day after heavy rain, under a big rock boulder on the side of the road east of trap 1 (28.62147S; 24.34228E). (Fig. 1).

Zygaspis quadrifrons* (Peters, 1862)*
Specimens were found in the late afternoon, a day after the heavy rain under big rock boulders on the side of the track (28.64036S; 24.34656E). Habitat includes Kalahari grassland.

Family: LAMPROPHIIDAE

Prosymna sundevallii* (Smith, 1849)
One specimen was found under a rock near to an old rock kraal to the west of the reserve (28.68111 S; 24.17233 E).

Psammophis trinasalis* Werner, 1902
Two specimens were encountered. One was captured in the funnel of trap 2. The other specimen dropped from overhanging branches upon disturbance (28.59664S; 24.21083E). It is surmised that it might have used this position for basking.

Family: ELAPIDAE

***Naja nivea* (Linnaeus, 1758)**
One adult specimen was seen crossing the road early in the morning and a juvenile was captured in trap 2.

Family: TYPHLOPIDAE

Rhinotyphlops lalandei* (Schlegel, 1844)**
Specimens were found in the same conditions and habitat as *Monopeltis capensis*.

DISCUSSION

Our survey produced more than 200 individual records of reptiles and amphibians, covering 37 species (7 frogs, 4 snakes, 23 lizards, and 3 chelonians), which represents approximately 80% of all lizards, 75% of chelonians, 20% of snakes, and 50% of frogs that would be expected to be present in the area (*sensu* Branch 1998, SARCA, Du Preez and Carruthers 2009, Minter *et al*., 2004). This high herpetofaunal diversity may be due to the diverse habitat types occurring in the area. The survey was not exhaustive, and it is expected that a full species list will only be obtained by repeated visits during different seasons. This is evident in the capture of *G. flavigularis* and *I. squamulosa* in February but not in October.

Many of the records represent new atlas distribution records for the two quarter-degree grids cells (65% for 2824CA and 59% for 2824CB). Five reptile (*P. sundevallii*, *I. squamulosa*, *G. flavigularis, T. varia* and *Z. quadrifrons*) and two amphibian (*A. poweri* and *V. gariepensis*) species were recorded for the first time in the whole one degree grid cell (28°S; 24°E) (Minter *et al.,* 2004; SARCA). The other observation worth mentioning is the presence of five lacertid species (*I. squamulosa*, *N. intertexta*, *N. holubi*, *P. lineoocellata* and *P. namaquensis*) sharing the same habitat.

These rapid surveys yielded a large number of species observations, and demonstrate the utility of short but intensive surveys of biologically diverse regions. In summary, the Rooipoort Nature Reserve has made an important contribution to both conserving and understanding South Africa's biodiversity. The existence of such private reserves are an important part of preserving southern Africa's rich biological heritage, and for contributing to basic research which will assist us to better conserve our biodiversity.

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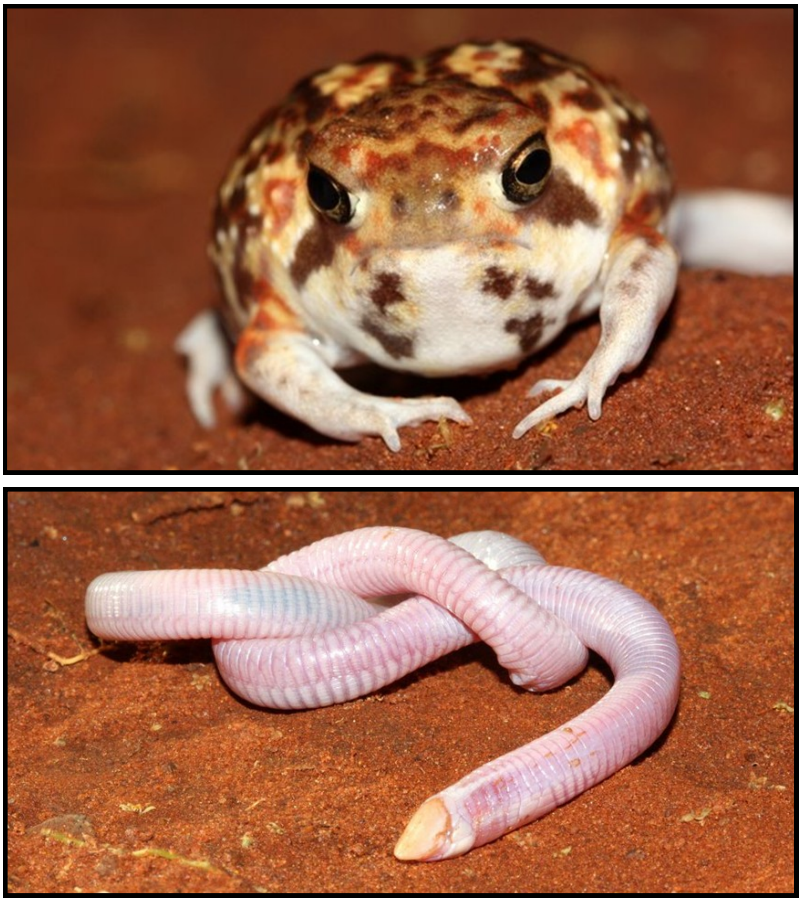

Fig. 1: *Breviceps adspersus* (top) and *Monopeltis capensis* (below) from Rooipoort Nature Reserve, Northern Cape Province, South Africa. (Photographs by W. Conradie)

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NATURAL HISTORY NOTES

AMPHIBIA: ANURA

ARTHROLEPTIDAE

***Leptopelis bocagii* (Günther, 1864)**
Bocage's Tree Frog

MAXIMUM SIZE

During November 2010, a series of *Leptopelis bocagii* were collected from the Kalumbila-Ntambu region, Solwezi District, North-Western Province, Zambia (Kalumbila Camp 12˚ 14' 15" S 25˚ 20' 31" E to Enterprise Camp 12˚ 15' 25" S 25˚ 19' 18" E) by R. Bills and A. Bok. The area is dominated by miombo woodland intersected by grassland dambos (shallow wetlands or depressions filled with water) around river catchments. On the day after the first light rain following a week of no rain, male and female *L. bocagii* were observed on the ground. At this time, none were calling. Over the following four days several males were heard calling from elevated positions in riverine grass. We collected 15 specimens both within the Kalumbila forest (miombo woodland) and in tall grass in the riverine dambo of the Musangezhi River. Eight females were collected on the ground, while 8 males were collected from elevated calling sites on tall grass (1 – 1.5 m above the ground) in the riparian zones. All specimens have been accessioned into the South African Instituted for Aquatic Biodiversity amphibian collection (SAIAB 98180 (9 specimens) and 98223 (6 specimens)). Identifications were based on the characters presented by Poynton & Broadley (1987), which includes an inter-orbital distance/nostril-tympanum distance ratio of 36% or less. The inter-orbital distance/nostril-tympanum distance ratio for our series varied from 16.7 – 36.4 %. Numerous authors acknowledge the complexity of the *Leptopelis bocagii*-group and that it seems likely that some cryptic species are included within this taxon as it is currently recognised (e.g. Poynton & Broadley, 1987; Schiøtz, 1999).

Average snout-urostyle length (SUL) for the series was 68.8 mm for females (n = 9) and 52.4 mm for males (n = 6). The largest female measured 74.9 mm, while the largest male measured 57.2 mm. Previous recorded maximum sizes are reported to reach 58 mm for females and 50 mm for males (Channing, 2001; Poynton & Broadley, 1987; Schiøtz, 1999), although Channing & Howel (2006) report males reaching 52 mm and Smith & Inger (1959) mentioned specimens from Upemba National Park, Democratic Republic of Congo, reaching 63.2 mm (females) and 48.4 mm (males). All of these considered, our collection represents an 18.5% (females) and 10.0% (males) increase in maximum size for *Leptopelis bocagii*.

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Adult female *Leptopelis bocagii* from North-western Province, Zambia. Photograph by Roger Bills.

PIPDAE

***Xenopus borealis* Parker, 1936**
Marsabit Clawed Frog

TERRESTRIAL ACTIVITY

Marsabit clawed frogs (*Xenopus borealis*) are found throughout sub-Saharan Africa, and although they are generally located near human-altered habitats, limited information is known about their biology (Tinsley et al. 2004, Bwong and Measey 2010). Frogs in the genus *Xenopus* have been documented to migrate across land between bodies of water. Yager (1996) reported *X. borealis* moving more than 1.0 km between ponds in Kenya, Measey and Tinsley (1998) reported *X. laevis* moving up to 1.5 km in South Wales, and Lobos and Jaksic (2005) reported large movements of *X. laevis* in the Metropolitan Region of Chile.

During a one-day visit to Ngorongoro Crater, Tanzania on 3 October 2010, we were travelling through the southern edge of the Lerai Forest. The afternoon was warm and partly cloudy, and the rainy season had not yet begun. We momentarily stopped near a slow-moving stream that crossed under the road. A small culvert was directly under the road where we stopped, allowing for movement of water in this small tributary that feeds into Gorigor Swamp. On the downstream (eastern) side of the road there were several hundreds, perhaps more, Marsabit clawed frogs concentrated around the downstream mouth of the culvert. Their behavior and numbers were conspicuous as these frogs traveled in a clock-wise pattern out of and back into the water: from the small pool at the base of the culvert, upward on the dirt bank in a southward direction, continuing to the top of the culvert at the edge of the road, and finally jumping back into the mass of frogs below in the small pool. This pattern of behavior continued throughout the observation and gave the appearance of a churning geyser of frogs. At any time during the observation period, approximately 20 - 30 frogs were traveling along the same route as indicated above. The remaining frogs were concentrated at the base of the culvert, either in the water or on nearby rocks.

The stream extending from the culvert was approximately 600 mm wide. Marsabit clawed frogs were distributed downstream in the water and along grassy banks for at least 6.0 m, decreasing in density as distance increased from the culvert.

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REPTILIA: SQUAMATA

COLUBRIDAE

Dasypeltis Wagler, 1830

Inter-species copulation

On 4 October 2007 the author observed copulation between a male *Dasypeltis inornata* and a female *Dasypeltis scabra*. The copulation occurred in a terrarium housing a pair of *D. inornata* and a pair of *D. scabra.* During copulation the male and female remained motionless with their tails entwined (Fig. 1) and the male's head resting on the female's back. Not thinking that anything would come of the mating, the author sold (CN permit number AAA007-00640-0012) the egg-eaters and subsequently learned that the female (*D. scabra*) was gravid, but died on 18 January 2008 after being egg-bound. The author did not observe the female *D. scabra* copulating with the male *D. scabra* prior to copulation with the male *D. inornata*. It is possible that sperm retention was the source of her gravidness. Branch (1998) and Marais (2004) show that the ranges of these two species overlap suggesting that the possibility of hybridization may exist.

Fig.1: Copulation between *Dasypeltis scabra* (female) and *D. inornata* (male)

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ELAPIDAE

***Naja nivea* (Linnaeus, 1758)**
Cape Cobra

JUVENILE COLOURATION

Dual dark throat bands (double banding) in a juvenile Cape Cobra (*Naja nivea*) was reported by Witberg (2007) for a specimen from Tamboerskloof (33°55'43"S,18° 24'32"E; 3318CD), Cape Town, Western Cape Province, South Africa. In Broadley (1990) also states that the juvenile Cape Cobras (*Naja nivea*) have a rich chestnut to amber brown patch or band (sometimes divided into two sections) on the throat.

At approximately 17h00 on 1 April 2010 a juvenile Cape Cobra (*N. nivea* - Record MW R10 0030; Fig. 1-left) with dual dark throat bands was found dead in a crack on a wall in Skool Street, Velddrift, Western Cape (32°47'01"S, 18°10'21"E; 3218CC). A Raucous Toad (*Amietophrynus rangeri*) was found in its gut. Both the *N. nivea* and *A. rangeri* were deposited at the Iziko South African Museum, Cape Town (SAM ZR 52357). A tissue sample was taken from the specimen and submitted to the South African National Biodiversity Institute (SANBI) for use in molecular studies (sample number MW D10008).

A second juvenile *N. nivea* (MW R10 0029) with dual dark bands was found at about 14h30 on 1 June 2010 on the farm Bakoorjakkals, Joostenbergvlakte, Cape Town (33° 48'47"S, 18°44'43"E; 3318DC). This specimen was deposited at the Iziko South African Museum, (SAM ZR 52356) and a tissue sample submitted to SANBI (MW D10 009).

It was also noted that some captive bred individuals lacked black pigmentation in the centre of the band (Fig. 1 - right). Only a portion of the black band remained on the sides and at the bottom of the hood. In addition to this, I can confirm Phelps's (Witberg 2007) observation that in some captive bred individuals the black bands may extend the whole

length of the hood. Branch (1998), and Marais (2004) both mention that juvenile *N. nivea* have a single prominent black throat band.

Fig. 1: Variation in throat patterning in juvenile Cape Cobras (*Naja nivea*) from the Western Cape Province, South Africa. Photographs by Marcel Witberg,

The records mentioned above of juvenile *N. nivea* from different locations having two prominent dark bands on the throat suggest that this phenomenon is more widespread than previously thought.

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SCINCIDAE

***Trachylepis acutilabris* (Peters, 1862)**
Wedge-snouted Skink

DIET

The diet of the Wedge-snouted Skink (*Trachylepis acutilabris*) is described by Branch (1998) and Alexander & Marais (2008) as including beetles, ant-lions, wasps, flies and grasshoppers caught in sandy habitats. The wedge-snout probably facilitates foraging in loose substrate (Alexander & Marais 2008).

On 26 January 2011, at 10h45 an adult *T. acutilabris* (approximately 60 mm SVL) was observed in the process of consuming a 10 to 20 mm solifuge (Order: Solifugae) on sandy substrate covered with leaf litter under *Acacia reficiens* shrubs, west of Karibib (21°59'14.4" S & 15°43'04.4"E) in western central Namibia. The skink grappled with the solifuge for at least 3 minutes, repeatedly dropping its prey, resuming the attack from another angle, whilst vigorously shaking and bashing the solifuge against the ground in an attempt to immobilize it. By the time I encountered this scenario the solifuge was not showing much resistance anymore and eventually succumbed to the attack, being consumed head first.

Although skinks are known to be generalist feeders, this sighting confirms solifuge as forming part of the diet of *T. acutilabris* in Namibia.

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Johan Marais is thanked for confirming the identification of the skink based on the photograph provided.

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CHAMAELEONIDAE

***Rhampholeon temporalis* Matschie, 1892**
East Usambara Pygmy Chameleon

INCUBATION TIME

The East Usambara Pygmy Chameleon is one of the 17 currently recognized chameleons of the genus *Rhampholeon* (Tilbury 2010). There are few reports available regarding the incubation time of African leaf chameleons. Nečas & Schmidt (2004) report incubation times of between 150 and172 days at 20 - 23 ^{o}C daytime temperatures. Additionally, grey literature (internet sources) exists in which incubation times of between 135 and 150 days are noted without specifying thermal conditions.

I obtained an adult pair of East Usambara Pygmy Chameleon from a commercial pet dealer in Czech Republic on 6th November 2010. Both individuals were obviously in very good condition. Shortly after they were placed into their terrarium, they both fed regularly. On 8th November at approximately 14:00 the female was observed digging a hole in the substrate. The following morning two eggs were found in the excavation and immediately transferred to a plastic box containing Vermiculite. Here they were incubated at temperatures between 20.6 °C and 23.9 °C, and humidity that ranged between 94% and 100%. These conditions produced two young ones emerging from the eggs on 8th March 2011 (118 days after egg-lying). Thus, compared to the published reports mentioned above, this is the shortest incubation time for the East Usambara Pygmy Chameleon. More precisely, it is 13% shorter than the lower limit provided by sources on the internet. The size of both neonates was 26 mm.

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AGAMIDAE

Agama agama agama (Linnaeus, 1758)
Rainbow Lizard

DIET

Agama agama is widely distributed throughout sub-Saharan Africa (Harris, 1964) and often associated with human settlements. They are territorial lizards with males defending their harems against other males during the day. At night, however, this species roosts communally (Cansdale, 1955). *Agama agama* exhibit sexual dimorphism with dominant males showing bolder colours of orange to red on the head, black and blue on the dorsum and orange mid-way down the tail. Females, juveniles and subordinate males are less brightly coloured, typically olive-brown with pale green markings on the head and occasional orange or yellow blotches on the lateral-posterior half of the body. Total length ranges between 250 mm and 380 mm (Chirio & LeBreton, 2007).

This species is a sit-and-wait forager with a predominantly insectivorous diet comprised primarily of Formicidae (Hymenoptera), and secondarily of Isoptera, Coleoptera, Lepidoptera and Araneae (Anibaldi et al., 1998; Chapman and Chapman, 1964). The relative abundances of these prey in the diet change with season, and the diet is supplemented with vegetation during the dry season (Baker, 1974; Chapman & Chapman, 1964; Harris, 1957; Marshall & Hook, 1960). Chapman & Chapman (1964) documented three instances in which a lizard was found in the stomach contents of an *A. agama*, however, none of these prey species could be identified. J. L. Cloudsley-Thompson (1981) observed large adult males cannibalizing young, but did not documented consumption of other lizard species.

At approximately 13:00 on the afternoon of 31 July 2010, near Limbe (Southwest Province, Cameroon, N 04° 01.015' E 009° 11.359'), NLS photographed a female *Agama a.agama*, approximately 120 mm total length (tail broken), attempting to consume an adult *Hemidactylus mabouia* (Fig. 1). Consumption began at the posterior end with the tail and subsequently proceeded toward the hind leg. This female was located on an elevated concrete platform behind a house. Smaller adult females were present but no adult males were in the immediate vicinity. When approached, she moved with the prey item to a rocky outcrop below the platform and continued eating. To our knowledge, this is the first documented sighting of *A. agama* consuming lizard prey of a known species.

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Wulf Haacke and Don Broadley at the 10th HAA conference in Cape Town.
Photograph by Johan Marais

GEOGRAPHICAL DISTRIBUTIONS

AMPHIBIA: ANURA

RHACOPHORIDAE

***Chiromantis xerampelina* Peters, 1854**
Foam Nest Frog

South Africa, Gauteng, Pretoria, Wonderboom Airport, 25°39'S, 28°12'E, (2528CA), altitude 4100ft m a.s.l. (1475m).

On 21 April 2007 an Alouette II helicopter, registration number ZU-RAL landed at Wonderboom Airport (25°39'77'S; 28°12' 66"E) about 10 km north of Central Pretoria. The helicopter was routinely inspected by the War Bird Aircraft Services CC on 23 April 2007. During the inspection a Foam Nest Frog, *Chiromantis xerampelina* was found on the fuel tank. The helicopter had been based at Rustenburg Airport (25°39'S, 27°17'E (2527CB)). *Chiromantis xerampelina* has only one pre-1996 location record in Gauteng (.) and is not likely to occur in Gauteng. It is interesting to note that this helicopter flies normally at about 800ft (288m) above ground level with a speed of 60 knots. It seems that these conditions experienced during the flight had no detrimental impact on the individual. This record also highlights a novel manner in which herpetofauna can be translocated.

After the examination of the frog, it was deposited in the Ditsong National Museum of Natural History (Transvaal Museum) with TM 85689 as its catalogue number.

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REPTILIA: SQUAMATA

GERRHOSAURIDAE

***Tetradactylus tetradactylus* (Daudin, 1802)**
Common Long-tailed Seps

South Africa, Northern Cape Province, Calvinia district, about 5 km west of Nieuwoudtville (31°22'15"S, 19°04'03"E; 3119AC; 806 m a.s.l.). On 3 July 2006 two specimens of *Tetradactylus tetradactylus* were collected at this locality - in the vicinity

of the Bokkeveld Mountains - by Neil Heideman and Savel Daniels. They were deposited in the collection of the National Museum, Bloemfontein (NMB). Both specimens (NMB R9407, 9408) are easily identifiable by their elongate snake-like bodies and small tetradactyle fore- and hindlimbs. NMB R9407 had a snout–vent length of 63 mm, tail broken; NMB R9408 measured 66 mm SVL, 189 mm tail length (i.e. 2.86 times longer than SVL; tail shows no signs of regeneration). Other morphological features: Nostril bordered by two nasals and first supralabial; frontal 2.04 (NMB R9407) and 2.08 (NMB R9408) times longer than wide (maximum width), measured with digital calipers; 3rd finger distinctly longer than 2nd (3rd finger on left side damaged in NMB R9407); hindlimbs extend along 11 transverse rows of dorsals (body and tail), and extend to the 6th (NMB R9407) and 7th (NMB R9408) transverse row of supracaudals and the 7th (NMB R9407) and 8th (NMB R9408) transverse row of subcaudals posterior to the vent; five femoral pores on each thigh. This species occurs in the Cape Fold Mountains and the montane grasslands of the inland escarpment (Branch, 1990; provisional SARCA map: http://vmus.adu.org.za/vm_sp_summary.php), extending as far north as Zastron district in the south-eastern Free State (Bates, 1996). In the south-western part of its range it is currently known to occur as far north as the Cederberg Mountains (Branch, 1990; SARCA map). The new locality is situated about 90 km north of the Cederberg and is the most north-westerly extension of the species' range. It is also only the second (first fully documented) locality for this species in the Northern Cape; the only other recorded quarter-degree in this province is in Sutherland district (SARCA map).

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GEKKONIDAE

Pachydactylus mariquensis Wermuth, 1965
Marico Thick-toed Gecko

A single specimen of Marico Thick-Toed Gecko (*Pachydactylus mariquensis*) was collected (33°45'56''S, 18°50'08''E; 3318DD) on 12 October 2007 at the JN Briers Louw Nature Reserve situated on the farm Eenzaamheid just off the Klapmuts/ Wellington turn off (R44) close to Windmeul in Paarl, Boland district, Western Cape. It

was collected in a funnel trap during a reptile survey conducted for CapeNature. The plant growth on the reserve is predominantly renosterveld or sand fynbos. After being photographed the gecko was released at the point of capture. On geography the specimen cannot be assigned to the northern subspecies *P. m. latirostris*. The specimen was sympatric with *Pachydactylus geitje*: two specimens of *P. geitje* was collected on 11 October 2007 at 33°45'52''S, 18°49'56''E, and a single specimen of *P. geitje* on the same date was collected at 33°45'56''S, 18°50'08''E. This is the first record for the JN Briers Louw Nature Reserve and is among the southernmost records for *P. mariquensis*. Other southern records further east include: 13.6 km along road to Vlakte (Rietbokfontein), North of Kannaland, private Nature Reserve (3329DC; PEM R7074); Redhouse, Port Elizabeth (3325DC, PEM R13159). For future surveys envisaged for the JN Briers Louw Nature Reserve, specimens of *Pachydactylus* should be photographed and deposited in a South African Museum.

The specimen photographic record was submitted to the South African Reptile Conservation Assessment (SARCA) – SARCA record 3905.

ACKNOWLEDGEMENTS

I thank Cape Nature and the Honoree Nature Conservation officers in the Western Cape. Thanks to Andrew Turner (CapeNature) and Marius Burger for confirmation of the specific identity of the gecko. Thanks to Kobus Smit for assistance with the survey at the Briers Louw Nature Reserve, to Alana Hendricks (SANBI) and Mike Bates (National Museum, Bloemfontein) for scrutinising the format and content of this note.

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ABOUT THE COVER

The image on the cover of this issue of *African Herp News* is the winning image in the photographic competition held at the 10th Conference of the Herpetological Association of Africa, in Cape Town, in January this year.

The photograph of a Namaqua chameleon (*Chamaeleo namaquensis*) was taken in the Namaqua National Park, Northern Cape, South Africa. During a butterfly survey in October 2009, the chameleon was found at the base of a sand dune where it was walking on the flaky ground between bushes. There are quite a number of morphological as well as behavioural characteristics that set this chameleon apart from the common flap-neck chameleon (*Chamaeleo dilepis*) that can be found over most of South Africa. This specimen was quite big, and this made photographing it with a 10mm lens quite a bit easier. The chameleon's ability to run made photographing it a lot more difficult. The Afrikaans name "trapsuutjie" is definitely not applicable to this chameleon, as it kept on running away whenever we approached it.

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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**. All submissions should be set in 10 pt, Times New Roman font, with 1.15 line spacing throughout. Submitted manuscripts should not contain any consecutive space characters, nor should they contain tab characters. Every word in English common names should start with a capital letter (e.g., Namaqua Dwarf Adder).

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** (capitals, bold, centred); **AUTHOR(S)** (bold, centred); *Author's address(es)* (italicised; use superscript Arabic numerals with authors' names and addresses if more than one author); **HEADINGS** (bold, aligned left) and **Subheadings** (bold, aligned left) as required; **REFERENCES** (bold), following the standardised formats 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 a defined geographic unit of especial relevance to the herpetological community. For example, surveys could 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 for Articles (described above), and must additionally include a section titled **SYSTEMATIC ACCOUNT** (bold) comprising *Scientific name* (including author citation), location and habitat, evidence (including registration numbers and location of vouchers), and comments (where required). **REFERENCES** should follow the standardised formats described below.

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**; ***Scientific name*** **(including author citation)**; **English common name** (using Bill Branch's *Field Guide to Snakes and Other Reptiles of Southern Africa*, third edition, 1998, for reptiles; and Du Preez & Carruthers' *A complete guide to the frogs of southern Africa*, 2009, for amphibians as far as possible); **KEYWORD** (this should be one or two words best describing the topic of the note, e.g. Reproduction, Avian predation, etc.); the Text (in concise English with only essential references quoted). 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. **REFERENCES** should follow the standardised formats described below. **SUBMITTED BY: NAME**, Address, E-mail.

GEOGRAPHICAL DISTRIBUTION

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**; ***Scientific name* (including author citation)**; **English common name** (using Bill Branch's *Field Guide to Snakes and Other Reptiles of Southern Africa*, third edition, 1998, for reptiles; and Du Preez & Carruthers' *A complete guide to the frogs of southern Africa*, 2009, for amphibians as far as possible). 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. **REFERENCES** should follow the standardised formats described below. **SUBMITTED BY: NAME**, Address, E-mail.

REFERENCES

Reference formatting is similar to *African Journal of Herpetology*. References should be listed in alphabetical order and should refer only to publications cited in the text. References should be in the following format:

ALEXANDER, G.J. 2007. Thermal biology of the Southern African Python (*Python natalensis*): does temperature limit its distribution? Pp. 50-75. In HENDERSON, R.W., AND POWELL, R. (eds.), *Biology of the Boas and Pythons*. Eagle Mountain Publishing, Utah.

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FROST, D.R. 2010. Amphibian Species of the World: an Online Reference. Version 5.4 (8 April, 2010). http://research.amnh.org/vz/herpetology/amphibia/ (accessed 27 April 2010).

LAMB, T., BISWAS, S. & BAUER, A. 2010. A phylogenetic reassessment of African fossorial skinks in the subfamily Acontinae (Squamata: Scincidae): evidence for parallelism and polyphyly. Zootaxa 2657: 33 – 46.

Note that author names are set as SMALL CAPS, not ALL CAPS, and that Journal Titles are not abbreviated. Formatting should be achieved using paragraph settings and NOT tabs or spaces. Citations should occur in chronological order: (Branch 1998, Alexander 2007, Cottone 2007, Frost 2010, Lamb et al. 2010). For papers with more than two authors, only the first author should be named in the text (e.g., Masterson et al. 2010) without italicising "et al.". Cite unpublished data as in press, e.g., Marais (in press), which then appears in the list of references, or as J. J. Marais (pers. comm.), in which case Johan J. Marais's name and institutional affiliation should appear under Acknowledgements. Unpublished reports should be cited as personal communications.

TABLES, FIGURES, AND PHOTOGRAPHS

Tables should be submitted as separate MS Excel files. Tables should be small enough to fit onto an A5 page, and should NOT contain any vertical lines. Photographs and figures should be submitted as separate JPEG files, and not embedded in the text. They should preferably be 500—800 KB in size, and not more than 1.5 MB. The name of the photographer should be given, if not taken by the author of the submission. Each table, figure, or photograph, needs to be associated with an appropriate caption that should follow the reference list in the submission.

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