

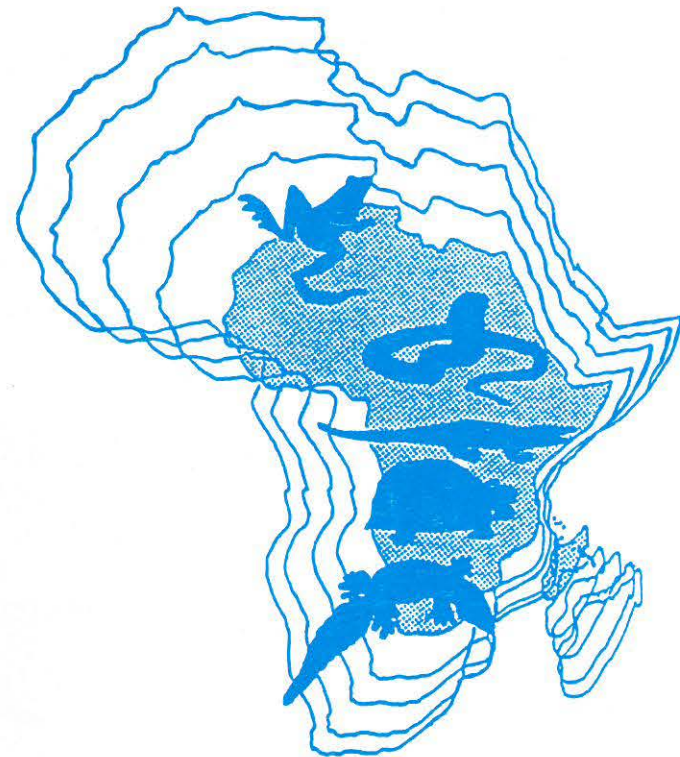
AFRICAN HERP NEWS

NO. 26: JULY 1997

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AFRICAN HERP NEWS

HERPETOLOGICAL ASSOCIATION OF AFRICA
NEWSLETTER

JULY 1997

NO. 26

HERPETOLOGICAL ASSOCIATION OF AFRICA

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, short communications and book reviews - subject to peer review) and newsletter, *African Herp News* (which includes short communications, life history notes, geographical distribution notes, venom and snakebite notes, short book reviews, bibliographies, husbandry hints, announcements and news items).

Editor's note:

Articles will be considered for publication provided they are original and have not been published elsewhere.

Articles may be submitted for peer review (at least two reviewers) at the Editor's discretion. Lists of reviewers will be published in the newsletter from time to time.

Authors are requested to submit long manuscripts on disk in ASCII format.

The views and opinions expressed in articles are not necessarily those of the Editor.

Articles and news items appearing in *African Herp News* may be reprinted, provided the author's name and newsletter reference are given.

Typist:

Ms A. Lombaard, National Museum, Bloemfontein.

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Dr R. Laurent, Prof. J.C. Poynton, Dr C. Gans, Dr D.G. Broadley.

EDITORIAL

It is with some sadness that I write this, my last editorial. Having served three consecutive terms as Chairman/Newsletter Editor over a period of seven years, the H.A.A. has become very much a part of my life. I am thankful for the many opportunities I have had to correspond with and meet members, and have thoroughly enjoyed my work as editor of *African Herp News*.

From the start of my first term I initiated various changes to the style and format of the newsletter. Firstly, the Committee agreed to change the title of the newsletter. *African Herp News* #13 (August 1990) was the first newsletter to appear with a hard paper cover. In general, few changes were made until *African Herp News* #17 (June 1992), which featured a *Bibliographic Index to the Journal* by Rod Douglas, and was the first to be formatted with lines at the top and bottom of each page. In 1993, after a policy change to the Journal, it was decided that the Life History Notes, Geographical Distribution, and Venoms and Snakebite sections would be transferred to the newsletter. This resulted in a flood of extra newsletter contributions, the first of which appeared in *African Herp News* #21 (July 1994). Later, at the General Meeting during the St Lucia symposium (October 1995), it was decided that the Newsletter Editor should send articles requiring review to at least two referees for their opinions. This practice was initiated from *African Herp News* #24 (December 1995). Recently, in *African Herp News* #25 (October 1996), a double-column format was introduced, section headings and titles of articles were set in blocks, and glossy paper used. All of the above changes were made in an attempt to produce a neater and more attractive newsletter.

Producing the newsletter was always a pleasant challenge. I was never short of newsletter material (for which I thank you the member) and I could always be certain of posting an *African Herp News* which had at least something of interest for everyone. Editing and proof-reading a newsletter takes up a fair amount of time, but seeing the

finished product is always a rewarding experience. However, while I have thoroughly enjoyed the job, I must echo what Bill Branch said in 1993 when resigning as editor of the Journal after 11 years: "It will be a pleasure to open an envelope with a NEW journal (= newsletter) in it, and read something that I haven't spent the last six months bringing to fruition".

In the past several members were concerned about the relatively infrequent appearance of H.A.A. publications. I stated in my first Editorial (*African Herp News* #13) that it was my prime objective to ensure that the Association's Newsletter and Journal appeared more frequently. This situation has improved considerably and members now regularly receive two newsletters and two journals per year. During my seven years in office 14 issues of *African Herp News* (#13 to #26; 810 pages in all, average of 58 pages per newsletter) and 11 Journals (#38, edited by Johan Marais and myself; #39 to #42, edited by Bill Branch; and #43, #44 [parts 1 & 2], #45 [1 & 2] and #46 [1], edited by le Fras Mouton) were produced.

Accreditation status for the journal is another matter which has been questioned on several occasions this decade. Following various improvements to the journal it is now likely that an application for accreditation status will be made at the end of 1997.

As this is my last newsletter, I take this opportunity to thank all those who have served on committees with me or assisted in any other way. Your co-operation and suggestions were invaluable. A special word of thanks to: my colleague Rod Douglas who has on many occasions offered valuable advice and support; Frank Farquharson, who on occasion has given me a damn hard time, has been an excellent and diligent Secretary/Treasurer largely responsible for the Association's very healthy financial situation; Le Fras Mouton for his competence and co-operation while Journal Editor; Bill Branch for his advice and regular newsletter contributions (e.g. book reviews); Gerald Haagner who's endless supply of Life History Notes almost led me to create a special

Haagner section in the newsletter; and Hanelien de Villiers and Amanda Lombaard for typing and formatting newsletter material.

By now members should have received *African Journal of Herpetology* 46(1). The second part of volume 46, a special issue dedicated to a famous African herpetologist, will also be edited by le Fras Mouton and appear later this year. The long-awaited *Proceedings of the Third H.A.A. Symposium* (Pretoria, 1993), edited by Prof. Hannes van Wyk, is now at the printers and should be posted to members within a month or two. The *Proceedings* will be published as an A5 size book (about 230 pages). It will be the heaviest and most expensive publication in the history of the Association. The book is divided into two main sections, one dealing with the *Proceedings of the FitzSimons Commemorative Symposium* (presented on the first day), and the other dealing with all other presentations. We are having extra copies of this book printed as its historical importance in "bridging the gap" between FitzSimons' *Lizards of South Africa* (1943) and the planned multi-authored *Lizards and Amphisbaenians of Southern Africa* is likely to result in a rush for orders.

The H.A.A. has presented three symposia this decade - in Bloemfontein (1991), Pretoria (1993) and St Lucia (1995). Members can now look forward to the upcoming Stellenbosch symposium, to be held early in 1998.

Members will be interested to know that all publications received by the H.A.A., including journals (see list in *African Herp*

News #25) and books, are now to be catalogued and incorporated into the library of the National Museum in Bloemfontein. They will, however, remain the property of the H.A.A., and members are welcome to request copies of particular articles at nominal cost.

I would also like to remind members about the *Southern African Frog Atlas Project* (SAFAP). Although it is not the best time of the year for frogging, some work can be done, and your involvement is sorely needed (see page 76).

Also, I would like to encourage keepers of African reptiles and amphibians to make notes on any observations they feel may be of interest and submit these to the Newsletter Editor. The interests of husbandists should be better represented in *African Herp News*. And what has happened to the Venoms and Snakebite section - have African snakes stopped biting people?

The following persons are thanked for reviewing contributions published in this issue of *African Herp News*: Bill Branch (X3), Wulf Haacke (X2), Graham Alexander, Aaron Bauer, Donald Broadley, Atherton de Villiers and Neils Jacobsen.

Finally, I wish to thank all contributors to this issue of *African Herp News*. Also, to all those who have submitted articles, notices, newspaper clippings etc. over the past seven years, I thank you - you have made my job a lot easier!

All the best.

Mike Bates
Chairman/Newsletter Editor

ELECTION OF A NEW H.A.A. COMMITTEE

Nominations for the new H.A.A. Committee closed on 23 July 1997. Twenty-one persons were nominated for a total of 32 positions (some were nominated for more than one position). Dr Angelo Lambiris was unopposed as Chairman/Newsletter Editor, Mr Martin Whiting was unopposed as Journal Editor and Mr Frank Farquharson was unopposed as Secretary/Treasurer. A total of 12 persons were nominated as Additional Committee Members. I therefore call on all African Members to complete and return

the ballots included with this newsletter.

To the unopposed nominees, my congratulations and here's hoping that all goes well! The new Committee will officially come into being later this year after ballot forms have been returned and votes counted. The new Committee will be named in the new Newsletter Editor's first issue of *African Herp News*. On behalf of the present Committee I wish to thank Mr Rod Douglas, the Electoral Officer, for his time and trouble.

AFRICA - THE NEGLECTED CONTINENT BIOLOGY AND BIODIVERSITY OF THE AFRICAN HERPETOFAUNA

A one-day symposium to be held during the 3rd World Herpetological Congress

Convenor: Bill Branch

7 August 1997, Club 1, Prague

FINAL TIMETABLE

- | | |
|-------------|---|
| 09h00 | Introduction - Announcement of the revival of the IUCN SSC African Reptile and Amphibians Group. |
| 09h20 | Africa: Where From - Where To (Bill Branch, South Africa) |
| 09h40 | Analysis of the Herpetofauna of the Saharan region (Ulle Joger, Germany) |
| 10h00 | Analysis of the Herpetofauna of West Africa (Wolfgang Böhme, Germany) |
| 10h20-10h40 | Coffee/Tea |
| 10h40 | How many Africa's are there: Emerging patterns in Amphibian distributions (John C Poynton, London) |
| 11h00 | The Amphibia of an isolated African archipelago: The Eastern Arc Forests (Arne Schiøtz, Copenhagen) |
| 11h20 | Amphibians and Reptiles of the Ivory Coast (Mark Rödel, Germany) |
| 11h40 | Amphibians of Central and Southern Africa (Alan Channing, South Africa) |
| 12h00-14h00 | Lunch |
| 14h00 | Preliminary assessments of patterns in the biodiversity of Afrotropical snakes (and amphibians) (Jens Rasmussen and Neil Burgess, Copenhagen) |
| 14h20 | Systematics, biogeography and conservation of the African Gekkonoidea (Aaron Bauer, USA) |
| 14h40 | African chameleons - an overview of systematics, biology and conservation (Colin Tilbury, South Africa) |
| 15h00 | Africa's cordylid lizards hold many answers (P. le Fras N. Mouton, South Africa) |
| 15h20-15h40 | Coffee/Tea |
| 15h40 | Amphibians and Reptiles in Tanzania's National Parks. Biodiversity and Conservation (Mike Klemens, USA) |
| 16h00 | Herpetology in Uganda and Kenya: An Overview (Bob Drewes, USA) |
| 16h20 | An Overview of the Composition, Distribution, and Conservation Issues Concerning East African Chelonians" (Don Moll, USA) |
| 16h40 | General Discussion |
| 17h00 | Pub (cont.) |

REPORT ON NINTH AFRICAN AMPHIBIAN SYMPOSIUM

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The *Ninth Symposium on African Amphibians* was held from 9 to 12 September 1995 in Bristol, England. The venue for the symposium was the Burwalls Centre, a large Victorian house built in 1872, standing in landscaped wooded gardens, and overlooking the gorge of the River Avon and the City of Bristol. Burwalls is situated alongside the well known and spectacular Bristol Suspension Bridge, with a 200 m span across the Avon Gorge. The bridge, which was the first of its kind, was designed in 1832 and is still in use.

The symposium was attended by 31 delegates, including seven from South Africa, namely Alan Channing, Phil Bishop, Les Minter, Louis du Preez, Abeda Dawood, Ania Wiczorec and Brian Wilson. Other delegates included Stephen Kigoolo from Uganda; Arne Schiøtz from Denmark; Richard Tinsley, John Measey, Joe Jackson, Begona Arano, Miranda Dyson, Peter Henzi, Tim Halliday, John Poynton and Malcolm Largen from England; Andreas Elephant from Germany; Christina Giacomo and Emilio Balletto from Italy; Hans Rudi Kobel and Louis du Pasquier from Switzerland; and Michael Klemens and Christina Richards from the United States of America.

Talks were organised in four sessions. In the first session, which dealt with ecology and behaviour, the first three talks were on aspects related to *Xenopus*.

The second session on biogeography, diversity and conservation was opened with a very interesting paper by John Poynton on Tanzanian bufonids. Phil Bishop presented a talk on the *South African Frog Atlas Project*. A talk on the amphibians of Uganda, Tanzania and Ethiopia was also presented during this session.

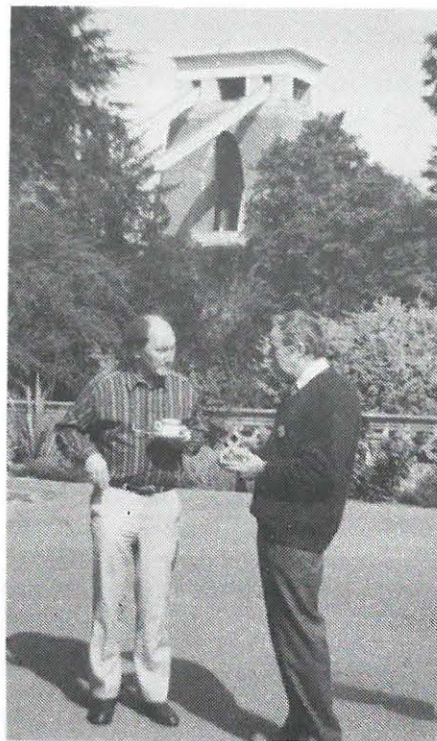
Session three dealt with evolutionary biology. Four talks in this session dealt with molecular biology, while the remaining three discussed anuran parasites.

All seven talks in the fourth and last session, on phylogeny and reproductive biology, were by South Africans. The symposium was concluded with a slide show *A Zambian Frogging Trip* by Alan Channing.

The second day was rounded off with dinner at the Avon Gorge Hotel.

A post-symposium trip to Bath the next day was most certainly one of the many highlights. The roman baths date back to 863 B.C. Roman colonists had developed a considerable spa establishment well before the first century A.D. Another highlight was a visit to the Bath Abbey which was built in the 16th century.

A word of sincere thanks to Richard Tinsley and his team who organised the symposium and did a splendid job. The venue, catering, accommodation and organisation in general were excellent, not to mention the hospitality.



Left: Richard Tinsley (left) and Louis du Pasquier at the *Ninth Meeting of the African Amphibian Working Group* held in Bristol, England, 9-12 September 1995. The Bristol Suspension Bridge is visible in the background. (Photo: L.H. du Preez)



Below: From left to right: A. Elephant, Mrs Kobel, H.R. Kobel and M. Largen at the *Ninth Meeting of the African Amphibian Working Group*. (Photo: L.H. du Preez)

THE ENDANGERED MICRO FROG THREATENED BY MINING

Atherton L. de Villiers

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There is great concern about the effects of sand mining activities near Kleinmond on the habitat of the already highly threatened Micro Frog. Mining activities have been in progress since 1988 and continue despite the objections of the provincial nature conservation authority, Cape Nature Conservation. Three important breeding sites have been lost in the process.

The Micro Frog *Microbatrachella capensis* is one of the most threatened amphibians in South Africa. It is endemic to the southern coastal lowlands where it is restricted to three main areas within a 140 km radius south-east of Cape Town. These three areas are the Cape Flats, the Betty's Bay/Kleinmond region, and an area midway between Gansbaai and Agulhas. The restricted and patchy distribution pattern of this tiny (less than 2 cm long) frog can be attributed to its specialised habitat requirements. In brief, it inhabits undisturbed, seasonal black-water wetlands (vleis) in acidic, relatively flat, sandy areas where fynbos vegetation occurs. The species is seriously threatened by habitat destruction and degradation associated with urban and rural development.

Due to the lack of up-to-date information on the distribution and conservation status of the Micro Frog, Cape Nature Conservation undertook a systematic survey of the species - from 1988 to 1990. The Micro Frog was found to be threatened virtually throughout its distribution range with only one small dwindling population occurring in an official nature reserve. As a result of the survey, Cape Nature Conservation now monitors all key populations annually.

The Micro Frog was first discovered in the Kleinmond area in 1976, the same year in which it was discovered on the "Vaalvlei" property where the present sand mine is situated. At the time, at least 100 individuals were reported to be calling on this property from a particular breeding site south of the main road between Bot River and Kleinmond. Incidentally, Micro Frogs have only been found south of the main road on this property.

Details of sand mining activities on "Vaalvlei" south of this road are as follows: In 1988 mining activities were noticed on the western side of the property. In 1992 another mine was noticed on the eastern side of the property more than 200 m south-east of the centre of the Micro Frog breeding wetlands. From 1992 to September 1995 this mine increased in size to the degree that it was degrading a main breeding site (in fact, the one discovered in 1976). Cape Nature Conservation brought the case to the attention of the Department of Mineral and Energy Affairs, and made certain recommendations concerning the rehabilitation of the area (September 1995). In October 1996 it was noticed that mining activities were continuing despite the objections and recommendations, and that little had been done to rehabilitate the mined areas. The total area that has been mined south of the road since 1988 is now approximately 1000 x 300 m in extent, which has resulted in the destruction of three breeding sites.

Wetlands on this property also provide habitat for another endangered amphibian, the Cape Platanna *Xenopus gilli*, which together with the Micro Frog, constitute two

of the four endangered amphibians listed in the 1988 *South African Red Data Book - Reptiles and Amphibians*.

Every attempt should be made to rehabilitate the mined area. In this regard landscaping should be undertaken in such a way as to allow for the formation of seasonal vlei areas during the wet winter months. This, together with the re-establishment of associated fynbos communities, may eventually lead to Micro Frogs and Cape Platannas successfully re-colonizing the area. Fortunately, the chances of this happening

appear to be improving. In reaction to a press statement by Cape Nature Conservation about this predicament, the Department of Mineral and Energy Affairs is now investigating the matter, and a rehabilitation programme is being planned.

It should also be mentioned that part of the mined area has also been identified by Kleinmond Municipality as a possible waste disposal site. Plans to further degrade this high priority conservation area, especially a development of this nature, should be strongly opposed.

CITATIONS IN TEN THOUSAND ITEMS AND THEIR BIBLIOGRAPHIES

D.E. van Dijk

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Recently I attempted to clear my desk and catalogue and enter into computer all available articles not yet dealt with before the new year. For each article I make a list of all its African anuran references in brief form, sufficient for me to check whether I have on catalogue each article referred to, in the form in which it has been given. There is thus a primary breakdown - the article is new to me, or I know about it but do not have it, or I have it. In the category "known to me but do not have" I may get useful additional information, such as pagination, which I did not have. In the category "known to me and do have" there may be those cited as I have catalogued them and others which are cited differently. I make a note of any discrepancies and check my citations.

Either the citation in the article is correct, and I have made an error in cataloguing, or the citation has a short-coming. In the first case I am able to weed out another short-coming in my references. In the second case it does not mean that I accuse anyone of error; frequently it is difficult to decide where the short-coming came about, whether with the author, the editor, the

printer, or perhaps with the original reference if it was imperfect.

It is also possible to learn how errors come about. How much correction may be required is indicated by the following: A table in one of my recent publications had more than a score of imperfections, all introduced in the type-setting and duly corrected (I keep copies of originals and make photocopies of proofs); I have counted at least 36, many new, in the table in the printed article. In the article text, done directly from electronic copy supplied by me, I have detected one error.

Often bibliographies are particularly prone to error. Altig (1966) made the following comment in a book review: "I did not read the book editorially, but I did note that the few errors that I saw were in the literature cited. Regrettably, this is common; I know from current involvement with two projects with large bibliographic listings that at least one-third of the published citations contain errors." (p. 291). In checking about 9 000 of my catalogue cards and computer records against the original articles I found that

about one in eleven could be improved, although outright errors were much less common. Among the references recently catalogued were examples which illustrate the kind of details which I try to reflect as accurately as possible in citations, and as completely as is necessary to enable anyone to trace or specify any item.

As mentioned above, one source of error in the final printed article is the introduction of a new error when another is corrected. This has become less frequent with the use of electronic copy, but errors may still be introduced when the text is adjusted to the layout. When I see *J. herp. Assoc. S. Afr.* in the place of *J. herp. Assoc. Afr.* I do not assume it is the author's error. When this is in a journal which has *S. Afr.* in its abbreviation I suspect the printer, and this suspicion is reinforced when *S.* is in one line and *Afr.* in the next. This looks like an error which came in during justification, perhaps after correcting an error noticed in the proofs.

Turning now to examples in Branch (1996) of how he considers I should have cited particular articles. The way in which reference to Hewitt 1937 is given (*op. cit.*) deviates from what I would do in several ways. Firstly, I am puzzled by Branch's inconsistency in using roman numerals for the numbered plates, as in the original, but not for Part II. I try to follow the usage in the original throughout, which in this case would also mean leaving initial capitals in the title and A-H for the addenda and not changing this to a-h. Also, I would have added to the numbered plates the two unnumbered ones - portraits. Were these intentionally left out? References to *Bull. Mus. comp. Zoöl. Harvard* (dieresis absent in Branch *op. cit.*) often differ by two pages at the beginning and sometimes also by one at the end. The reason is that there is a title leaf which is un-numbered, and also an un-numbered Explanation of Plates. The title page is also not precisely the same as the heading of the article proper, differing not only in being All Caps, but also in using an ampersand. (In other journals diacritic signs may be sacrificed.) Pagination in these cases

may differ according to whether it is taken directly from the article or from the Table of Contents of the journal (or even in some journals, from that given at the foot of the first page).

Discrepancies do not necessarily mean error. I do not give a part (Number) of a journal unless this is necessary, because it suggests that each number starts with page 1. Where it is necessary I do so, including cases where the cover of the particular number features an illustration relating to the article, or where an abstract is distinguished by roman numerals, but does not appear consistently in a particular part, for instance the last part. One reference in *Journal of Parasitology* proved fiendishly difficult to get on Inter-Library Loan because the part was not given.

Branch (*op. cit.*) is concerned about priority. He lists two articles of Hewitt 1909 in the same number of the same journal, but cites as 1909a the article with higher page numbers. There may be an unstated reason for this, but I try to list articles in the sequence dictated by page numbers.

When I state that the Zoological Record (ZR) gives different dates to those in articles cited, this is a statement of fact. It is demonstrably wrong to assume that I consider the ZR to be correct (see van Dijk, 1981), as will also be shown below. Tracing references given in the ZR has sometimes proved to be difficult, with pagination having been taken from separates (preprints or reprints). There are indications that items received by the Records are date-stamped, so that if the ZR gives an earlier date, this must be very seriously considered, particularly in older references when the ZR appeared within a year of the articles reviewed. Correct dates are a great problem. Some of my catalogue cards have different dates penciled in, with the usages in citations by different authors noted. The card on Sclater notes that ZR gives 1898. The listing in ZR also mentions pl.v. I have been unable, so far, to find any article which gives Sclater 1899 before 1964. Van der Westhuizen (1961) gives 1898. Incidentally, one of the obvious references to check was

the revision of the genus *Heleophryne* by du Toit in 1934. When I took it out I noticed that the first page of the article does not give the author's name, so it becomes obligatory to include the title page, which must be given as pre-pagination. I made the correction to my citation. The ZR does not give pre-pagination.

Turning now to other articles recently catalogued and filed. In *Afr. Herp News* No. 25 there are articles on pages 54 and 55 which bear inscriptions "Bird Numbers 5 December 1995" and "Bird Numbers 6 October 1996", respectively, above the titles. Are these facsimiles from other publications? What are the citations? A couple of the articles I still cannot finalize are taken from newspapers. In some cases I have not been able to find a page reference by writing to the newspaper. These may be considered unimportant, but I had to go to microfilm versions of some newspapers and scan them to find page references and in at least one case this was an important item, giving as it did the number of *Xenopus* exported some years ago. Will the Editor of *Afr. Herp News* please note, and insist on, page references for articles which are reproduced, and on at least initials for all comments.

One reference in *Herp. Assoc. Zimbabwe Newsletter* 22 gives *Arnoldia* 3:1-3. This should be *Arnoldia* 3(14): 1-3 (or 3 pp.). A reference to Lambiris's *Amphibians of Zimbabwe* reminds me that I have yet to see one reference to it which I consider full and accurate. The nearest is Zoological Record, which incidentally gives the date as 1990 (1989), the date of despatch of the copy I purchased, suggesting that 1990 is correct. ZR gives the pagination as: 1-247, illustr. I give 247 pp. (24 plates). This indicates that the plates are on pages which are included in the pagination, although the numbers of the pages on which they appear are not shown. ZR illustrates its fallibility by giving Lambiris (1989) in *Lammergeyer* 39 as 1988, and pagination as 1-210. Channing in *Lammergeyer* 40 gives the date of 39 as 1989, which appears to be correct. In *Lammergeyer* 39 the Contents of the article are given

before page 1, on an unpaginated leaf, which must be recorded as prepagination (i) or (ii), the second unpaginated page being blank, hence: (i) 1-210, unlike the ZR citation. Some references to *Lammergeyer* 39 give 212 pages, but p. 211 is blank and p. 212 is instruction to authors.

Two articles in *Herpetologica*, Volume 52 (1996), illustrate some of the details I note. I checked 17 references in Fabrezi & Alberch (1996), added plates to two and marked seven more of them for further checking. Four of these were articles by Laurent in the *Revue de Zoologie et de Botanique africaines*. Two of these gave one less page than I had, one gave the same number of pages, and one gave only page 1, whereas I had 417-418. The last of these was correct as I had it. Perhaps the authors worked from a separate, numbered from 1, or unnumbered. I had guessed what had happened with the other three references to Laurent, before pulling them out to check. It is apparently the policy of *Herpetologica*, in common with many other journals, of not referring to plates. In the *Rev. Zool. Bot. afr.* there are often plates, facing blank pages, while the explanation of the plates is given on the last numbered (odd-numbered) page. What were the authors to do? There were two alternatives: to leave out the explanation of the plates, and hence a numbered page; or have an explanation of plates without the plates. They used the first option for the first two references and the second option for the third. Another discrepancy may have been attributable to editorial usage. The reference to Drewes in *Occ. Pap. Calif. Acad. Sci.* does not mention a plate, and also not pre-pagination. The sixth discrepancy was in the reference to Liem where the volume is given as 55 instead of 57, and again, there is no pre-pagination. The seventh and last discrepancy was due to a lapse on my part, and I was able to make a correction to my catalogue. I checked 10 references in Grohovaz, Harley & Fabian, added a plate to one, and marked three for further checking. The reference to David 1966 was almost certainly a lapsus for Dawid. This proved to be the case, and the mistake was also in the text. I also suspected that

Nieuwkoop & Faber, 2nd Edition, was not 1975. Unfortunately I do not have the later editions, but a recent book confirmed that the second edition was in 1967, and the third in 1975. I have tried in vain to buy copies of the later editions of Normal Table of *Xenopus laevis* (Daudin). The last reference which I followed up was Gurdon 1967 in Wilt & Wessels, given as p. 76. I had pp. 75-84, which was correct, but I have seen p. 76 somewhere before and hope to trace the source of the error. I can easily visualize what occurred. The book was taken out of the library, or even obtained by Inter-Library Loan, used, without noting the total pagination, and returned. When the Literature Cited was being compiled, some source was consulted, as I had to do for Nieuwkoop & Faber, and it happened to be faulty.

One type of reference which I often have trouble finalizing is the newsletter. Thus I cannot find any source of items in *Herp. Assoc. Zimbabwe Newsletter*, some numbers of the *Brit. herp. Soc. Newsletter*, and others. This is the reason why I strongly prefer revisions of names, dates, important distributions, and the like, to go to widely circulated journals. One of the advantages of the collection of literature which I have made, and of a bibliography based on the collection (of which a draft is planned for 1999), is that references can be checked against it, hopefully cutting down on errors which are always waiting to slip in.

When asked to referee I usually avoid anonymity, thus giving me, in this regard, more freedom to suggest that a citation should be checked, giving what I think it should be. I have, however, myself refused to acknowledge referees who have made no material contribution, and have confined themselves to such questions as whether it is correct (it is) to cite (de Villiers, 1930) in the text, when it is DE VILLIERS, C.G.S. 1930 in the literature list. I have told an editor in such circumstances that *he* can thank them, for they are helping him to edit to his style, not me to produce a better paper.

To end on a lighter note, the following reference has been given, more than once, as the origin of the pregnancy test using *Xenopus laevis*: Hogben, L. 1930. *Proc. Roy. Soc. Lond. (Series A)* 5: 19. There are two reasons why this can immediately be seen to be a very dubious reference. The correct reference, which does not mention pregnancy tests, is the following: Hogben, L. 1934. *Trans. roy. Soc. S. Afr.* 22: xvii-xviii (Proceedings of the Meeting of March 19, 1930). It is possible to trace the source of the steps as the one changed into the other.

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OUTSPAN IN TANZANIA

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An article in *African Herp News* (Poynton, 1993) outlined plans for a trek through African amphibian material in London's Natural History Museum (NHM). Behind the trek was the thought that it is not only natural areas that require exploration; museums also require exploration since huge quantities of unpublished material tend to accumulate in them. Quite apart from concern about the effective loss of valuable data, one may feel concerned that so many animals have been killed to so little advantage.

Perhaps museums are at their serviceable best when exploration takes place simultaneously in the field and in the museum. Such a situation has arisen in work on the amphibians of Tanzania. For the past few years Tanzania has become a centre for collecting programmes. An organization called Frontier-Tanzania has been concentrating on the much-neglected coastal forests, in conjunction with sterling work being done by Kim Howell at the University of Dar es Salaam with backup from the Zoologisk Museum of Copenhagen. Inland collecting has been boosted by a programme being run by the Wildlife Conservation Society, formerly the New York Zoological Society. Other collectors have also been busy.

Yet this work runs into difficulties because there is no comprehensive study of Tanzanian amphibians. Arne Schiøtz's (1975) study on East African treefrogs is invaluable but is becoming outdated. A study of the family Microhylidae, which includes the ball-like rainfrogs (*Breviceps*), was published by Parker (1934) of the NHM and has an important Tanzanian component, but this study is very much out of date. Packenham (1983) reviewed the fauna of two offshore islands, Howell (1993) published a survey of the eastern African forest fauna,

but these, like my study of the south-eastern Tanzanian fauna (1991), to my mind highlight the need for comprehensive treatment of the rich Tanzanian fauna. It therefore made sense for my trek through the NHM to outspan among the mass of Tanzanian material to provide taxonomic back-up for the field work.

More correctly one should say "attempt to provide back-up". Given the undeveloped state of the taxonomy, new collections bring new problems in the form of material that is not referable to any known species - or even genus - as well as material that shows the current taxonomy to be unworkable. How is one to tackle this? The long-term procedure, of course, is to settle down to a comprehensive revision of the Tanzanian fauna. This boils down essentially to a small-scale version of the initial plan to trek through the entire African collection in the NHM, working family by family through the Tanzanian material. Most of the enormous area of Tanzania is under-collected or has not been sampled at all, but there is enough Tanzanian material in the NHM to set up a basic taxonomic coverage of the amphibian fauna. Regrettably the amount of preserved material is far from matched by habitat and other ecological data, and it has to be hoped that current collecting will make good this deficiency.

Museum work gains many advantages when collaborating with people currently in the field. There is a better prospect of matching collected material with field data, and there is a better chance of tracing localities. During my early general African trek I had to abandon all locality records that could not be placed in a degree-square and so incorporated into a WORLDMAP plotting programme being carried out in the Zoologisk Museum at Copenhagen. This programme has aspirations to plot all

African amphibian records on a degree-square grid. Very many records attached especially to older material proved to be unusable according to this criterion, the extreme case being the locality record "Africa". But several recent records had to be discarded, such as "Top of the Lebombo" since the Lebombo range extends more than one degree in latitude. Even among records that appear to refer to a specific locality, 23% have yet to be traced to a degree-square because the collector used an idiosyncratic form of spelling that does not appear in gazetteers, or because several different localities carry the name given by the collector and it is not possible to decide which is the right one.

This is something that collectors should always bear in mind: co-ordinates allowing at least quarter-degree plotting should accompany every specimen, as well as altitude and specification of habitat.

At the time of opting for a Tanzanian outspan, I had worked through the African bufonids, heleophrynids and microhylids. Fortunately the first and third of these families constitute a big chunk of the Tanzanian fauna, so the outspan could find some reasonably firm ground to begin with. In Sub-Saharan Africa the bufonidae or toad family include some 85 species, including 57 species of true toad (genus *Bufo*) and an extraordinarily interesting range of small-sized forms which are mainly montane or forest-dwelling, and which show various trends towards laying eggs away from surface water. My current estimate is that 26 species of bufonid occur in Tanzania (31% of the Sub-Saharan total), and that 13 species - half the Tanzanian total - seem endemic to the territory.

The endemics include the genus *Nectophrynoides* which is forest-dwelling and ovo-viviparous - the tadpoles are retained in the body of the female and emerge from the female's vent as fully-formed and active toadlets. The six recognizable species of this genus occur in the great mountains and scarps; in contrast the lowland forests are the distributional centre of two other bufonid genera, *Mertensophryne* and

Stephopaedes, which lay eggs in small pockets of water in treeholes or empty shells of the giant land snail. The upland - lowland separation shown by *Nectophrynoides* and *Mertensophryne* - *Stephopaedes* is a most striking puzzle that is repeated over and over again in the Tanzanian amphibian fauna and in other animal and plant groups. The separation is very marked, and an explanation - or suite of explanations - for this could shed light on interesting aspects of African biogeography.

Tanzania seems to be the original homeland of the African microhylids. There appear to be six genera of relatively unspecialized forest-dwelling forms, no less than five of which seem to be endemic to Tanzania. The sixth genus, which represents the stock from which *Breviceps* seems to have arisen - well named *Probreviceps* - occurs also in the eastern Zimbabwean highlands. South of the Limpopo it seems to have evolved into *Breviceps*, and one advanced species has returned to Tanzania, although now in open country.

The bufonids and microhylids of Tanzania give some indication of the richness of the country's amphibian fauna. It is not yet possible to give a settled figure of how many amphibian species are present there, but it is in excess of 120, which is about 20% of the entire Sub-Saharan total. South Africa, which covers a substantially larger area and has a greater range of biomes, including the East African lowland biome, has only about 100 species. There are 44 Tanzanian endemic species by current reckoning, although some of these may occur also in poorly collected northern Mozambique. This gives a percentage endemicity of about 37. South Africa scores a better 52% endemicity on account of the large south-temperate fauna.

I have no clear idea what publishing form a comprehensive study of the Tanzanian amphibian fauna will take. I plan to produce a manuscript on each family as it is completed and circulate the draft privately. For a definitive publication, co-authors may come in as people see fit. I have spent a year on the Bufonidae and the task is not yet complete. It will only be finished when

material in several other museums has been re-examined. There are still eight families to go, some of them very troublesome, so I expect to be camped in the Tanzanian outspan for another good six years.

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HOLIDAYING WITH HERPS IN SOUTH AFRICA

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Together with two friends I decided to spend my holiday in South Africa with the hope of seeing some of the country's many interesting animals, particularly reptiles. What follows is a diarised account of our experiences, especially those involving reptiles.

21 October 1996

Late in the afternoon my two friends and I depart for Johannesburg via London.

22 October 1996

Arrive in Johannesburg in the morning. Drive to Upington in the Northern Cape province (800 km), arriving in the late afternoon. A short night drive on the road to the Kalahari Gemsbok National Park produces nothing.

23 October 1996

Drive to Springbok in the morning, with a long stop at the Augrabies Falls National Park. Numerous *Platysaurus capensis* seen

around the main waterfall and on rocks near pools and streams in the park. These lizards are commonly seen licking drops of water off rocks. In rocky places we see *Agama atra*, *A. anchietae*, *Mabuya variegata* and *M. sulcata*; *Pachydactylus bibronii* and *P. laevigatus* are found in crevices. One *Cordylus subdellus* spotted near the main waterfall. In the shade near the restaurant we see *Mabuya striata sparsa*, while a few *Pedioplanis namaquensis* are seen running from bush to bush in a sandy area. On the roadside outside Pofadder we see two *Agama aculeata*. Arrive at Springbok in the late afternoon. A short night drive near Springbok produces only one *Pachydactylus mariquensis*.

24 October 1996

In the morning we go for a walk in Goegap Nature Reserve. In rocky places we see *Cordylus polyzonus*, *Mabuya sulcata*, *M. variegata*, *Agama atra* and *A. anchietae*. In rock crevices or under exfoliating flakes

Pachydactylus bibronii, *P. weberi* and *Phyllodactylus rupicolus* are seen, and on a few isolated rocky outcrops *Cordylus peersi* and *Phelsuma ocellata* are sighted. In sandy plains *Pedioplanis namaquensis* and *P. lineoocellata* are commonly seen. In a bush near the office we find a beautiful *Bitis cornuta*. At 18h00 a loud chorus of *Ptenopus garrulus* is heard in a sandy area at the park gate entrance. A few snakes are found dead-on-road, but with the exception of a freshly killed *Pseudaspis cana* (black phase), these are too desiccated to allow identification. A night drive near Springbok produces several *Pachydactylus mariquensis* (cream with reddish transverse bars on the back) and a few *P. labialis* and *P. bibronii*. By 21h00 the calls of *Ptenopus garrulus* have become less frequent.

25 October 1996

Drive to Port Nolloth (via Steinkopf). Several lizards seen basking on the road. It is not easy to avoid driving over them. We see *Agama hispida* (a few are already freshly dead), lacertids and one *Cordylus cataphractus*. Towards midday we take a short walk in the sand dunes near McDougall Bay and observe several *Bradypodion ventrale* (common, when present usually one per bush), *Meroles knoxii*, *M. ctenodactylus* and *Agama hispida*. We meet a *Bitis schneideri* hunter who explains how he spots the spurs of that snake on the sand and how he collects specimens. After catching the snakes he puts them in a tank and, when several have been collected, he sends them to a laboratory in Cape Town. He must provide the collection dates and locality data. This adder hunter receives R150.00 per snake. After use, all snakes are sent back to him and released. We later meet a diver for a mineral society on the coast who explains to us how the spurs of the different *Bitis* (*B. schneideri*, *B. arietans*, *B. cornuta*) are differentiated in the dune sand. He also tells us how to find small frogs (? *Breviceps*) living in the dunes. A night drive produces several *Pachydactylus austeni*.

26 October 1996

Drive to Garies (via Kleinsee and Springbok). We make a short stop at the beginning of the non-tarred road to Kleinsee. Find *Pachydactylus labialis* under thick pieces of paper and spot a *Mabuya capensis*. All along the road we see *Chersina angulata* of different sizes. We make one more stop on the Kleinsee-Springbok road. In the middle of the road a dead *Pseudaspis cana* (brown phase) is found, and on a small rocky ridge we see *Cordylus cataphractus*, *Pachydactylus bibronii* and *Nucras tessellata*. Arrive at Garies in the afternoon. At 18h00 we hear *Ptenopus garrulus* calls and find one *Nucras tessellata* under a rock. A night drive proves fruitless.

27 October 1996

Drive to Williston. On the road after Calvinia we see half a *Psammobates tentorius* shell. Arrive at Williston in the afternoon. A short walk near the town produces only *Mabuya variegata*. A night drive south of Williston on the Fraserburg road produces one live and one dead *Dasyplepis scabra*, one *Bitis caudalis*, two unidentified frogs, several *Pachydactylus bibronii*, *P. mariquensis* (one pair mating on the road) and three *Chondrodactylus angulifer*.

28 October 1996

Drive to Beaufort West. On the road south of Williston and north of Fraserburg we see several *Psammobates tentorius* and *Agama aculeata*. Arrive at the Karoo National Park outside Beaufort West late in the morning. A short walk near the rest camp produces *Mabuya variegata*, *M. sulcata* and *Agama atra*. *Pachydactylus bibronii* and *P. serval* are found in rock crevices and under exfoliating flakes. One large *Geochelone pardalis* is sighted near the restaurant. In a crevice on the second floor of the building we see a *Pseudocordylus microlepidotus* and a few *Pachydactylus bibronii* (one pair mating). At night we find a *Bitis caudalis* as well as a *Lamprophis fuliginosus* dead-on-road, and a beautiful little *Homoroselaps lacteus* snake, but a park guard in a truck tells us it is better to stay around the rest camp at night.

29 October 1996

In the morning we start on a long hiking trail in the park. Only a few lacertids, one snake, one *Mabuya homalocephala*, *Pachydactylus bibronii*, *P. serval*, *Mabuya variegata*, *Agama atra*, and frogs and tadpoles in a small artificial pool, are seen. In the afternoon we see a sand snake (*Psammophis* sp.) slowly crossing the road. Near the camp we hear frogs jumping into a pond and note the heads of terrapins, *Pelomedusa subrufa*.

30 October 1996

Before the exit gate of the Karoo National Park we spot a large *Varanus albigularis* basking on the road. On our way to Colesberg we observe a single soccer ball-size *Geochelone pardalis* crossing the road. Arrive in Colesberg at noon. After lunch we drive to Philippolis (south-western Free State province) to see the Orange River. A few kilometers before the bridge we stop near a rocky area and see *Pedioplanis namaquensis*, *Pachydactylus bibronii* and *Mabuya sulcata*. A night drive on the Colesberg-Petrusville road produces several *Pachydactylus mariquensis* (buff with chocolate brown bars) and one *P. capensis*. On the road we are stopped by a car. A park guard approaches to our vehicle. After a short communication it appears that he suspects us of shooting antelope.

31 October 1996

We drive to Willem Pretorius Game Reserve, central Free State province, arriving late in the morning. See only a single *Mabuya varia*. In the camp at night numerous frogs and toads (including *Tomopterna cryptotis* - striped and unstriped, and *Bufo gutturalis*) are observed jumping on the road. A short night drive out of the camp produces the same frogs and toads, as well as three *Crotaphopeltis hotamboeia* (two alive, one freshly killed). We are of the opinion that it would be most satisfactory if a special speed limit was set to reduce the numbers of reptiles and amphibians that are run over by vehicles. During spring in the Paris area of France a few roads are closed at night to allow frogs and toads the opportunity of crossing and reaching ponds where they mate/breed.

01 November 1996

In the morning, before heading back to Johannesburg, we go for a last drive in the W.P.G.R. to see mammals, noting a juvenile *Geochelone pardalis* crossing the road.

It was a long trip (4500 km), but we saw numerous animals, including reptiles, birds, insects and mammals, and beautiful landscapes with a lot of colourful flowers, especially in the Little Namaqualand and Calvinia areas. This was my third visit to South Africa and I hope it will not be the last.

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REPORT ON A COLLECTION OF LIZARDS FROM OWAMBO DISTRICT, NORTHERN NAMIBIA

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Little has been published on the occurrence of lizards in the Owambo district since Robert Mertens' (1955, 1971) papers on the reptiles and amphibians of Namibia. Collecting in this region was restricted during the 1970s and 1980s because of military activity during the South Africa - Angola War.

The Owambo district, situated in central northern Namibia, is the most densely populated region of that country (Marsh & Seely, 1992). A variety of vegetation types cover the region, with mopane woodland and palm savanna dominating (Claassen & Page, 1978).

Over a three-day period from 22-24 May 1996, 13 localities in the Owambo district were visited (Appendix 1). The main aim of the trip was to collect *Agama etoshae* for a project on their reproduction and distribution (NJLH). A total of 100 lizards assignable to nine species (one gekkonid, three agamids, two scincids and three lacertids) were collected, with an additional sight record of a gerrhosaurid.

In most cases 4-5 persons went on foot searching for terrestrial, and occasionally arboreal, lizards which were captured either by hand or by shooting them with stretched rubber bands. The majority of specimens were deposited in the preserved collection of the National Museum, Bloemfontein (NMB). Numbers preceded by "FN" are National Museum field numbers; these specimens will be sent for deposition in the collection of the National Museum of Namibia, Windhoek.

The collection is documented below, together with comments on habitat, behaviour, distribution and taxonomic status.

SPECIES ACCOUNTS

Gekkonidae

Pachydactylus turneri (Gray 1864)

Turner's Gecko

One specimen: Omuulu (NMB R7450).

A single specimen (74 mm SVL) with distinctly keeled dorsal tubercles was found under reeds outside a hut. This identification, using a diagnostic key translated into English by Prof. Aaron Bauer, is based on the revision of the *Pachydactylus bibronii* - *laevigatus* complex by H. Benyr (1995), with the substitution of the name *turneri* for *laevigatus* based on priority.

Agamidae

Agama aculeata aculeata Merrem 1820

Western Ground Agama

Eighteen specimens: Ohakweenyanga (NMB R7425); Omutha (NMB R7418-20, FN 4002, 4006); Onanakali (NMB R7421-24, FN 4020-21, 4024, 4027-28); Omuulu (NMB R7417); Onandi (NMB R7426); Oukango (NMB R7416).

Fourth toe on both feet longer than 3rd (typical for this subspecies: McLachlan, 1981) in 14, but shorter in four, specimens; 17-21 (19 in eight specimens) lamellae under 4th toe of right foot. Four males (74-99 mm SVL) had 9-12 pre-cloacal pores. Largest male (NMB R7417) 99 mm SVL + 137 mm tail length = 236 mm total length; largest female (NMB R7421) 100 mm SVL.

According to McLachlan (1981) *A. a. aculeata* is distinguished from *A. a. distanti* by its smooth (vs. rugose) dorsal head shields, 18-24 (vs. 11-17) lamellae under the fourth toe, and fourth toe longer (not

shorter) than third. Most of the specimens collected key out as *A. a. aculeata* with reference to all three criteria listed above. However, several head shields are somewhat ridged in NMB R7416, 7420, 7425, while a few are keeled in FN 4021. Also, the third toe on both feet is longer than the fourth in NMB R7416 and 7420, and FN 4006 and 4020. NMB R7420 also has only 17 subdigital lamellae on the fourth toe of the right foot, and could therefore be considered an *A. a. distanti* using the above criteria; while NMB R7416 is similar, but has 19 subdigital lamellae. The last two specimens nevertheless have mainly smooth head shields, and all other variations mentioned above are here considered minor. All specimens are therefore referred to the nominate subspecies.

Usually found in sandy areas with sparse, low thorn bushes, although a male from Omuulu was discovered under the trunk of a felled tree, and another male from Oukango ran across a sandy opening and climbed the trunk of a mopane tree *Colophospermum mopane* (Kirk ex Benth.) to a height of about 50 cm before being captured.

Agama etoshae McLachlan 1981

Etosha Agama

Fifty-three specimens: Echama (NMB R7408-13, FN 4090, 4092-93, 4095-96); Emono (NMB R7390-91, FN 4035); Ohakweenyanga (NMB R7392-95, 7415, FN 4042, 4046-48); Ompundja (NMB R7396-407, FN 4057, 4070-71, 4074-77, 4080-81, 4085-86); Onanakali (NMB R7389); Onyaanya (NMB R7387-88, FN 4013-14); Oshinadhila (NMB R7414, FN 4100).

Largest male (NMB R7406) 75 + 73 = 148 mm; largest female (NMB R7412) 78 + 50 = 128 mm.

Usually found in open, sandy areas with a few scattered, low bushes in or near palm savanna or at the ecotone between mopane and palm biomes; a young male (NMB R7391) was discovered under a section of black cloth and had an overall dark greyish colour. In a sandy, open, overgrazed area at Ompundja, individual adults and juveniles were observed at the mouths of burrows,

into which they retreated when disturbed; burrows were usually situated in close proximity to small thorn bushes. These lizards are well camouflaged but usually easily captured when in the open and away from burrows. Males usually have short orange, black and/or brown stripes on a yellowish throat, together with a characteristic black spot-like marking at the base of the throat; females have a white gular region, sometimes with brown or grey streaks only, and the throat turns a pinkish-orange shade during the breeding season (NJLH, pers. obs.). This species is sympatric with *A. a. aculeata* at Ohakweenyanga and Onanakali. The throat of the latter has broken or continuous dark stripes, although a black marking at the base of the throat is occasionally also present. Other characters used to distinguish the two species in the field are: in *A. etoshae* there are usually three pairs of distinct, dark, oval-shaped paravertebral markings on the back between the fore- and hindlimbs, the inner part of each oval with a distinct white border, the belly is immaculate and the ear opening minute; while in *A. a. aculeata* dorsal markings are more variable and not as distinctive, grey reticulations are often present on the underparts and the diameter of the ear opening is more than half that of the eye cleft.

Acanthocercus atricollis (A. Smith 1849)

Tree Agama

One specimen: Ompundja (NMB R7427); Omuulu (sight record).

The captured specimen (59 mm SVL) was found in bushes in a sandy area, the other was an adult observed high up in the branches of a tree. In the western half of southern Africa this species occurs only in the Owamboland area (Branch, 1988).

Scincidae

Mabuya binotata (Bocage 1867)

Ovambo Tree Skink

One specimen: Omuulu (NMB R7441).

A large specimen (about 126 mm SVL, damaged) was found about 2 m up at the edge of a hollow in a large mopane tree in mopane woodland. The lizard was whitish-

grey with a distinct black band from behind the eye to above the shoulder. The geographical range of *M. binotata* is restricted to northern Namibia and southern Angola (Branch, 1988) and corresponds closely with that of the mopane tree *C. mopane* (Coates-Palgrave, 1977) in Namibia.

Mabuya striata wahlbergii (Peters 1869)

Wahlberg's Striped Skink
Sixteen specimens: Elundu area (NMB R7430-32); Emono (NMB R7437-38, FN 4039); Ompundja (NMB R7440); Omuulu (NMB R7429); Onanakali (NMB R7435-36, FN 4019); Onandi (NMB R7439); Onhinda (NMB R7433); Onyaanya (NMB R7434); Oukango (NMB R7428, FN 3984).

Supraciliaries 5; supralabials anterior to subocular 5-6 (4 on right side in NMB R7434); subocular in contact with lip (excluded on right side of head in NMB R7440 and FN 4019); lamellae under 4th finger of right hand 14-17; mid-body scale rows usually 34-38 (32 in NMB R7428); mid-dorsal scales tricarinate.

Habitat utilization in this very common skink apparently depends on size. The smallest lizards (30-40 mm SVL; $n = 5$) were found in sandy areas with scattered bushes (at the base of which they take shelter), sometimes near trees; one juvenile (NMB R7437, 38 mm SVL) was observed taking shelter in a hole (upper diameter c. 10 mm, near a small thorn bush) from which it reappeared after a few minutes. Larger lizards (48-71 mm SVL; four males, two females, gonads examined) occupied small trees, standing or felled. The largest individuals (73-88 mm SVL; two males, three females, gonads examined) were usually found 1-2 m up on the trunks of large mopane or palm trees; in some cases 3-4 adults were observed on or around the base of a tree trunk, and almost every palm tree, as well as mopane trees in open areas, seemed to have at least one resident adult. In only one case was what appeared to be a subadult seen with these larger adults. At Onanakali a fairly large individual was observed on a tall termitarium.

The Owamboland skinks did not have the brown, unstriped colour pattern of "typical" *M. s. wahlbergii* as illustrated in Branch (1988, pl. 54). Large adults closely resembled a Botswana specimen photographed by Auerbach (1987, pl. 10). The large Owamboland skinks had grey-brown dorsa and flanks, with occasional dark markings; scattered pale flecks and numerous larger dark markings present only in NMB R7435, which has a dorsal pattern intermediate between large and medium sized specimens; a fairly distinct 2-3 scale-wide cream coloured dorso-lateral stripe present from behind the eye to the tail base from where it fades, the stripe being most distinct on the anterior half of the body; venter white, gular region with numerous distinct black speckles usually extending only to the level of ear openings, but more extensive in the largest specimen (88 + 82r = 170 mm; NMB R7434, male); gular markings virtually absent in one female (NMB R7435). The throat was orange in a few large specimens observed on tree trunks at Ompundja. At Ompundja NMB R7440 (75 mm SVL) was taken from a small tree outside a building - only the labials and anterior part of the dorso-lateral stripes were orange. Medium sized specimens differed in having light brown dorsa and flanks with varying amounts of black and white speckling. Monard (1937) noted that the most "colourful" of his "typical" *M. striata* (= *M. s. wahlbergii*) had black and white spots on the flanks. Dorso-lateral stripes (two-scales-wide) tended to fade out from about midbody. Top of head brown, virtually free of dark markings which are present in smaller and larger specimens; markings on the throat grey, indistinct and fewer in number. The smallest specimens had dark brown dorsa with numerous dark speckles, the dorso-lateral stripes and throat were similar to the latter group. The black band from behind the eye often reaches to beyond the level of the shoulder, extending to the level of the hind limbs in the medium sized group, in which it is also most distinct.

Broadley (1977) reviewed the *Mabuya striata* complex in south-eastern Africa, excluding Namibia and Angola, but nevertheless referred Mertens' (1955) northern and

central Namibian *M. s. striata* (Peters) records to *M. s. wahlbergii* (see map in Branch 1988). More recently the latter subspecies was recorded from south-eastern Angola (Branch & McCartney, 1992) and the Western Caprivi (Haacke, 1996).

Lacertidae

Pedioplanis lineoocellata cf. *pulchella* (Gray 1845)

Spotted Sandveld Lizard

One specimen: Onyaanya (NMB R7447).

A single specimen (35 + 54r = 89 mm) was collected at 13h10 in a sandy area with scattered, low thorn bushes, into which it ran. It was collected in sympatry with *Heliobolus lugubris* at this locality. The specimen had a blue-grey dorsum with a pale dorso-lateral stripe from behind the eye extending onto the tail where it faded away. Black and white spots present on upper parts of limbs, dorsum (especially between stripes) and anterior half of tail; white spots often superimposed on the duller dorso-lateral stripes. This is the most northerly record for the species and only the third quarter-degree record for Owamboland; only four quarter-degree records exist north of 21°S latitude in Namibia (see Visser, 1984a; Branch, 1988). The specimen is referable to *P. l. pulchella* on the basis of its weakly keeled, granular and juxtaposed posterior dorsals. The upper head shields are not noticeably rugose and the scales on the posterior part of the back are generally smaller than those on the tibia (lower leg). *P. l. pulchella* occurs in the southern parts of the subcontinent (Branch, 1988), with an apparently isolated population concentrated in the Northern Province of South Africa (Jacobsen, 1990). However, Jacobsen (1990) also recorded the typical subspecies in the same general area. He noted (p. 487) that *P. l. pulchella* "forms part of a complex of forms which currently have been lumped under a single species *P. lineoocellata*"; and that the "*P. lineoocellata* complex is in need of a thorough revision".

Nucras holubi (Steindachner 1882)

Holub's Sandveld Lizard

One specimen: Emono (NMB R7448).

A single specimen (43 mm SVL) was found in a sandy area with scattered bushes. It occurs in sympatry with *Heliobolus lugubris* at this locality. Jacobsen (1990) treats the large "ornata" morph of *N. taeniolata ornata* (Gray) (see Broadley, 1972) as a full species, while Bates (1996) considers the smaller "holubi" morph also to be specifically distinct from typical *N. taeniolata* (A. Smith). This locality appears to be the only the third quarter-degree record for Owambo district; it is only the eleventh quarter-degree record for Namibia (Broadley, 1972; Visser, 1984b). Apart from an Oshakati specimen (1715DC; locality incorrectly plotted on the maps of Broadley, 1972 and Visser, 1984b) the nearest other records are about 220 km to the west and about 220 km to the south-east.

Heliobolus lugubris (A. Smith 1838)

Bushveld Lizard

Eight specimens: Emono (NMB R7445-46, FN 4031, 4036); Omuthea (NMB R7442); Onanakali (NMB R7444); Onyaanya (NMB R7443, FN 4009).

This cursorial lacertid is the most commonly encountered in the area, all specimens being found in sandy areas with scattered bushes into which they take refuge. The series of specimens demonstrates the gradual change in colour pattern with increasing size/age. Juveniles (smallest 39 mm SVL, FN 4031) are a blackish colour both ventrally and dorsally, with large white spots on the back. With increasing SVL the black is replaced with a grey-brown and both median (most distinct) and dorso-lateral stripes become more prominent. The largest specimens (largest 54 mm SVL, NMB R7442) collected have grey backs, the black remaining on the flanks and in the form of bars between the stripes, while only a patch of black remains mid-ventrally on the whitish belly. The upper surfaces of the limbs are decorated with white spots, these being most prominent in young lizards. In all specimens examined the

median stripe divides at the level of the forelimb insertion, each fork ending at the back of the head posterior to the parietals.

DISCUSSION

This paper represents a small contribution to our knowledge on the lizards of Owamboland, documenting new distribution records for nine species, namely one gekkonid, three agamids, two scincids and three lacertids (including a northerly range extension for *Pedioplanis lineocellata*). Three size classes of *Mabuya striata wahlbergii* were apparent on the basis of shared colour patterns and microhabitat utilization.

Apart from the lizards discussed above, a few additional reptiles and frogs were observed. A large *Gerrhosaurus* (? *nigrolineatus*) was observed in a sandy clearing between bushes in the Elundu area; the only other congeneric species recorded from the area is *G. multilineatus* Bocage (Mertens, 1955, 1971; Branch, 1988). At mid-day at Onanakali what appeared to be an adult sand snake (*Psammophis* sp.) was observed grasping and constricting a medium sized *Agama a. aculeata* at the edge of a thorn bush. It released the lizard when disturbed, but a few minutes later the same scenario presented itself on the opposite side of the bush, both participants again escaping capture. At Onhinda what appeared to be a large spitting cobra, *Naja nigricollis nigricincta* Bogert, was seen entering a hollow in the trunk of a large mopane tree. Numerous *Cacosternum boettgeri* (Boulenger) and a lesser number of *Tomopterna cryptotis* (Boulenger) frogs were found in cracks in partially dried mud at Emono; while a large adult *Bufo garmani* Meek was observed at Ohakweenyanga.

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Appendix 1: Localities, with map co-ordinates (quarter-degree units in parentheses), for lizards collected and observed in Owamboland.

Ehama	17°49'S,	15°43'E	(1715DC)
Elundu area	17°28'30"S,	16°33'E	(1716BC)
Emono (2 km SW of Onayena)	17°58'S,	16°11'E	(1716CC)
Ohakweenyanga (near Oshinyadhila)	17°49'S,	15°47'30"E	(1715DD)
Omuthea (near Onyati)	18°12'15"S,	16°23'E	(1816AB)
Ompundja	17°57'30"S,	15°40'E	(1715DC)
Omuulu	17°30'20"S,	16°10'E	(1716CA)
Onanakali	18°11'S,	16°22'E	(1816AB)
Onandi	18°07'30"S,	16°20'E	(1816AB)
Onhinda	17°38'S,	16°30'45"E	(1716DA)
Onyaanya (30 km SE of Ondangwa)	18°04'55"S,	16°17'E	(1816AB)
Oshinadhila (= Oshinyadhila)	17°50'S,	16°46'30"E	(1716DD)
Oukango	17°28'30"S,	16°17'30"E	(1716AD)

LIFE HISTORY NOTES

African Herp News publishes 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: **SCIENTIFIC NAME**; **Common name** (using Bill Branch's *Field Guide to the Snakes and other Reptiles of Southern Africa*, 1988, for reptiles; and Passmore & Carruthers' *South African Frogs*, 1995, for amphibians, as far as possible); **Keyword** (this should be one or two words best describing the topic of the note, i.e. Reproduction, Avian predation etc.); the **text** (in brief English with only essential

references quoted and in abbreviated form); **Locality** (country, province or state, location, latitude and longitude if available and quarter-degree grid unit; elevation above sea level; use metric distances); **Date** (day, month, year); **Collector(s)**; **Place of deposition and museum accession number** (required if specimens are preserved); Submitted by: **NAME**, address in parentheses.

New South African province names must be used.

Notes submitted in an incorrect format/style will be returned to the authors.

ANURA

PIPIDAE

XENOPUS MUELLERI

Tropical Platanna AVIAN PREDATION

On 16 July 1996, while bird watching at the Kumasinga hide, Mkuzi Game Reserve (27°39'S, 32°13'E; 2732CA), KwaZulu-Natal, a pair of Woolly-necked Storks (*Ciconia episcopus*) was observed catching several *Xenopus muelleri*. The pan was drying up and extended some 15 x 10 m in surface area with an average depth of approximately 10-15 cm. The pair of storks worked side by side, systematically searching through the mud. In a period of some 10 min they caught and consumed two water scorpions and one small tilapid fish (cf. *Oreochromis mossambicus*). Suddenly one of the storks jerked its bill sideways and in one movement flung an adult *Xenopus* onto the bank. It was immediately grabbed and manoeuvred in the bill. The platanna kicked desperately, at which time the stork dropped it and repeatedly stabbed it with its bill. This lasted approximately 5 min, after which time the stork picked up the limbless carcass, rinsed it in the pan, and finally swallowed it. The platanna was identified by the bright yellow

colouration of the lower part of the belly and hind legs - characteristic of the species (Passmore & Carruthers, 1995, *South African Frogs - A complete guide*. Southern Book Publishers and Witwatersrand University Press, Johannesburg) - which was clearly visible through the binoculars as the birds were at close range (<6 m). During the rest of the day the pair was observed catching four more platannas in the same manner. Woolly-necked Storks are opportunistic feeders taking any prey small enough to catch and swallow (Maclean 1985, *Roberts' Birds of Southern Africa*, Trustees of John Voelcker Bird Book Fund, Cape Town).

On 17 July 1996 the resident Hamerkop (*Scopus umbretta*) was observed capturing a platanna, with which it flew off as it was quickly approached by the pair of storks. The Hamerkop feeding on platannas is not surprising as Maclean (*op. cit.*) reported that frogs comprise the major part of their diet.

Acknowledgements: Dr W.R. Branch for commenting on the text.

Submitted by: G.V. HAAGNER and A.J.F. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa).

TESTUDINES

TESTUDINIDAE

HOMOPUS SIGNATUS SIGNATUS Namaqualand Speckled Padloper CAPTIVE BREEDING

Published data on the reproduction of padlopers (*Homopus*) are very scarce. Published data on captive breeding results are even more scarce. Two male (carapace length 74.4-84.1 mm, mass 50-70 g) and two female (carapace length 104.0-106.0 mm, mass 140-150 g) *Homopus s. signatus* were collected in September 1995, a few hundred meters south-east of Springbok (2917DB) in Namaqualand, South Africa. In The Netherlands they were housed in an indoor enclosure (120 cm long x 80 cm wide x 60 cm high) in which southern hemisphere climatic conditions prevailed (Table 1). The largest of the two males died on 23 December 1995 without eating voluntarily in captivity. Both females produced one egg each, one being laid on 31 October and the other on 27 November 1995, presumably resulting from fertilization in nature as mating activity had only rarely been observed before then. No nesting behaviour occurred. Both eggs were incubated at constant temperatures (28-32°C) in a mixture of vermiculite and water (1:3 weight-based ratio). Relative humidity fluctuated (30-60%). The substrate was re-moistened after 100 days incubation. The first egg hatched on 27 February 1996; the second egg showed no signs of embryonic development. The appearance of the hatchling was similar to that described by Morgan (1993, *J. Herpetol. Assoc. Afr.* 42: 34). From the first day the hatchling fed on apples, tomatoes, and avives etc.

Following egg-laying the activity levels of the adults decreased and remained low during summer and the subsequent winter, although all adults continued feeding (three times weekly on vegetable matter). Mating activity was observed throughout the year at a low frequency. With rising temperatures during June/July 1996, general activity levels, including mating activity, increased considerably. Daily mating attempts by the male

were observed, but actual copulations were uncommon.

During attempted mating, females were constantly followed by males and occasionally mounted after introductory head bobbing by both sexes. The frequency of mating attempts decreased from the beginning of September. One female produced clutches of a single egg on 22 July and 3 September 1996, without attempting to bury them. The second female produced clutches (single eggs) on 12 August, 19 September and 27 October 1996. This female showed a willingness to bury the eggs, initially by using her forelimbs, and later by means of her hindlimbs. Digging was noticed only in those parts of the enclosure with shallow soil, but high soil temperature due to local heating. All eggs were laid at sites protected by overhanging rock slabs. Eggs were incubated in vermiculite at a daily temperature rhythm (12 h 26°C; 12 h 32°C) as described above. As a result of the daily temperature cycle the relative humidity fluctuated (45-75%). The eggs of the first female hatched on 8 November (carapace length 30.8 mm, mass 7 g) and 24 December 1996. The eggs of the second female hatched on 30 November 1996 and 26 January 1997. The last egg of the second female did not exhibit signs of embryonic development. Hatching tortoises lacked remains of yolk sacs and fed from the first day.

This appears to be the first report of success in the breeding of *H. s. signatus* in captivity, without the female having been collected in a gravid condition from a wild population.

Acknowledgements: I thank Cape Nature Conservation for granting a permit (331/95) to collect *H. s. signatus* in the field. Specimens were exported on CITES permit 281/95C. Furthermore, I thank Dr W.R. Branch and Mr A. de Villiers for critically reviewing the manuscript.

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Table 1: Monthly mean maximum and minimum air temperatures (\pm SE), mean photoperiod, and number of sprayings per week in the enclosure of three adult *Homopus s. signatus*. Temperatures without SE are estimates.

Month	Temperature ($^{\circ}$ C)		Photoperiod (h)	Sprayings per week
	Maximum	Minimum		
January	29.0	18.5	14	0
February	28.0	18.5	14	1
March	26.6 (1.0)	19.0 (0.8)	13.5	1
April	26.1 (0.7)	20.3 (1.4)	12.5	2
May	24.8 (0.6)	19.6 (0.9)	11.6	2
June	24.5 (1.8)	22.1 (1.8)	10.4	4
July	24.5 (1.2)	21.9 (1.1)	10.1	3
August	26.7 (0.8)	22.8 (0.9)	11.1	2
September	28.2 (0.9)	21.5 (1.0)	12.2	1
October	28.9 (0.6)	20.4 (0.9)	13.3	1
November	29.6 (1.8)	19.6 (1.6)	14	0
December	30.0	19.0	14	0

SAURIA

GEKKONIDAE

PTENOPUS GARRULUS MACULATUS

Common Barking Gecko

COURTSHIP AND MATING

One male and three female *Ptenopus garrulus maculatus* of unknown origin were housed individually in terraria, each with a prepared tunnel leading under a piece of bark. The male measured 54 mm SVL + 35 mm tail length = 89 mm total length, while the females measured 55 + 40 = 95 mm, 56 + 37 = 93 mm and 55 + 37 = 92 mm.

Until now no information concerning *Ptenopus* mating has been reported and only one report of captive breeding, for *Ptenopus g. garrulus*, is known (Ulber, 1992, *Tharu* 6[1]: 10). In spring, after a short rest period from February to April (but also in autumn), I introduced a female into the (calling) male's cage. The following behaviour was observed: The male generally remains near the entrance of the burrow while the female moves about in the cage until meeting him. The male then raises its body by straightening its legs; after which the female does the same. They jump slightly and then "kiss" by biting one another's slightly opened

mouths. The female then retreats under the bark shelter, followed by the male, although not always immediately. Mating takes place under the bark, with only one exception this year (Fig. 1). The male bites the female's neck and brings his cloaca into contact with hers. Copulation lasts for less than one minute. Despite several matings with all three females, the only eggs produced were unfertile ones laid this year.

The female vocalizes, emitting a single (occasionally two) soft sound, while the male emits several. In nature, the number of "clicks" varies regionally (Haacke, 1975, *Ann. Transvaal Mus.* 29[12]: 198-243). Calls produced by females are different from those of males: not as loud and of different pitch. It is not known whether or not the female's call is in answer to the male's. The female call is usually produced in response to me making a noise in the room, and this also occasionally applies to the male.

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Submitted by: **F. GIRARD** (202, avenue du Château des Rentiers, 75013 Paris, France).

(24 $^{\circ}$ 21'S, 30 $^{\circ}$ 52'E; 2430BC). The farmhouse had several large *P. bibronii* which outnumbered the local *Hemidactylus*. Both incidences can be confirmed by visitors.

Despite the fact that these lizards are very common in suitable habitat, no records of predation could be traced. *Homopholis* and *Pachydactylus* are both large lizards that feed mainly on insects, particularly grasshoppers (Branch, 1988, *Field Guide to the Snakes and other Reptiles of Southern Africa*, Struik, Cape Town).

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Submitted by: **G.V. HAAGNER** (P.O. Box 702, Hoedspruit 1380, South Africa).

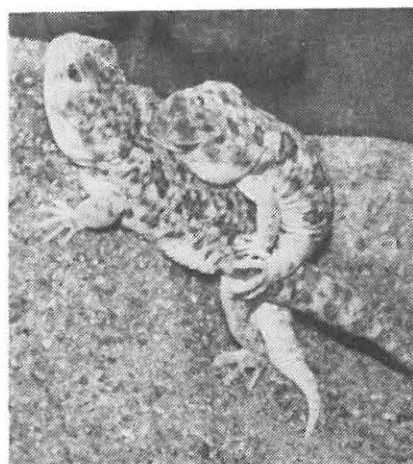


Figure 1: Mating pair of *Ptenopus garrulus maculatus*, male on top. (photo: F. Girard)

SAURIA

GEKKONIDAE

HEMIDACTYLUS MABOUIA

Tropical House Gecko

PREDATION

On 14 December 1990 an adult *Homopholis wahlbergii* was observed catching and consuming an adult *Hemidactylus mabouia*. This happened at approximately 20h30 on the wall of a thatch-roofed house at the Manyeleti Game Reserve, Mhala district, Mpumalanga Province (24 $^{\circ}$ 38'S, 31 $^{\circ}$ 28'E, 2431CB). The house was home to two adult *Homopholis* and a large number of *Hemidactylus*, which congregated around the outside lights at night to feed on insects.

On 25 January 1997 an adult *Pachydactylus bibronii* was observed swallowing a subadult *H. mabouia* on the farm Glencoe 210, Phalaborwa district, Northern Province

PACHYDACTYLUS BIBRONII

Bibron's Gecko

TRANSLOCATION

On 14 October 1996, several large cardboard boxes were transported from the farm Glencoe 210, Phalaborwa district, Northern Province (24 $^{\circ}$ 21'S, 30 $^{\circ}$ 52'E; 2430BC) to a small-holding south of Johannesburg-Kliprivier plots, farm Olifantsvlei 322, Westonaria district, Gauteng Province (26 $^{\circ}$ 21'S, 28 $^{\circ}$ 56'E; 2628BD). Whilst off-loading the cargo a subadult (49+43=92 mm; 5,3 g) *Pachydactylus bibronii* was found hiding in one of the boxes. The boxes were stored in a large farm shed which has a thriving population of these geckos. The gecko was caught, preserved and deposited in the herpetological collection of the Port Elizabeth Museum (PEM R12501).

This incident indicates how easily lizards, particularly geckos, are transported between localities. *P. bibronii* is widespread throughout the former "Transvaal" province, with a few scattered records in Gauteng Province, but has not been reported south of Pretoria (Jacobsen, 1990, *A herpetological survey of the Transvaal*, Ph.D. thesis, University of Natal, Durban). The colonization of suitable habitat by geckos has been documented in KwaZulu-Natal by

Bourquin (1987, *Lammergeyer* 38: 12-14), Free State and Eastern Cape provinces by Haagner & Branch (1996, *African Herp News* No. 25: 44) and has involved the smaller gecko species *Hemidactylus mabouia* and *Lygodactylus capensis*. This appears to be the first report on accidental translocation of *P. bibronii*. Whether this specimen would have survived the harsh winters is questionable, but as the cardboard box was moved into and stored in a garage, it seems possible.

Acknowledgements: Dr W.R. Branch for commenting on the text.

Submitted by: G.V. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa).

AGAMIDAE

AGAMA ETOSHAE

Etosha Agama

SUMMER DIURNAL ACTIVITY

Observations on a group of 16 *Agama etoshae* were carried out at Ompundja (17°58'S, 15°40'E; 1715DC) in the Owambo district of northern Namibia on a cloudless day in January 1995, with a slight breeze blowing. The study group of four males, eight females and four juveniles occupied a flat, sandy area measuring 26 x 36 m, with a burrow system having 20 entrances. The area is situated in seasonally flooded grassland (Claassen & Page, 1978, *Ontwikkelingsplan vir Owambo*. Verslag van die Instituut vir Beplanningsnavorsing, Universiteit van Stellenbosch) with a few tufts of grass and three scattered defoliate bushes. Males and females were easily identified on the basis of the breeding colouration of their gular areas. In males the gular area is bright yellow in colour with a centrally-situated black patch, while in females it is uniformly bright orange in colour. Small individuals lacking gular colouration were classified as juveniles. Activity recordings, from a distance of approximately 30 m, using 8 x 30 Nikon binoculars, started at 07h45 and ended at 18h30. The number of males, females and juveniles visible in the area was recorded at 15 min intervals. Ambient air temperature (T_a) was measured simultaneously at a

height of about 1 cm above the sand in direct sun using a Baily-Bat thermocouple thermometer (Sensortek, New York). Data are given as means \pm 1SD and their statistical analysis consisted of Student's *t*-tests following Sokal & Rohlf (1981, *Biometry*, 2nd ed., W.H. Freeman and Co., San Francisco), with differences between means considered significant at $P < 0.05$.

The daily activity pattern of the group was bimodal. A peak phase occurred in the morning ($28.5^\circ\text{C} \leq T_a \leq 42.6^\circ\text{C}$; mean $36.4 \pm 3.4^\circ\text{C}$, $n = 14$ recordings) followed by a trough phase during the middle of the day ($40.8^\circ\text{C} \leq T_a \leq 47.6^\circ\text{C}$; mean $43.4 \pm 1.9^\circ\text{C}$, $n = 15$ recordings) and a second peak phase in the late afternoon ($36.3^\circ\text{C} \leq T_a \leq 44.1^\circ\text{C}$; mean $39.9 \pm 2.3^\circ\text{C}$, $n = 10$ recordings). The mean numbers of individuals recorded during the two peak phases did not differ significantly [8.4 ± 1.9 (morning) vs. 9.6 ± 2.5 (late afternoon), $P > 0.05$]. Both these figures were, however, significantly greater than the mean number of 3.9 ± 0.8 individuals recorded during the trough phase ($P < 0.001$, in both cases). In 80% of trough phase intervals and 70% of second peak phase intervals, individuals were observed perching in vegetation. In the former phase the mean percentage of individuals in vegetation per interval was significantly greater than that in the latter phase ($65.3 \pm 25.7\%$ vs. $28.3 \pm 26.0\%$, $P < 0.01$).

These limited observations suggest that *A. etoshae* is social during the breeding season. Solitary individuals noticed or collected elsewhere in Owamboland at that time (summer) may therefore have been drifters. Steyn, Finkeldey & Buys (1963, *Cimbebasia* 6: 12-15) stated that *A. etoshae* lives in isolated colonies, some of which are quite large (91.4 x 228.6 m). They did not, however, mention the time of year when their observations were carried out or provide information about the spacing of individuals in these colonies. The large number of breeding males and females in the present study group suggests that the species may be polygamous, but in the absence of any obvious intrasexual agonistic behaviour, the type of polygamy could not

be established. The tendency of individuals to climb into vegetation when ambient air temperature was high may have been a way of taking more effective advantage of the cooling effect of the prevailing breeze (instead of entering the cool burrow system).

Acknowledgements: I thank my students Lysias and Natangwe Amupathi (University of Namibia) for assistance during the observations. Drs G. Alexander and W.R. Branch are thanked for critically reviewing the manuscript.

Submitted by: N.J.L. HEIDEMAN (Department of Herpetology, National Museum, P.O. Box 266, Bloemfontein 9300, South Africa).

CHAMAELEONIDAE

CHAMAELEO DILEPIS DILEPIS

Flap-necked Chameleon

SIZE

During a visit by Prof. Thomas Madsen from the University of Lund, Sweden, we went out at night on 17 March 1988 searching for chameleons in the Manyeleti Game Reserve, Mhala district, Mpumalanga Province. Several adult chameleons were seen and at 20h14 a very large specimen was noticed in the spotlight approximately 4.5 m up in a Buffalo Thorn Tree (*Ziziphus mucronata*) near the main camp (24°38'S, 31°28'E; 2431CB). It was an adult female *Chamaeleo d. dilepis* measuring SVL 193 mm, tail length 173 mm, total length 366 mm, mass 85.8 g. She was maintained live in a large walk-in cage with shrubs and soil at the Manyeleti Reptile Centre. On 30 March she was noticed sitting on the ground, apparently very weak. She appeared to have just laid a clutch of eggs, as she was very thin, but no evidence could be found of any nest hole dug in the soil. She died later that day and was deposited in the herpetological collection of the Transvaal Museum (TM 67621).

This appears to be a new record size for *C. d. dilepis*. Schaefer (1971, *Mems. Inst. Invest. Cient. Mozamb.* 11[A]: 169-176) reported a

353 (181+172) mm *C. dilepis* that was accidentally transported from Mozambique in a railway truck. The largest reported by Fitzsimons (1943, *Transvaal Mus. Mem.* 1: 151-174) measured only 290 mm, while Cott (1934, *Proc. Zool. Soc. Lond.* 1934: 145-173) recorded 300 mm as the maximum for Mozambique. In a recent survey of the former Transvaal province, Jacobsen (1990, *A herpetological survey of the Transvaal*, Ph.D. thesis, University of Natal, Durban) reported the largest *C. dilepis* from Phayizani to have a SVL of 180 mm. He probably overlooked the Manyeleti specimen, already accessioned in the Transvaal Museum collection at that time.

Acknowledgements: Thanks to Thomas Madsen and Rubin Els for pleasant field assistance; and Dr W.R. Branch for commenting on the text.

Submitted by: G.V. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa).

SCINCIDAE

MABUYA STRIATA STRIATA

Striped Skink

AVIAN PREDATION

On 4 October 1996 my attention was drawn to a group of noisy Black-eyed Bulbuls (*Pycnonotus barbatus*) in a large marula tree (*Sclerocarya caffra*) on the farm Roodepan 223, Potgietersrus district, Northern Province (23°26'32"S, 28°29'38"E; 2328AD). My first reaction was that the birds were mobbing a snake, but investigation revealed a perching adult Pearl-spotted Owl (*Glucidium perlatum*) eating an adult *Mabuya s. striata*. The lizard's head and torso were already eaten, but identification (from a distance of approximately 5 m) was based on the grey-brown back with distinct dorso-lateral stripes. These lizards are common in the area and are regularly seen around the house. Pearl-spotted Owls are opportunistic feeders (Steyn, 1982, *Birds of Prey of Southern Africa*, David Philip Publ., Cape Town), and with partly-diurnal habits, they can easily optimise abundant lizard prey.

On another occasion, on 5 December 1996, I was observing a basking subadult *M. striata* through the window of our house on the farm Glencoe 210, Phalaborwa district, Northern Province (24°21'S 30°52'E; 2430BC) when a Brown-hooded Kingfisher (*Halcyon albiventris*) dived down and grabbed it. The kingfisher perched in a nearby tree and killed the lizard by repeatedly hitting it on the branch (approximately 5 min), after which it was swallowed head first. The lizard's attention was distracted and it was staring at my movement behind the window. This possibly enabled the kingfisher to approach unnoticed as the lizards are normally very quick to withdraw at any potential threat. Brown-hooded Kingfishers are opportunistic birds that take a wide variety of prey, including lizards (Maclean, 1985, *Roberts' Birds of Southern Africa*, Trustees of the John Voelcker Bird Book Fund, Cape Town).

Very few predation records have been reported for this common species, and these refer mainly to snakes (De Waal, 1978, *Mem. Mus., Bloemfontein* 11: 1-160). Branch (1976, *J. Herpetol.* 10[1]: 1-11) reported *M. striata* to be the most commonly encountered lizard in the gut of *Lycophidion capense*, while Pienaar, Jacobsen & Haacke (1983, *Reptiles of the Kruger National Park*, National Parks Board) also reported this species in the diet of the same snake.

Acknowledgements: Johan and Ilse de Kock are thanked for their kind hospitality. Dr W.R. Branch is thanked for commenting on the text.

Submitted by: G.V. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa).

SERPENTES

TYPHLOPIDAE

TYPHLOPS BIBRONII Bibron's Blind Snake SIZE

A large female *Typhlops bibronii* was collected from the superficial layers of a

small termite nest situated at the border of riverine thicket and *Acacia karroo* savannah near a small tributary of the Mvubukazi River, West Bank, East London, Eastern Cape Province (33°04'S, 27°52'E; 3327BB; 25 m a.s.l.). It measured 484 (477+7) mm, had a maximum diameter of 15 mm two-thirds along the body, and weighed 60.2 g. The female was gravid with seven developing ova (maximum size 12.5 x 5 mm) in the left oviduct and four ova in the right. Extensive abdominal fat deposits were present. The specimen is deposited in the Port Elizabeth Museum herpetological collection (PEM R12575).

This specimen appears to be the largest recorded for the species, slightly exceeding an unsexed specimen (TM 3874) measuring 466 (459+7) mm from Bethal, Mpumalanga Province (2629BC) recorded by Broadley (1990, *FitzSimons' Snakes of Southern Africa*, rev. ed., Delta Books, Johannesburg, 386 pp.), and a female of 476 (468 + 8) mm from KwaZulu-Natal (Yeadon, 1991, *J. Herpetol. Assoc. Afr.* 39: 23). Both these specimens, however, are exceeded by another large specimen (PEM R1328) from Lothair, Mpumalanga Province (2630AD), with a total length of 477 (470+7) mm. It is a mature female with small (5-8 mm) ova in the oviducts. The largest size recorded by Jacobsen (1990, *A herpetological survey of the Transvaal*, Ph.D. thesis, University of Natal, Durban, 1621 pp.) during his survey was 351 mm SVL for a gravid female from Loopfontein, Mpumalanga Province (2530DA). The largest recorded male is 302 (296+6) mm for a Tafelberg, Free State Province, specimen (Bates, 1992, *The herpetofauna of the Orange Free State - with special emphasis on biogeographical patterning*, M.Sc. thesis, University of Natal, Durban, 429 pp.). It appears evident that *T. bibronii* exhibits sexual dimorphism in size, with females growing considerably larger than males.

Submitted by: W.R. BRANCH (Department of Herpetology, Port Elizabeth Museum, P.O. Box 13147, Humewood 6013, South Africa).

COLUBRIDAE

MEHELYA CAPENSIS CAPENSIS Cape File Snake SIZE

On 4 April 1987 an adult female *Mehelya capensis capensis* was caught at a field staff member's house near the main camp, Manyeleti Game Reserve, Mhala district, Mpumalanga Province (24°38'S, 31°28'E; 2431CB). She was kept in captivity and fed well on road-killed reptiles, including *Dasyplectis scabra*, *Dispholidus typus*, *Naja mossambica*, *Gerrhosaurus nigrolineatus* and even a young *Varanus albigularis*. Several attempts to mate her with a smaller male from the same area were unsuccessful, and on 7 March 1988 she died of unknown causes. A post-mortem revealed large fat deposits in the body cavity and an enlarged liver. At the time of death she measured SVL 1612 mm, tail length 141 mm, total length 1753 mm. Unfortunately, due to her large size and the hot lowveld climate, the preservation process was insufficient and the middle section of the body decomposed. Nevertheless the head was deposited in the herpetological collection of the Transvaal Museum (TM 67536).

The previous maximum size for a female of this species is 1500+125=1625 mm (Broadley, 1983, *FitzSimons' Snakes of Southern Africa*, Delta Books, Johannesburg). Jacobsen (1990, *A herpetological survey of the Transvaal*, Ph.D. thesis, University of Natal, Durban) reported the largest "Transvaal" specimen to have a SVL of 1245 mm. The late Hennie Erasmus reported a female exceeding 6 feet (1,8 m), but this was not verified.

Acknowledgements: I wish to thank Wulf Haacke and Stephanie Ritter for the use of facilities and the herpetological collection at the Transvaal Museum; and Dr Bill Branch for commenting on the text.

Submitted by: G.V. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa).

DUBERRIA LUTRIX LUTRIX Common Slug Eater REPRODUCTION

On 19 December 1996 an obviously gravid female *Duberria l. lutrix* measuring 290+75 = 365 mm was collected at Botha's Hill Railway Station, (29°45'13"S, 30°44'41"E; 2930Dc2; 740 m a.s.l.), KwaZulu-Natal, South Africa by Mike Moon, and kept alive by me for observation. On 16 January 1997, 13 neonates were found to have been born overnight, with a coiled up but dead and dehydrated 14th neonate (70+19 = 89 mm) found under a stone in the container. The latter had probably been born prematurely some days earlier. One neonate (84 + 25 = 109 mm) was preserved as a voucher specimen (R.B. Yeadon private collection, RY1004 & RY1005), two were given to other snake keepers where they are feeding on small snails and slugs, while 10 were released. The mother is still alive. Although Marais (1992, *A Complete Guide to the Snakes of Southern Africa*, Southern Book Publishers, Halfway House) notes a maximum of 15 babies (length 80-100 mm), both Broadley (1983, *FitzSimons' Snakes of Southern Africa*, Delta Books, Johannesburg) and Branch (1988, *Field Guide to the Snakes and other Reptiles of Southern Africa*, Struik, Cape Town) state that females produce litters of up to 12 young (length 80-90 mm).

Submitted by: R.B. YEADON (P.O. Box 42, Link Hills, 3652, South Africa).

MACRELAPS MICROLEPIDOTUS Natal Black Snake FEEDING BEHAVIOUR

On 15 February 1997, at Forest Hills, Kloof (29°45'09"S, 30°49'58"E; 2930Dd1, 520 m a.s.l.), KwaZulu-Natal, South Africa a *Macrelaps microlepidotus* measuring about 90 cm was observed emerging from thick bush on an adjacent vacant plot and moving towards a partially ant-eaten and decomposing golden mole lying in bright sun on a recently mowed lawn. After a short investigation of the mole with its tongue, the

snake began to swallow it head first. This proved to be difficult as the flesh on the mole's head had been removed by the ants, leaving a stiff, protruding skull with sharp edges. The sun apparently proved to be too hot, but the snake managed to pull the mole backwards into a shady area. After about 45 min the snake managed to get its jaws over the skull and stiff spade-like front legs of the mole, the remainder of the body then taking only about 15 min to swallow. The snake apparently detected the decomposing mole from at least 10 m away, but was prepared to move into the hot sun to get to it. It is generally believed that wild snakes eat only live, moving animals, certainly not something which is decomposing and "smelly". I was able to lie down on the lawn next to the mole and snake, and observe the entire event from a distance of about 30 cm. The snake ignored me completely, except when I accidentally touched it while trying to obtain a rough length measurement using a piece of long grass. The snake was not collected but allowed to move back into the bush from where it had come.

Submitted by: R.B. YEADON (P.O. Box 42, Link Hills 3652, South Africa).

PHILOTHAMNUS NATALENSIS
OCCIDENTALIS

Western Green Snake
SIZE

During November 1995 a large male *Philothamnus natalensis occidentalis* was captured at the Mariepskop picnic site, Transvaal Drakensberg, farm Magalieskop, Pilgrim's Rest district, Mpumalanga Province (2430DB; 24°37'S, 30°53'E; 1550 m a.s.l.). The snake was maintained at the Swadini Reptile Park where it died of unknown causes during March 1996. At death it measured SVL 788 mm, tail length 403 mm, total length 1191 mm; mass 110,8 g. Scutellation as follows: ventrals 164, subcaudals 119 (smooth), upper labials 8 (4th and 5th entering orbit), first five pairs of lower labials in contact with anterior

sublinguals, preocular 1, postoculars 2, temporals 2+2, tail tip truncated. The colour (in preservative) was uniform olive-grey above and yellow-green below. The hemipenes were everted and the snake deposited in the herpetological collection of the Port Elizabeth Museum (PEM R12481).

This specimen represents a new maximum record size for the subspecies. Jacobsen (1990, *A herpetological survey of the Transvaal*, Ph.D. thesis, University of Natal, Durban, 1621 pp.) noted that the largest "Transvaal" male measured 590 mm SVL, while Broadley (1983, *FitzSimons' Snakes of Southern Africa*, Delta Books, Johannesburg) recorded a male of 950 (615 + 335) mm from the Transkei (now part of the Eastern Cape Province). The Mariepskop specimen thus exceeds by far the previous maximum male size record.

Acknowledgements: Donald Strydom of Swadini Reptile Park is thanked for the donation of the specimen. Dr Bill Branch is thanked for commenting on the text.

Submitted by: G.V. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa).

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taxonomically problematic taxa; and nearest published record/s in km; references to be quoted in text); Submitted by: **NAME**, address (in brackets). Observation records are acceptable only in exceptional circumstances (as in the case of large or easily identifiable reptiles, e.g. pythons, tortoises). Records submitted should be based on specimens deposited in a recognised institutional collection (private collection records are discouraged).

New South African province names must be used.

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ANURA

RHACOPHORIDAE

CHIROMANTIS XERAMPELINA Peters, 1854: Foam Nest Frog; South Africa, KwaZulu-Natal, Durban, Field Street 137 (29°51'20"S, 31°01'15"E; 2931Cc1; 10 m a.s.l.); 4 February 1997; H. Galae; Durban Natural Science Museum, DMA1301. Accidentally translocated subadult. Collector is a butcher who regularly travels to Zululand in his truck to collect meat.

Submitted by: R.B. YEADON (P.O. Box 42, Link Hills 3652, South Africa).

PLEURODIRA

PELOMEDUSIDAE

PELOMEDUSA SUBRUFa (Lacépède, 1788): Marsh Terrapin; South Africa, Free State, Frankford district, Farm: The Ark no. 35 (27°05'S, 28°28'E; 2728AB; 1500 m a.s.l.); 9 November 1996; J.C.P. van Wyk; National Museum, Bloemfontein, NMB R7579. Collected at 10h00 while crossing the R716 road between Oranjeville and Villiers. This record extends the known range in the Free State by about 140 km to the north-east (De Waal, 1980, *Navors. nas. Mus., Bloemfontein* 4[3]: 85-91; Bates, 1992, *The herpetofauna of the Orange Free State - with special emphasis on biogeographical patterning*, M.Sc. thesis, University of Natal, Durban, 429 pp.). The nearest other record is about 150 km west at locus 2627CC in the Potchefstroom district, North-West Province (Jacobsen, 1990, *A herpetological survey of the Transvaal*, Ph.D. thesis, University of Natal, Durban, 1621 pp.).

Submitted by: J.C.P. VAN WYK (P.O. Box 16, Frankfort 9830, South Africa).

TESTUDINES

TESTUDINIDAE

KINIXYS NATALENSIS Hewitt 1931: Natal Hinged Tortoise; South Africa, Northern Province, Orpen camp, Kruger National Park fence line bordering the Hans Hoheisen Wildlife Research Centre (24°28'S, 31°23'E; 2431AD); 21 November 1995; G.V. Haagner and A.J.J. de Kock; Port Elizabeth Museum, PEM R12482. A subadult found early morning while walking in rain in mixed *Terminalia sericea* - *Combretum apiculatum* bushveld (Bredenkamp, 1982, 'n *Plant-ekologiese studie van die Manyeleti Wilduin*, Ph.D. thesis, University of Pretoria). Data on specimen: plastron length 52,2 mm, plastron width 46,8 mm, carapace length 60,3 mm, carapace width 54,7 mm, carapacial shields comprise five vertebrals, first the narrowest, third the widest; four pairs of costals, 11 marginals on both sides; supracaudal not divided. The gulars are more than twice as wide as long (combined width 13,0 mm, length 5,1 mm). Pair of humerals in narrow contact with axillaries. Seam of gulars 5.1 mm, seam of femorals 5,2 mm, seam of gular 6,0 mm. Five claws on front, and four on hind, feet. No buttock tubercles; beak tricuspid, although poorly developed.

The species occurs predominantly in the midlands of KwaZulu-Natal, but Boycott & Jacobsen (1988, *Durban Museum Novitates* 14(5): 93-101) reported it from three localities in Mpumalanga Province (formerly "eastern Transvaal lowveld"). Haagner (1992, *Koedoe* 35(1): 129) reported the first known occurrence within the Kruger National Park. The above specimen does not greatly extend the known range of the species, but confirms its presence within the borders of the Kruger National Park, and is only the second specimen known from the Northern Province. Only five specimens of *K. natalensis* have been recorded from the Lowveld region.

Acknowledgements: Dr W.R. Branch commented on the text.

Submitted by: G.V. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa) & O. BOURQUIN (Natal Parks Board, P.O. Box 662, Pietermaritzburg 3200, South Africa).

GEKKONIDAE

PACHYDACTYLUS AUSTENI Hewitt 1923: Austen's Gecko; South Africa, Western Cape province, Vredendal district, on tarred road (R27) near Vredendal (3118DA); 1 November 1995. Male measuring 48 mm SVL + 25 mm tail length (carrot-shaped regenerated tail) = 73 mm total length, found crossing the road at 21h00 on a flat, sandy plain. This species is known to occur on sparsely vegetated coastal dunes (Branch, 1988, *Field Guide to the Snakes and other Reptiles of Southern Africa*, C. Struik, Cape Town). The new locality represents a 30 km easterly (inland) extension of the species' range (see Visser, 1984, *Landbouweekblad*, 30 March, pp. 48, 49, 51, 53). A colour photograph of the live specimen was examined by Dr W.R. Branch (Port Elizabeth Museum) and Mr M.F. Bates (National Museum, Bloemfontein) to confirm its identification.

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Submitted by: F. GIRARD (202, avenue du Château des Rentiers, 75013 Paris, France).

SCINCIDAE

SCELOTES LIMPOPOENSIS LIMPO-
POENSIS FitzSimons, 1930: Limpopo Dwarf Burrowing Skink; Zimbabwe, Beitbridge district, just south of Bubi River Bridge (21°43'S, 30°30'E; 2130DA); 29 June 1989; G.V. Haagner & A.W. Viljoen; A.J. Lambiris Herpetological Collection (AJL 3447). An adult, active in loose sandy soil under a stone in heavily overgrazed lowveld bushveld, ambient temperature 33°C, with no cloud cover and light breeze. SVL 48.5 mm, tail length 39.2 mm (regenerated), forelimb 2.6 mm, hindlimb 8.6 mm. Upper labials 7, lower labials 6, supraoculars 4, supraciliaries 5, subdigital lamellae of fourth toe 10, midbody scale rows 22. Dorsum and sides glossy brown with yellowish dorso-lateral stripes; ventrum yellowish, each scale dark-centred.

The major distribution of this subspecies appears to be the extreme northern part of the Northern Province, South Africa, extending into southern Zimbabwe (Jacobsen, 1987, *Ann. Transvaal Mus.* 34: 371-376). The Bubi specimen is the most north-easterly record, extending the known range by 75 km. Early Zimbabwean records were all from the vicinity of Beitbridge (2229 BA/B). Recently collected material in the Natural History Museum of Zimbabwe extends the range 30 km to the west (Sentinel Ranch, 2229AB, NMZB 11699-700, 11838, 12052) and 25 km to the north (Mtetengwe River Bridge, 2129DD, NMZB 6076). All these specimens were under stones lying on sand.

Scelotes limpopoensis is the eastern-most representative of the western *S. bipes* species group which has a brille in the lower eyelid.

Submitted by: D.G. BROADLEY (Biodiversity Foundation for Africa, P.O. Box FM730, Famona, Bulawayo, Zimbabwe), G.V. HAAGNER (P.O. Box 702, Hoedspruit 1380, South Africa) & A.J.L. LAMBIRIS (Department of Zoology, University of Durban-Westville, Private Bag XS4001, Durban 4000, South Africa).

MABUYA ACUTILABRIS (Peters, 1862): Wedge-snouted Skink; Namibia, Otjinene district, Otjovazandjou omaramba (20°27'42"S, 20°43'44"E; 2020BA); 17 April 1997; W.D. Haacke; Transvaal Museum, TM 80370. Juvenile, SVL = 27,9 mm, tail = 51 mm. In general terms, accepting its youthful condition, this specimen fits the general description of the species (FitzSimons, 1943, *Mem. Transvaal Mus.* 1: 1-528) but has 34 scales round middle of body and dorsal keeling not yet well developed. Unfortunately only a single juvenile individual was found on light grey sand near the bank of a shallow, dry river bed. This record extends the range of this skink by more than four degrees (about 500 km) in an easterly direction if plotted on the latest published map (Castanzo & Bauer, 1993, *Herpetol. J.* 3: 130-135); however, other unpublished records (National Museum of Namibia, Windhoek; no catalogue numbers available) for Mpungu (17°39'S, 18°14'E; 1718CA),

Namutoni (18°49'S, 16°56'E; 1816DD) and Ghaub (19°28'S, 17°45'E; 1917BC) exist from east of Etosha Pan and in Owamboland, which reduces the range extension to about three degrees longitude, or about 330 km (Fig. 1). The entire Otjinene district is very poorly sampled, which is reflected by large bare patches covering this area on distribution maps (e.g. Broadley, 1990, *FitzSimons' Snakes of Southern Africa*, Jonathan Ball & Donker Publishers, Johannesburg). The range of this skink falls largely within the < 300 mm average annual rainfall area. Average annual rainfall is about 400 mm at Otjovazandjou omaramba (locality needs confirmation), while it is in excess of 500 mm at the three additional localities mentioned above.

Submitted by: W.D. HAACKE (Department of Herpetology, Transvaal Museum, P.O. Box 413, Pretoria 0001, South Africa).

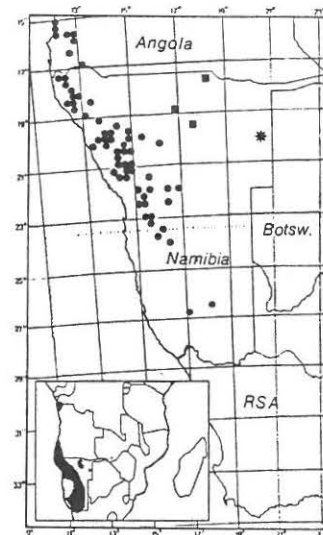


Figure 1: Distribution of *Mabuya acutilabris* according to specimens examined (solid circles; Castanzo & Bauer, 1993, *Herp. J.* 3: 130), the new Otjovazandjou omaramba locality (star) and specimens in the collection of the National Museum of Namibia (solid squares).

MABUYA CHIMBANA Boulenger, 1887: Chimba Skink; Namibia, Epupa district; three localities: i) 6 km E of Etengua (17°28'S, 13°06'E; 1713AC); 19 April 1976; W.D. Haacke; Transvaal Museum, TM 49007; ii) 8 km SW of Etengua (17°30'S, 13°00'E, 1712DB); 22 April 1976; W.D. Haacke; seven specimens: TM 49130-49135, 49217; iii) near Okakuju (1712DD); 14 March 1992; U. Joger; TM 71424. All collected on granite boulders in hilly mopane veld. Broadley (1975, *Arnoldia* 7[18]: 1-16) verified the validity of this species and provided a distribution map on which the most southern record in Angola is at 1513CA, although the record from Rio Coroca (MBL 825) was probably from near the mouth of that river (1511DD) which is slightly further south. At that stage this species was known only from Angola. These records extend the known range by about two degrees (or 250 km) southwards and into Namibia. This species has been listed as occurring south of the Kunene River (Haacke in Branch *et al.*, 1988, *J. Herpetol. Assoc. Afr.* 34: 1-19; Branch, 1988, *Field Guide to the Snakes and other Reptiles of Southern Africa*, Struik, Cape Town) based on the above-listed specimens, but their details have not been published until now. The general description given by Broadley (*op. cit.*) also fits these specimens.

Submitted by: W.D. HAACKE (Department of Herpetology, Transvaal Museum, P.O. Box 413, Pretoria 0001, South Africa).

LACERTIDAE

NUCRAS INTERTEXTA (A. Smith, 1838): Spotted Sandveld Lizard; Zimbabwe, Hwange district, Dete Vlei (1827CA); 9 February 1997; G.S.A. Rasmussen; Natural History Museum of Zimbabwe, NMZB 14. Found freshly killed on a road passing along the ecotone between the dambo and *Baikiaea* woodland. This juvenile resembles the Namibian specimen illustrated by Broadley (1972, *Arnoldia Rhod.* 5[20], pl. iii, fig. 8), with three dorsal rows of cream spots and strong black and cream vertical barring on the flanks from head to groin.

This is the first record of the species from Hwange district. The nearest other records are 190 km to the south-east at Inyokene in Nyamandhlovu district, and 470 km SSW at "Lake" Ngami, indicating that it probably occurs throughout north-eastern Botswana and the Hwange National Park.

Submitted by: D.G. BROADLEY & G.S.A. RASMUSSEN (Biodiversity Foundation for Africa, P.O. Box FM730, Famona, Bulawayo, Zimbabwe).

AMPHISBAENIA

AMPHISBAENIDAE

DALOPHIA ELLENBERGERI (Angel, 1920): Ellenberger's Worm-Lizard; Angola, Cuando-Cubango district, 50 km east of Cuito-Cuanavale (1519BA); 1 April 1988; C.J. McCartney; Port Elizabeth Museum, PEM R4818. An adult female measuring 330+43 mm, midbody diameter 4.7 mm. Head scalation typical, ca. 343 body annuli, 30 caudal annuli, the eighth being the autotomy annulus, 18 dorsal + 12 ventral segments to a midbody annulus.

This specimen was misidentified as *Dalophia pistillum* by Branch & McCartney (1992, *J. Herpetol. Assoc. Afr.* 41: 1-3).

This is the first record of *D. ellenbergeri* from Angola and represents a westward range extension of 325 km from Kalabo in western Zambia, where the species appeared to be endemic to a stretch of the upper Zambezi floodplain extending from Balovale downstream to Lukona Mission. However, this specimen has a short tail, with only 30 caudal annuli, the minimum recorded for the species; only two specimens out of 47 have counts below 35.

Dalophia angolensis Gans, 1976, was distinguished from *D. ellenbergeri* by its more robust build and shorter tail, with only 20-27 caudal annuli (30-45 in *D. ellenbergeri*). Calombe, the type locality for *D. angolensis*, is 375 km almost due north of the locality for PEM R4818, but the Balovale specimen of

D. ellenbergeri is from only 70 km south of the locality for the solitary Zambian specimen of *D. angolensis*. It is possible that when more material is collected from the intervening area the two forms will be found to be linked by a cline. In any case it seems doubtful whether *D. angolensis* is more than a northern race of *D. ellenbergeri*.

Submitted by: D.G. BROADLEY (Biodiversity Foundation for Africa, P.O. Box FM730, Famona, Bulawayo, Zimbabwe).

SERPENTES

COLUBRIDAE

PROSYMNA SUNDEVALLII LINEATA (Peters, 1871): Lineolate Shovel-snout Snake; South Africa, KwaZulu-Natal, Ubombo district, Mkuzi Game Reserve (27°38'S, 32°10'E; 2732CA); 30 April 1980; P. Goodman; Transvaal Museum, TM 62833. A juvenile snake (110+14=124 mm) collected in sandveld woodland. Scutellation: ventrals 141; subcaudals 23; scale rows: head 14, mid-

body 15, vent 13, anal entire; upper labials 6 (3rd and 4th entering orbit); lower labials 8 (first three in contact with chin shields); postoculars 2; preoculars 2; loreal 1; 47 faint dark brown spots on the back and eight on the tail.

This subspecies was known from KwaZulu-Natal from a single specimen collected at Dukuduku by Dr G. van Son in December 1956 (TM 24369). This record was repeated by Broadley (1983, *FitzSimons' Snakes of Southern Africa*, Delta Books, Johannesburg), but Bruton & Haacke (1980, *Studies on the Ecology of Maputaland*, Rhodes University and Natal Wildlife Society, Grahamstown, 560 pp.) did not include this subspecies in their account of the herpetofauna of Zululand. The above specimen appears to be only the second known for Zululand and the KwaZulu-Natal province.

Acknowledgements: I thank Dr W.R. Branch for commenting on the text.

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BOOK REVIEWS

RECENT HERPETOLOGICAL BOOKS

Part 3

All books reviewed by Bill Branch

Port Elizabeth Museum, P.O. Box 13147, Humewood 6013, South Africa

The series *Recent Herpetological Books* is continued here, the previous part having been published in *African Herp News* No. 20 (1993). The books I review this year are a mixed bag, reflecting the explosion of herpetological subjects hitting overseas markets. They include some representatives devoted to the burgeoning herpetoculture market, which I will deal with first, before turning to more specific, scientific monographs.

HERPETOCULTURE LIBRARY SERIES: The popular books that form this series are available from Advanced Vivarium Systems (10728 Prospect Ave, Suite G, Santee, California 92071-4558, USA). I have been advised that members may claim a 50% discount on the retail price if they purchase a minimum of 5 items per title, so it pays to combine with your colleagues and order together. The following three small books form part of the extensive and growing series.

Design and Maintenance of Desert Vivaria
Phillippe de Vosjoli, 1996. ISBN 1-882770-33-1 (soft cover). 64 pp., 59 b/w photos and figs, 26 colour photos in 16 plates, 215 x 215 mm, US\$12.00.

Care and Breeding of Popular Tree Frogs
Phillippe de Vosjoli, Robert Mailoux and Drew Ready, 1996. ISBN 1-882770-36-6 (soft cover). 80 pp., 24 b/w photo, 16 colour photos in 8 plates, 215 x 140 mm, US\$8.50.

Care and Breeding of Panther, Jackson's, Veiled and Parson's Chameleons
Eds. Phillippe de Vosjoli and Gary Ferguson, 1995. ISBN 1-882770-30-7 (soft cover). 128 pp., 35 b/w photo, 29 colour photos in 16 plates, 215 x 140 mm, US\$12.95.

I review these together as they are of similar format and directed towards a similar audience, i.e. the dedicated herpetoculturist who wants to maximize the well-being and breeding of his chosen species. I rank the books for their success and usefulness in the order listed above, and it is not co-incidence that the first and best has a single author. It details, step-by-step, the design of desert vivaria, with sections on the selection and maintenance of suitable plants, the choice of necessary hardware (heating and lighting, and their controls) and ends with lists of suitable captives. This seems rather back-to-front, but isn't, as many different arid-adapted reptiles require basically the same physical environment. However, the main thrust of the book that in America, and perhaps in South Africa, seems somewhat new, is its emphasis on creating naturalistic conditions. This not only increases the aesthetic enjoyment of the display, but can also lead to greater well-being and longevity of captives. Its movement is a reaction to the increasing commercialisation of herps and the high-intensity commercial farming in sterile cages that dominates so much of the American approach. Anyone familiar with Dutch and German attitudes will realise that it is nothing new to them; it just seems finally to be crossing the Atlantic. Much like the author, in fact!

Many of the terraria (desertaria ?) illustrated are simply superb and will inspire those with DIY capabilities. There is also so much superb technology available now that the automation of heating, lighting and air circulation is all possible relatively cheaply (at least in dollar-terms). Given that so many attractive South African lizards and snakes are adapted to the western arid

regions, this small book will certainly be useful to those interested in keeping them in more attractive conditions.

The second volume covers the care and breeding of some of the more popular tree frogs. It is multi-authored, and starts with introductory sections covering the general principles applicable to the acclimation, housing, feeding and breeding of tree frogs. It includes notes on a number of popular species, mostly American hylids and Asian rhacophorids, but all the given information is applicable to the care of larger African hyperoliids. The book ends with specific chapters on the famous Central American red-eyed tree frog (*Agalychnis callidryas*) and two Australasian species, White's and White-lipped Tree Frogs (*Litoria* spp.). In many ways this book is the antithesis of the previous one, as much of it involves discussions on the design and control of high-humidity vivaria suitable for rainforest species. The two books, therefore, complement each another. Other useful short sections cover feeding, stimulation of breeding, and the diagnosis and treatment of diseases. A useful book for those keepers interested in housing and breeding African frogs.

The final booklet on chameleons is the weakest of the three under review. The main problem is that the five sections, two of which are on the veiled chameleon (*Chamaeleo calyptraus*), are written by different authors (more than one for some parts) which has led to duplication, conflicting comments, and different writing styles. All detract from the usefulness and aesthetics of the book. Nonetheless, the book contains a lot of useful information and should help blunt the tremendous and unacceptable mortality of wild-caught chameleons shipped from Madagascar and West Africa. The high intensity care required to breed Parson's Chameleon, the second largest species in the world, is well presented and is obviously a serious undertaking. The most amazing fact is that incubation of the eggs takes from 20-23 months, which must be the longest incubation period for any reptile.

I turn now to larger, more detailed books, starting with two on amphibians.

Frogs

David Badger and John Netherton, 1995. ISBN 0-89658-314-7. Voyageur Press, Inc. P.O. Box 338, Stillwater, MN 55082, USA. 144 pp., 126 colour photos, 29 range maps, hard cover, 260 x 260 mm, US\$35.00.

This colourful, professionally photographed book is a pictorial celebration of frogs. After a brief introduction (five pages), the book continues with two introductory chapters on 'Frogs and People' (10 pages) and 'Physical Characteristics and Behaviour' (38 pages). The main body of the text (67 pages) consists of 37 species accounts. Most are double-page spreads, with six pages devoted (predictably!) to poison dart frogs. Throughout the pictures are exceptional, although some species are over-worked, particularly the red-eyed frog (*Agalychnis callidryas*), with occurs on eight pages, twice on a commercial orchid. Similarly, the *Eleutherodactylus* in a Venus Fly Trap is complete make-believe.

The text is leavened with a liberal supply of quotes, which I suppose is natural as the first author is not a herpetologist, or even a biologist (his other books include 'Celebrate the First Amendment!'). Nonetheless, they are informative, make for easy reading, and are often humorous. Although there is an understandable bias towards American and Neotropical frogs, some African and Asian species are included. Unfortunately many are called only by unfamiliar common names (what species is a pygmy banana frog?), and the taxonomy of others is antiquated. Mistakes include the use of *Bufo carens* and *B. rosei* for toads that have been placed in other genera (*Schismaderma* and *Capensibufo*, respectively) for many years now. Similarly, *Phrynomerus* is still used instead of *Phrynomantis* for frogs here quaintly called 'crevice creepers', but that we know more usually as rubber frogs. What species the Glass large-eyed frog of Ethiopia, Rwanda and Burundi is I know not. It is illustrated several times, and called *Leptopelis bocagi*, but the specimen is

emaciated and looks nothing like the species I am familiar with. No one familiar with this attractive species would have subjected such a sick individual to the trauma of photography.

The map of the Cane Toad, *Bufo marinus*, incorrectly shows an extensive distribution in southern and Eastern Africa, as well as south-east Asia. Although this species has been introduced, with tragic consequences, to both Hawaii and Australia, it is thankfully not present in Africa. We can only hope that this remains so.

This is basically a "coffee-table" volume, designed to generate empathy towards frogs. This seems to be to promote their role as charismatic "rainforest" species that can act as a vehicle to promote public support for conservation. Perhaps it can help slow the precipitous decline of frogs around the world. There is not a lot of science in it, and what there is is flawed, but it is certainly one of the most visually-pleasing herp books I've seen.

A Natural History of Amphibians

Robert C. Stebbins and Nathan W. Cohen, 1995. ISBN 0-691-03281-5 (cloth). Princeton University Press, 41 Williams Street, Princeton, New Jersey 08540, USA. 316 pp., 76 figs, hard cover, 240 x 160 mm, US\$29.95.

This text is the antithesis of the former book. Written by two university herpetologists, it is a comprehensive and succinct review of amphibian biology, without a colour picture in sight! The detailed text, however, is well-illustrated by numerous line drawings of exceptional quality. Anyone familiar with Stebbins' paintings in his field guide to the herpetofauna of western North America will know what to expect.

The layout follows the usually sequence with a brief introduction, followed by eight chapters on the body and senses (2, Skin; 3, Breathing; 4, Limbs and Locomotion; 5, Tail; 6, Nose and Chemoreception; 7, Eyes and vision; 8, Food habits; 9, Ears and hearing), followed by vocalization (10,

Voice), various aspects of physiology (11, Temperature characteristics; 12, Body-water relationships), and then behaviour (13, Protection against predators; 14, Home range and movement; 15, Territorial behaviour and fighting; 16, Homing and migration; 17, Reproduction; and 18, Parental care). The final chapters include a brief, somewhat superficial, "Contributions of Amphibians to Human Welfare", and a detailed discussion on "Declining Amphibian Populations". This is followed by an exceptional bibliography (46 pages of Literature Cited) and a thorough Index.

The chapter on Declining Amphibians should be obligatory reading for all herpetologists, regardless of their interest in frogs. It makes depressing reading, and is highlighted by Stebbins' comment in the preface that if he "... were now to redraw the distribution maps in his (field guide), he would be required to show many ranges with major gaps, sprinkled with question marks. Many of the gaps appear to represent outright extinction of populations over large areas of former ranges." This in a country considered to have an excellent network of conserved areas. A similar situation occurs in the south-western Cape, and what else have we lost in Africa, especially in the poorly surveyed and protected areas in the tropical belt?

Although not as comprehensive as *Biology of the Amphibians* by Duellman & Trueb (1986, McGraw-Hill, New York), this smaller book is an excellent introductory text to amphibian natural history. It is easy to read, summarizes many diverse topics and directs the reader to the source material should he wish for further information. Despite an obvious American bias, I recommend it fully.

Another pair of books, this time on snakes and aimed at beginners.

Snakes in Question: The Smithsonian Answer Book

Carl H. Ernst and George R. Zug, 1997. ISBN 1-56098-648-4 (cloth), 1-56098-649-2 (paper). Smithsonian Institution Press, 470 l'Enfant Plaza, Suite 7100, Washington D.C.

20560, USA. 203 pp., 72 figs, 64 colour photos in 16 plates, soft cover, 255 x 180 mm, US\$24.95.

This is a clever idea. Under five general headings, various possible queries about snake biology are answered. The success of such a book therefore depends upon the extent to which its authors can foresee the most common enquiries. As both authors are noted American herpetologists, they are therefore well able to predict such questions and to formulate simple, concise answers. They succeed admirably, and the book contains a wealth of useful information. As an example, I found the short section on when snakes arose very useful.

The general headings include: 1, Snake Facts; 2, Folk Lore; 3, Giant Snakes: Big and Biggest; 4, Snakebite; and 5, Snakes and Us. The book finishes with four appendices tabulating: classification of snakes, body size, locomotion speed, and number of eggs or babies, of selected species; a final list of herpetological organizations; a glossary; general and subject bibliographies; and taxonomic and subject indices. A 16 page colour insert illustrates colourful representative snakes. The photographs are generally of good quality, although the composition of some lacks impact.

Unfortunately for a book of its provenance and audience, there are a number of silly mistakes and inconsistencies. Kluge (1991) has proposed a number of controversial rearrangements within the Boidae. Perhaps the most extreme, which Ernst & Zug adopt, is the transfer of the Calabar Ground Python from the monotypic genus *Calabaria* to *Charina* (p. 59), to the same genus as the rubber and rosy boas, and along with the sand boas within the Erycinae. If nothing else, this arrangement makes a farce of the common name ground python, as well as combining viviparous and oviparous lineages. Less extreme, although still disconcerting, is Kluge's transfer of all Madagascar boas to the Neotropical genus *Boa*. This includes the Madagascan tree boa, which necessitates a name change to *Boa mandatra*. This has not been followed by

Ernst & Zug, who retain *Sanzinia madagascariensis* (p. 36).

There is confusion over the number of species of *Thelotornis*. The review of venomous colubrids per continent gives only two for Africa (p. 118), listing the Boomslang and only one species of *Thelotornis* (*T. kirtlandii*), even though *T. capensis* is listed (p. 106). In fact, Fig. 16D, labelled *T. kirtlandii*, is also obviously *T. capensis* as it lacks the solid green head of the former, and the claim (p. 117) that *T. kirtlandii* has caused human fatalities is also incorrect; Spawls & Branch (1995, *The Dangerous Snakes of Africa*, Blandford, London, 192 pp.) noted that all documented fatalities attributed to *T. kirtlandii* were in fact caused by *T. capensis*. Whilst it remains likely that *T. kirtlandii* has a dangerous venom, there are no documented fatalities to confirm this.

Similarly, the inclusion of *Tachymensis peruviana* as a potentially dangerous colubrid, whilst excluding Mediterranean *Maloplon monspessulanus*, which has caused well-documented serious envenomation (see Spawls & Branch, 1995), smacks of Nearctic parochialism. The recent well-established generic separation of some of the larger *Vipera*, i.e. *Daboia* for *V. russelli* (e.g. p. 120); *Macrovipera* for *V. xanthina* (pl. 10E) and *V. lebertina* (p. 123), has been ignored, as has the placement of night adders in a separate subfamily (Causinae). Finally, Aparallactinae has been mis-spelt (Aparallactinae, p. 195); there seems little point in calling *Naja pallida* the Mozambique Red Spitting Cobra when it is not found anywhere near Mozambique; and Fig. 3.15 is labelled "Rhinoceros Viper" (*Büis nasicornis*) when in fact it is a Gaboon Viper, albeit with one eye stripe and therefore referable to the West African subspecies *B. g. rhinoceros*.

Despite these mistakes the book is a useful introduction to snake biology for the beginner snake-keeper and high school student. There still remains, however, the niche of an intermediate text on snake biology.

What's Wrong with my Snake ?

John Rossi and Roxanne Rossi, 1996. ISBN 1-882770-35-8. 150 pp., 62 b/w photos, soft cover, 215 x 140 mm, US\$14.00.

This text, written by a veterinarian and his wife, is specifically aimed at the beginner snake keeper, and forms part of the useful Herpetoculture Library series mentioned earlier. It presents, in alphabetical form, the medical problems of captive snakes based on the apparent signs of disease, stress, and inability to acclimatise to captivity. It is well-written, lucid and yet non-technical, but stresses that diagnosis and treatment of illness should be performed by a veterinarian. Being written by one it would, wouldn't it! However, it acknowledges that most owners are unlikely to live close to a veterinarian knowledgeable about snakes, and so the Problem Solution charts and tables of commonly used drugs and dosage regimes are particularly useful. As a last resort they can be shown to your veterinarian, but I wish you luck getting a discount on his fee for educating him!

The book emphasizes that 90% of reptile maladies are related to an improper captive environment, and much of the book deals with spotting maladies and relating them to probable environmental causes. It even includes useful sections on how to recapture escaped snakes, and how to choose a veterinarian. It is well illustrated with numerous black & white photographs. The book is subtitled "A user-friendly home medical reference manual"; that it certainly is and I thoroughly recommend it. If it helped save one snake in every beginner's collection it will have paid for its relatively low price.

The remaining books include three scientific monographs and a monographic field guide. I'm afraid they are all very expensive, and would be even if the Rand was stronger!

The Amphibians and Reptiles of the Yucatan Peninsula

Julian C. Lee, 1996. ISBN 0-8014-2450-X (cloth). Comstock Publishing Associates, Cornell University Press, Sage House, 512 East State Street, Ithaca, New York 14850,

USA. 500 pp., 403 figs, including 185 colour photos in 32 plates, 188 maps, hard cover, 285 x 220 mm, US\$175.00 (R743.00).

The Yucatan Peninsula is that part of Mexico that juts north into the Gulf like a "hitch-hiker's thumb". This superb monographic review of its herpetofauna by Julian Lee completes the studies he initiated in 1972 and continued as a graduate student at the University of Kansas. It is another lavish Comstock-Cornell publication that maintains the excellence of their previous herpetological works, including such classics as Campbell & Lamar's (1989) *Venomous Reptiles of Latin America* and Cogger's 5th edition of *Reptiles and Amphibians of Australia* (1994).

The book starts with a useful introduction to the history of herpetological studies in the Yucatan (13 pages) and ends with an interesting discussion on Mayan ethnoherpetology (19 pages), a very detailed gazetteer (17 pages), an extensive glossary (10 pages), a comprehensive Literature Cited (28 pages), and subject (three pages) and taxonomic (nine pages) indices. Sandwiched between the introduction and ethnoherpetology are the species accounts (378 pages, nearly 2.5 pages per species). These start with details of the original name, type description, type locality, and common name(s) (English and Mexican), followed by sections on Description, Similar species, Distribution, Natural History, Subspecies, and Etymology. All Locality Records are cited in alphabetical order and include museum numbers. A feature of the book are Lee's superb line drawings (over 180 of them). They illustrate every tadpole, display sonagrams of the vocalizations of most frogs, and illustrate salient anatomical features of many of the taxa in the keys. A point map is supplied for every species, as well as six maps locating all the 374 localities listed in the 17 page gazetteer. The colour photos are generally of high standard and split into two sections. The first 8 plates include 24 photographs of diverse habitats throughout Yucatan. The remaining 16 plates of 185 photos illustrate most of the species discussed. The frontispiece is, predictably, the red-eyed frog (*Agalychnis callidryas*)!

Yucatan is 240 000 sq km in size and has a herpetofauna of 182 species, including two caecilians, six salamanders, 35 anurans, two crocodylians, 16 chelonians, 48 lizards and 73 snakes, of which about 14% are endemic. This is relatively depauperate by Central American and Amazonian standards, and in fact it is even less rich than that of the old Transvaal (262 499 sq km, 53 amphibians and 212 reptiles). It displays a common characteristic of Neotropical herpetofaunas, the large percentage of snakes (73 of 182, 40.1%) compared with southern African herpetofaunas (Transvaal, 84 of 265 species, 31.7%; Free State, 36 of 119, 30.0%; southern Africa, 142 of 480 species, 29.6%).

The book is superbly edited and I found no typos or scientific inaccuracies or oversights. I was surprised, however, to read that *Phyllodactylus* was a genus of New World geckos, and wondered where Lee thought the African, European, Sokotran, Australian and Asian species went. Perhaps he'd been talking to Aaron Bauer! I always enjoy finding interesting facts applicable to African herpetology, especially if they are from unlikely sources; I was not disappointed here. The Etymology section in each species account is very comprehensive, and from these I now know that *Mabuya* derives from the West Indian Spanish *mabuya*, meaning "lizard", and that iguana (and thus leguaan) comes from the Arawak word *iwana*, again meaning "lizard"!

A superb book, but a horrendous price; try to borrow a copy (and if you have one, don't lend it out!).

A monograph of the Colubrid Snakes of the genus *Elaphe* Fitzinger

Klaus-Dieter Schultz, 1996. ISBN 80-901699-8-8 (cloth). Koeltz Scientific Books, P.O. Box 1360, D-61453 Koenigstein, Germany. 439 pp., 121 figs, 420 colour photos in 58 plates, 48 maps, hard cover, 310 x 230 mm, DM 220.00.

German speakers may be familiar with the excellent series of 22 articles on rat snakes that Schultz initiated in 1985 in the popular German magazine *Sauria*, and which ran uninterrupted till 1992. They are here finally

compiled, expanded and translated into English to form what is a landmark monographic publication, comparable in many ways to Klauber's "Rattlesnakes".

Like the latter, this is also the work of gifted amateurs (Andre Entzeroth prepared four of the 45 species accounts, and contributed to one other). The English translation by Arno Naude (from Pretoria) is excellent, with only a few examples of poor syntax, grammar and punctuation that often accompany poorer translations. The production is very good, with a stout, bound cover and pleasing dust wrapper. The proof reading is also good, with few typos (e.g. copulatiozn, p. 233), and the layout, font selection and paper quality are all pleasing.

In summary, this handsome book includes: Introduction (four pages), briefly detailing the scope, terminology, methods used etc.; General Species Account (66 pages), being an overview of ratsnakes, including sections on generic synonymy, common names, morphological description, fossil history, systematic relationships, distribution, natural history, reproduction, colour variation, and relationships to man; Species Accounts (251 pages), with extended accounts of the 32 Old World and eight New World species recognized, the text for each including a detailed synonymy, type locality, holotype, description, scutellation, distribution, natural history, husbandry and breeding, and literature, illustrated with excellent line drawings of the head (side and dorsal views), a point distribution map, and diagrams of colour patterns (regional and ontogenetic); appendices of vernacular names (in 38 languages!) and preserved specimens examined (16 pages); bibliography (80 pages), containing 2810 references (!); and a scientific index (eight pages). The 58 plate colour section includes 49 plates detailing colour variation within all of the species, two plates of varied habitats, two plates of natural history, one plate of morphology, one plate of parasites and human abuse, and three plates of preserved specimens of holotypes and rare species.

It should be noted that *Elaphe* is used in its widest sense, incorporating a number of

species usually included in other genera, e.g. *Gonyosoma (oxycephala)*, *Senticolis (triaspis)* and *Bogertophis (roaliae and subocularis)*. The author argues conservatively and correctly that splitting up rat snakes, with the erection or revival of genera for various species, should await a detailed revision of the whole genus. To avoid confusion for readers unfamiliar with the history he should, however, have explained that the name *Elaphe* Fitzinger 1833 is conserved under an ICZN ruling (Opinion 490) and thus has precedence over *Gonyosoma* Wagler 1828. Given the wisdom of Schultz's conservative approach, it is unfortunate that his own speculations on informal groupings within the genus, presented as they are without supporting evidence, seem as subjective and as redundant as those he rejects.

Although no rat snake species is found in Africa, many species are common in captivity. This book will therefore appeal to a wide audience, including African readers. It is a very, very good book, but beware as it comes at a very hefty price (R800+ !!). That's a pity, as it deserves to be in every herpetologist's library.

The Garter Snakes: Evolution and Ecology
Douglas A. Rossman, Neil B. Ford and Richard A. Seigel, 1996. ISBN 0-8061-2820-8. University of Oklahoma Press, USA. 332 pp., 31 figs, 88 colour photos in 15 plates, 28 maps, hardcover, 260 x 190 mm, £51.95 Eurospan.

Natricine snakes, and particularly garter snakes, have consumed a large slice of Doug Rossman's herpetological career, and it is his studies that have brought clarity from the " .. maze known as *Thamnophis* systematics" (Rossman's own words). In the opening chapters of this excellent book, Rossman reviews his and other studies on the taxonomy and evolution of garter snakes. Thirty species are recognized, but there remain systematic problems aplenty, particularly among the 45 subspecies currently placed within 10 of the wider-ranging species. By Rossman's own admission, some of these are probably invalid, and a look at the complexity of the

59 couplet key required to differentiate the 30 species is evidence of these problems. To fully resolve species boundaries requires population studies, and detailed analysis of specimens to determine various arcane features. Try this frightening couplet:

27 InR/NR averaging > 110 %; Prf/In averaging > 115 % *T. ordinoides*

InR/NR averaging < 85 %; Prf/In averaging < 100 % *T. atratus*

InR/NR is the relative length of the internasorostral and nasorostral, and Prf/In the relative length of the prefrontal and internasal!

This book is the first to review the genus since Ruthven's revision in 1908. That is a long time given the pace and intensity of American herpetological research, especially as garter snakes are one of the best studied groups of snakes in the world. Rattlers are their only challengers. The text is more than a dry compilation of detailed species accounts. Garter snakes are abundant in many areas in North America, and their ecology has therefore been extensively studied. The plains garter snake (*T. radix*), for instance, reaches densities of 845/ha in Illinois. Many garter snakes are also undemanding captives and eat a wide variety of prey items, including invertebrates. This has allowed their extensive use in experiments on foraging behaviour, and prey selection and handling, whilst their viviparity has seen them used as "model organisms" in reproductive ecology. The extensive literature on Ecology, Behaviour and Captive Care is reviewed in succinct chapters by Richard Seigel (1) and Neil Ford (2), respectively. The main body of the text is given over to detailed species accounts (to which all authors contributed), and the book finishes with a glossary, literature cited (40 pages) and index.

After reviewing the ecology of garter snakes Seigel notes that much of the success (as defined by distribution and density) of some species, e.g. *T. sirtalis* and *T. elegans*, can be attributed to their extreme ecological plasticity. The intriguing question is how

applicable to African communities are the models and insights based on Palaearctic snakes, particularly *Thamnophis*? It is not even obvious which African snakes are even comparable to garter snakes; green water snakes (*Philothamnus*) seem better candidates than the few African natricines (*Limnophis*, *Natriciteres*, etc.). What Africa needs is a homespun "Rick Seigel" or a younger "Rick Shine" willing to initiate detailed ecological studies on African snakes. It could be a fertile field for a young African herpetologist wanting to make a name.

Amphibians and Reptiles of North Africa

H. Hermann Schleich, Werner Kastle and Klaus Kabisch, 1996. ISBN 3-87429-377-7 (cloth). Koeltz Scientific Books (see above for address). 623 pp. (+ 4-page addendum), numerous figs, 185 colour photos in 63 plates, numerous maps, hard cover, 230 x 170 mm, DM 220.00.

Finally, I look at the only book in this series dealing with Africa, albeit the northern part. Although it comes from the same publisher as that of the *Elaphe* monograph, the book shares few similarities besides price and German authorship. This is the first field guide to the region available in English and it should be a good book as the authors are all experienced field workers with many years familiarity with North African herpetofauna. Despite the title, however, it is not fully comprehensive and deals mainly with the Maghreb (Morocco, Algeria and Tunisia) and Libya, listing the Egyptian herpetofauna but not discussing it in detail.

It is a hefty book, and certainly more than most would willingly carry in the field. It starts with a brief Introduction (six pages), a species list (five pages), summaries of Climates and Vegetation (six pages), Geographic Distribution (26 pages) and Ecological Aspects (44 pages). The detailed species accounts of the herpetofauna of the Maghreb and Libya (468 pages) are packed with information that, depending upon the amount of information available for any particular species, may be listed under 41 different subheadings! This is followed by a systematic list and key to the herpetofauna

of Egypt (seven pages); appendices, including scientific terms, geographic and toponymic terms, and lists of birds and mammals predating on North African amphibians and reptiles (10 pages); scientific, English, French, German and Spanish indices (15 pages); Literature (30 pages); and a four-page addendum that amends the draft of the Moroccan *Chalcides*, which underwent revision after the guide had gone to press. A large colour section (63 plates, 185 photographs) illustrates the species, their tracks in sand, a variety of habitats, and the impact of man.

My criticisms fall into two categories: scientific and aesthetic. Of the first, there are a number of inexplicable oversights, and inconsistencies most of which relate to English primary sources. This makes a change, as it is an oft-noted and valid observation that German literature is too often ignored or overlooked by English-speaking authors.

The checklists of the North African (p. 6) and Egyptian herpetofauna (p. 558) overlook a number of species occurring in Egypt, including *Echis coloratus* and the recently described *Bufo kassasii* (Baha el Din, 1993). The latter has previously been confused with *B. vittatus*, which is now restricted to the environs of Lake Victoria and should thus be removed from the checklists of northern herpetofaunas. The Namibian subspecies *Dasypeltis scabra loveridgei*, listed on p. 492, is poorly-defined and has been invalidated for many years (Broadley, 1983a). The listing of 10 southern African species of *Mesalina* overlooks their transfer to *Pediopanis* some years ago (Arnold, 1980; Broadley, 1983b).

The longevity records of Hughes (1986, 1988) have been overlooked, and include records for *Stenodactylus sthenodactylus* (4 years, 3 months), *Tarentola annularis* (8 years, 8 months, 16 days), *T. mauritanica* (7 years, 5 months, 9 days), *Tropicolotes steudneri* (1 year, 10 months, 11 days) etc.

Quedensfeldtia moerens is listed as a valid species (with the comment that it is not discussed separately) in the checklist of North African reptiles (p. 8), but treated

elsewhere as a synonym of *Q. trachyblepharus* in the detailed account of that species (pp. 246-252). The validation of *Q. moerens* by Arnold (1990) is overlooked, even though it supports the contention of specific recognition.

The authors uncritically accept the existence of three North African races of *Scincus scincus* (*S. s. scincus*, *S. s. cucullatus* and *S. s. laterimaculatus*), ignoring the detailed review of the genus by Arnold & Leviton (1977). The latter authors (*op. cit.*) rejected recognition of North African subspecies pending study of additional material from the poorly collected central Sahara. This problem has still to be addressed and the current publication goes no further in resolving the issue.

In the introduction (p. 4) the authors note that differing views on the taxonomy of *Acanthodactylus* exist; they then proceed ignore a major revision of the genus by the leading expert on lacertids (Arnold, 1983). They follow mainly the arrangement of Salvador (1982), even though problems with this arrangement are discussed by Arnold in an appendix to his paper (Arnold, 1983). It should be noted that Mellado & Olmedo (1990) subsequently supported many of Arnold's conclusions, particularly the rejection of Salvador's (1982) division of *A. pardalis* (with the recognition of *A. bedriagai* and description of *A. busacki*) and *A. scutellatus* (with the separation of western *A. dumerilii*).

The status of Moroccan cobras, dubiously referred to *N. h. legionis* (Valverde, 1989), is overlooked, even though it is discussed in one paper listed by the authors (e.g., Spawls & Branch, 1995). Broadley (in Golay *et al.*, 1993) has synonymised this race with typical *N. haje haje*. Broadley's (1995) validation of the snouted cobra (*N. annulifera*) appeared too late for inclusion in the current volume. The treatment of *Echis* follows Cherlin (1990a,b) despite numerous criticisms of this arrangement. Other recent taxonomic (Golay *et al.*, 1993) and geographic (Largan & Rasmussen, 1993) checklists grapple with these problems, and present different interpretations.

With respect to editorial and design criteria, my comments are influenced by comparison to its stablemate. In contrast to the generally excellent English translation in the *Elaphe* monograph (Schultz, 1995), the translation here is often poor, cumbersome and inaccurate, e.g. "vegetal food" and "animalian food" (p. 361), "... the problematics of..." (p. 399), "mimick" (p. 492) *etc.* The work also lacks the overall "polish" so evident in Schultz's monograph. This is best illustrated by the mishmash of figures, fonts and maps in the introductory chapters (pp. 11-87). The chapters are also not well delimited, either by space or headings.

The numerous text figures (there must be over 1000) are fitted into a wide left hand margin, regardless of their natural orientation. Thus, many graphs, sonagrams *etc.* are presented sideways (landscape orientation), next to, and sometimes between, figures in "portrait" presentation. It gives a jumbled impression. The artists responsible for the illustrations are not credited individually and their different styles often clash. Thus the three views of the head of *Vipera monticola* (p. 555) all have different line thicknesses and styles, suggesting that they derive from different sources. Whilst many of the line drawings are exceptional (e.g. that of *Tarentola boehmei*, p. 268), others are not up to standard (e.g. the dorsal patterns of *Psammotromus microdactylus*, p. 453). The illustration of the hemipenis of *Natrix natrix* appears to have been copied directly from Branch & Wade (1976), but this is not acknowledged.

Overall the book has the feel of conflict between the authors' desires to include everything and the publisher's understandable economic constraints. More discretion was needed on all sides, as this is a lot of text and money for a summary of only 171 species (136 if you exclude those not occurring in Maghreb and Libya). Sadly, the book may have priced itself out of a market.

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RECENT AFRICAN HERPETOLOGICAL LITERATURE: 17

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FROM THE PRESS

DEATHS FROM TOAD POISON ARE RARE, SAYS DOC

(Daily News, 7 February 1996, p. 4)

by

Keith Ross, Chief Reporter

The poison secreted from the glands of many toads found in KwaZulu-Natal can be deadly if swallowed by a small dog - or possibly even a child - says a leading authority on the subject, Dr Angelo Lambiris.

But deaths from toad poisoning are rare, he says, because the poison tastes so awful that the victim is very unlikely to swallow enough to be fatal.

Dr Lambiris, a herpetologist at the University of Durban-Westville, said the secretions of all toads found in KwaZulu-Natal were toxic to some extent.

"And there are four species in the province big enough to have really unpleasant effects on a domestic animal that might chew them," he said.

Dr Lambiris was speaking on the nature of local toads after being asked to comment on a report of two dogs being poisoned in Cape Town.

The report told of how two dogs had become seriously ill after biting a toad. One of the dogs later died. The other recovered.

"Some years ago," said Dr Lambiris, "a woman phoned me from Pietermaritzburg to tell me that her terrier was seriously ill after biting a toad.

"It seems the terrier took just a quick chew of the toad and then dropped it. But that was enough to kill the dog. It was dead within a little more than two hours."

He said a toad's poison was secreted by two large glands behind its head and a number of smaller ones on its back.

The poison, when swallowed, affected the nervous system to the heart and lungs. "It then causes circulatory and respiratory collapse."

Dr Lambiris said that in South Africa the leopard toad was most likely to "knock off an unwary dog or cat".

"It is not necessarily the most poisonous of our toads. But it is the biggest in the country and because of its size it secretes copious amounts of poison."

He said there had also been occasional cases of cattle and sheep picking up poisonous toads and then dying.

"But in 99 cases out of 100 when toads are blamed for stock losses, they are innocent. Something else has caused the deaths.

"I don't think toads are a major cause of stock loss. In 38 years I have come across only three cases of deaths caused by toads."

Dr Lambiris said the secretions of some toads found in various parts of the world, including the United States and South Africa, had hallucinogenic effects.

He said one such toad was found in KwaZulu-Natal, but he declined to identify it. "People who lick the secretions of that toad can go on a hallucinogenic trip.

"But the secretion has such a foul taste that it would take a pretty desperate addict to carry on licking for long enough.

"And there is also the risk of suffering some serious side effects. It is not worth the risk. It could even prove fatal."

Dr Lambiris said that in spite of their noxious nature some benefits could yet stem from the secretions of toads.

Submitted by: F.L. FARQUHARSON (P.O. Box 20142, Durban North 4016, South Africa).

TWO-HEADED SNAKE SEES DENTIST

(Daily News, 7 February 1996, p. 3)

by

DAILY NEWS REPORTERS

A RARE baby two-headed Herald snake which was found in Umkomaas on the KwaZulu-Natal south coast, has been taken to a dentist in Durban to be X-rayed.

The three day old snake was transferred to Durban's Fitzsimons Snake Park where co-owner of the park, Mrs Belinda Smith, arranged for X-rays to be taken so that records can be kept of the bone structure of this tiny rarity.

"This snake is a freak of nature and of great interest to scientists," said Mrs Smith. "We would like to have the internal organs X-rayed as well as the bone structure. Baby snakes are often quite see-through and we think this little Herald may have two hearts as well."

Mrs Smith said she was worried that the 10cm hatchling may dehydrate because of the hot weather, but when they gave it water, both the little heads drank. Today they will see if both the heads eat. Snake park attendants were out late last night looking for tiny frogs to feed it.

Mrs Smith said although she had seen pictures of two headed snakes before, she had never seen a live one in her life. "About 20 years ago we had a preserved two-headed snake in a bottle here at the snake park, but it has long since disintegrated. One of the heads is clearly the dominant one."

Submitted by: F.L. FARQUHARSON (P.O. Box 20142, Durban North 4016, South Africa).

TERRESTRIAL TORTOISES STOLEN

The following report was published in *Bull. Chicago Herp. Soc.* 32(5): 113, 1997:

"On behalf of Mr. John Spence, Director of the Tygerberg Zoopark, Kraaifontein, South Africa, I am reporting a theft of terrestrial tortoises from the well-established terrestrial tortoise breeding group at Tygerberg Zoo. Some 10 animals were removed, presumably during the weekend of March 28-30. The species involved are as follows: *Psammobates geometricus* (1 male and 3 females, one of which carries eggs); *Testudo radiata* (1); *Homopus signatus signatus* (1); *Homopus femoralis* (1); *Kinixys spekii* (2); *Kinixys lobatsiana* (1). The animals were removed

from a chain-link fenced enclosure situated next to the director's residence (in an attempt to prevent theft!!). No visitors to the zoo are allowed inside the enclosure, and the curator of reptiles, Ms. Tamara Harris-Smith, only handles tortoises on special request for photographs . . . [Please] be on the look-out for any of the above animals, and to post this message to other interested colleagues. I will try and stay abreast of developments in this regard and post any information. Kind regards. Dr. Ernst H.W. Baard, Cape Nature Conservation, Private Bag 5014, Stellenbosch 7599 South Africa <baarde@cncjnk.wcape.gov.za> Fax: +21-8871606. April 4, 1997."

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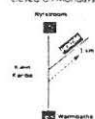
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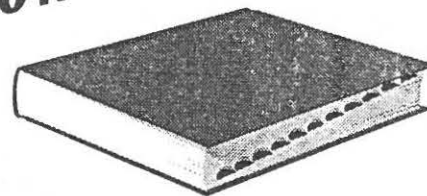


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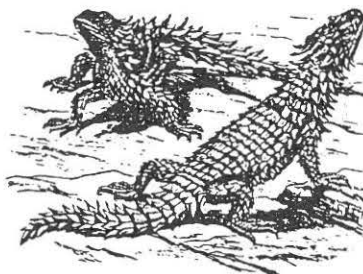


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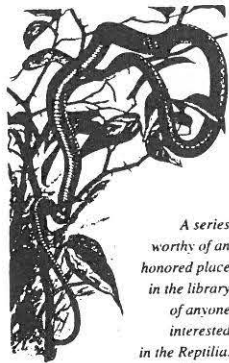
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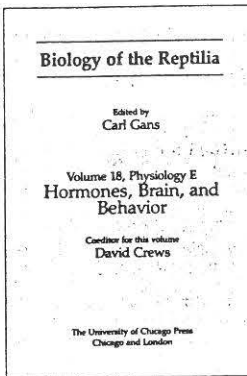
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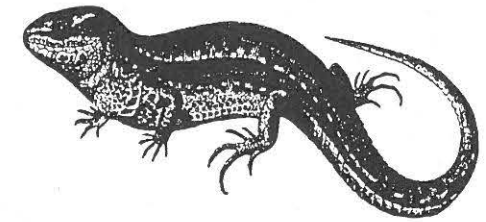
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THE ECOLOGY OF A SYMBIOTIC COMMUNITY



2 Volume Set
Sam Rountree Telford, Jr.
310 pp. Cloth \$64.75
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These volumes describe the population of a Japanese lizard integrated with the separate biologies of 20 symbiotic species. This represents the first attempt to synthesize the biologies of a host lizard and its parasites (symbiotes) from the viewpoint of community ecology.

Sam Rountree Telford, Jr. earned a B.A. in biology from the University of Virginia, an M.S. in biology from the University of Florida, and a Ph.D. in zoology from the University of California, Los Angeles. His work has taken him to such places as Pakistan, Panama, and Denmark. Dr. Telford has written over 150 articles for various research publications on such topics as the ecology of zoonotic/parasitic diseases, the population biology of reservoir animals, and lower vertebrate parasitology and reproductive biology.

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FREE STATE HERPETOLOGICAL ASSOCIATION



On 17 February 1996 the founding meeting of the *Free State Herpetological Association* was held at the National Museum, Bloemfontein. A constitution was unanimously accepted and a committee elected. After some initial changes, the committee now comprises the following: Chairman/Newsletter Editor - Rod Douglas, Secretary - Dave Hayter, Treasurer - Belinda Burger, Public Relations Officer - Joleen Coetzee, Meeting Organizer - Mike Bates, and Show Chairman - Riaan Britz.

Meetings have been held at the National Museum on the second Wednesday of each month. Members have also received a monthly newsletter giving a short report-back on the previous month's meeting, notices of forthcoming events and other matters of interest to members, as well as interesting snippets of information gleaned from a variety of publications. After many months and many proposed concept logos, the membership decided on the logo presented above, in green and gold.

At the founding meeting our Guest Speakers were Mrs Ilsa Robertse and Mr Johan Watson from the Free State Department of Environmental Affairs and Tourism, better known to most as "Nature Conservation". New and enlightened regulations that were

to be incorporated into the new Ordinance were presented, and both Mrs Robertse and Mr Watson expressed the hope that there would be closer co-operation and understanding between their Department and our members. The Free State has most probably been the most conservative of all the South African provinces as far as reptile-related regulations are concerned. With a growing local interest in reptiles the need to create an official channel for communication became a necessity.

The Association got off to a fine start when asked, even before its first General Meeting, to put up a promotional and public awareness stand at the Bloemfontein Show (14-23 March 1996). The stand, comprising ten cages, was beautifully set up and was a great attraction and apparent success as far as the public was concerned. This year we again exhibited at the Bloemfontein Show, winning best display for the hall in which we exhibited. A very successful promotion, with exhibition tanks, was also held at Spitzkop Nursery in September 1996.

Despite being somewhat isolated in the middle of the country, the Committee managed to arrange a variety of stimulating and interesting talks for its members. In our short 14 months of existence, talks, usually

illustrated with slides, have included a range of diverse subjects, e.g. *Amphibians of the Free State, Some South African adders, All legless reptiles are definitely not snakes, Chameleons of the Free State, Successful breeding of the Brown house snake, Keep your herps warm this winter - the hot box, The mysterious flat geckos of southern Africa, Incubating reptile eggs, Crocodiles and dinosaurs, Collecting herps on the equator, and The reptile invaders*. We also managed to present a number of herp-related videos and often set up live displays at meetings with either unusual specimens or specimens related to one of the presentations. A very successful end-of-year function was held in November 1996 at Florisbad Research Station, north-west of Bloemfontein. Members and their families were able to relax in the warm natural spring mineral baths and enjoy the opportunity of getting away from the city. A very pleasant and enjoyable day was had by all.

Despite the Association getting off to a roaring start, there were also some disappointments. These centred around the lack of support from the local universities, the nature conservation authorities, and later on, the public at large. It was envisaged that the Association would provide an important educational forum for students, lecturers, and in particular, nature conservation officers implementing conservation and law enforcement policies, often with little or no knowledge of reptiles or their husbandry. Despite there being large numbers of people in the Free State keeping snakes as pets, usually illegally, we have not been able to attract significant numbers from this sector. It would appear that this group is mainly interested in snakes and has little or no

interest in the broader aspects of herpetology. In addition, it seems as if they are unwilling to conform to a legal permit system, which makes them shy away from any activity which may draw attention to themselves. The idea of having a wheeling-and-dealing-type snake club was not an acceptable alternative for the Committee.

Unfortunately, at a Committee Meeting held on 28 April 1997, it was unanimously decided to suspend all further activities of the Association. With a poor membership renewal for 1997, and a resultant poor attendance at meetings, it was decided that the effort being put in by the Committee did not warrant continuation of the Association. Although still existing in name, the affairs of the Association will most probably be wound up towards the end of the year, unless some constructive suggestions are forthcoming.

Reasons may be many, but with our wealth of southern African herpetofauna, it does seem surprising that there is not a deeper general interest in herpetology. Is it not incongruous that in the United Kingdom, where not a single species of indigenous tortoise occurs, the British Chelonia Group, which represents the interests of but one small aspect of herpetology, is so active with at least sixteen regional branches which are apparently thriving. One is therefore tempted to ask whether South Africans are not either blasé because of their country's considerable herpetofaunal diversity, or simply just not interested?

Rod Douglas
Chairman
 (National Museum, P.O. Box 266, Bloemfontein 9300, South Africa)

WEST RAND HERPETOLOGICAL ASSOCIATION

A new herp association has been formed in Gauteng - the *West Rand Herpetological Association*. Based in Florida, meetings are being held in the lecture theatre of the Florida Park Fire Station. Besides furthering existing interests in reptiles and reptile husbandry the Association is placing considerable emphasis on education in the form of

lectures presented to schools and other organizations.

For further information regarding membership and meetings please contact Mr Mannie Carreira-Fugareu at 011 - 786 4286 during office hours.

Special Bulletin from the Tortoise Trust, London:

**1,000 TORTOISES MURDERED BY SWEDISH CUSTOMS
AND AGRICULTURAL AUTHORITIES****WORLDWIDE BOYCOTT OF SWEDISH GOODS LAUNCHED IN RESPONSE**

The incident began when a Syrian national known as Amro Hassan entered Sweden at Arlanda Airport, Stockholm, with a consignment of 1,000 Horsfield's tortoises (*Testudo horsfieldi*) without the necessary import permit. The Syrian also had a Russian partner in this enterprise. Swedish customs and agricultural authorities immediately impounded the consignment. The animals were housed in a large shed and were provided with neither heat, food or drinking water. They were also sprayed with a cold water hose daily.

At this point, the authorities deviated from standard practice, as neither the Swedish Herpetological Society nor other reptile consultants available to them in Sweden were advised of the seizure or asked for technical advice on how to handle the animals. It is evident that the episode was intended to be handled entirely in secret. Ralph Tramontano, editor of the Swedish Herpetological Society's publication SNOKEN, says that "The Dept. of Agriculture in general is very secretive when it comes to regulating and usually tries to control, excessively in my opinion, who is allowed to know what they are considering".

News of the affair finally leaked out late on Wednesday evening, and a Tortoise Trust member in Sweden E-mailed us at once when it became apparent from news reports that the authorities were: a) keeping the tortoises in unsuitable conditions and b) seriously contemplating killing them all.

The Tortoise Trust responded by immediately posting messages to Internet News-groups, including rec.pets.herps and sci.bio.herp, and simultaneously alerted by E-mail many other contacts around the world to the plight of these tortoises. Early

on Thursday morning we received additional information from a contact in Sweden. The authorities were now claiming that all of the tortoises were "too sick" to survive and that therefore, they should be killed at once. Our effort to save the animals moved into high gear. We faxed a formal offer to the Swedish Embassy in Britain offering to meet the full costs of sending the animals back to Tadzjikistan. We also offered to provide expert advice on maintaining the tortoises properly or on veterinary aspects. We are advised by the Swedish Embassy that this offer was forwarded by fax within 60 minutes to the Minister of Agriculture in Sweden.

Via the Internet, we requested conservationists, tortoise enthusiasts and animal welfare supporters to fax urgent letters to the Department of Agriculture in Sweden pleading for the tortoises to be saved, or at least for a delay whilst a rescue could be organised. At this point, we were contacted by WWF-Sweden, who supported our call to save the animals and who were also desperately trying to persuade the authorities to change their minds. We are aware that many people around the world did fax their concerns to the Swedish authorities: faxes were sent from as far away as Japan, the US, South Africa and Australia. Veterinary surgeons, biologists and ordinary tortoise enthusiasts all pleaded with the authorities to think again.

As more details emerged, it became clear that the authorities were determined to slaughter the entire shipment by freezing them to death. We again faxed an urgent note to the authorities informing them that this is no longer regarded as a particularly safe or humane method of reptile euthanasia. Like our previous requests, this too was ignored.

The media in Sweden were contacted directly, and news of our offer to help find an alternative home or to repatriate the tortoises to Tadzjikistan was widely broadcast. SAS Airlines offered to fly to the tortoises free of charge back to Moscow. The media in Britain were also advised of the increasingly desperate nature of the fight to save these animals. Efforts continued throughout Thursday, well into the night, to publicise their plight and to persuade the authorities to back down. Dozens of faxes and hundreds of E-mails were sent to over 16 countries. Direct pressure on the Swedish authorities in Stockholm was also maintained, but by this time the officials involved had all become "unavailable" and were refusing to return calls.

On Friday morning (24th October) we learned the worst. Operatives of the Ministry of Agriculture had worked all through the night to slaughter the tortoises by freezing them to death in order to avoid the worldwide storm of protest which they knew was rapidly building up. All 1,000 Horsfield's tortoises were now dead.

The lie that the tortoises were sick and that none could be saved was finally exposed when a spokesperson for the Ministry of Agriculture, in a TV interview, attempted to blame "CITES regulations" for the slaughter! It further emerged that only 48 hours earlier, Sweden had considered admitting the tortoises but that they also had "concerns that they might be sold". None of this accords with the present official line that all 1,000 tortoises were too sick to be saved. It now seems that Department of Agriculture officials, headed by veterinarians Karin Cerenius and Ernst Mehnert, were determined from the beginning to press ahead with the slayings to set an example to other potential illegal importers.

It is perfectly true that the tortoises were in poor condition - a state not helped by the abominable conditions they were kept in by the Ministry of Agriculture for a week. It defies belief, however, that 100% of a 1,000 strong consignment were so ill that euthanasia was the only viable option. It has also

emerged that illegal animals of all kinds are ROUTINELY destroyed in Sweden, and that it is very rare indeed for an illegal shipment NOT to be killed.

The Department of Agriculture must also answer as to why no external, independent reptile experts (including specialist reptile veterinarians) were consulted during this incident, and why veterinary advice that their method of euthanasia was inhumane was entirely ignored. They must also answer as to why the killing was carried out in such apparent haste.

Campaign objectives

The Tortoise Trust is appalled at this horrific and utterly barbaric incident which is a disgrace to civilised standards of behaviour towards animals. Everyone who worked so desperately to save the tortoises is extremely upset, traumatised and angered by these events. Tortoise Trust Director, Andy C. Highfield, says "I have worked in animal welfare and conservation for 25 years, and this is absolutely the single worst incident I have ever encountered. I am completely sickened by the action of the Swedish authorities. We must not let the murder of these harmless creatures go unpunished and their deaths must not be in vain. We must ensure that nothing like this ever happens again".

To this end the Tortoise Trust is co-ordinating a worldwide boycott of all Swedish goods and services. Volvo cars, Sandvik tools and Hasselblad cameras are all specific targets of this economic campaign. Swedish timber products are also subject to this boycott which will remain in place until Karin Cerenius, Ernst Mehnert and the Minister of Agriculture, Annika Ahnberg, resign or are sacked.

We also demand a change in the policy towards seized animals. The present practice is barbaric, biologically wasteful and achieves absolutely nothing. Far better that confiscated animals are either returned to the wild or accommodated in zoos or with caring, responsible private keepers. We will

campaign for this in Sweden, and will also press for concerted action throughout the EC to achieve the same objectives.

Action details:

An Internet WWW site is now being prepared to offer full details of this case and all the latest campaign news. Support materials such as bumper stickers, badges and posters are now in preparation.

You can obtain details about the campaign from:

The Tortoise Trust
100105.555@compuserve.com

or by mail from our office,
Tortoise Trust,
BM Tortoise,
London, WC1N 3XX,
England.

You can also write to *The Reptilian* and we will provide you with further information or pass your details to the Tortoise Trust.

A massive petition is being organised for presentation via the EC. The purpose is to embarrass the Swedish government who have a reputation for endlessly lecturing other countries on their alleged human and animal rights abuses (!)

PLEASE write letters of protest to:

Annika Ahnberg
Department of Agriculture,
S 103 33 Stockholm,
Sweden

Tel: +46 8 405 100
Fax: +46 8 20 64 96

Karin Cerenius
National Board of Agriculture,
55182 Jonkoping,
Sweden

Tel: +46 36 155800
Fax: +46 36 715114

Embassy of Sweden (UK),
11 Montagu Place,
London, W1H 2AL

Embassy of Sweden (USA),
600 New Hampshire Avenue NW,
Washington, DC 20037

Copy all protest letters to your local Swedish Embassy or consulate and inform them that you will be supporting the boycott of all Swedish products and services as a direct result of the killing of these tortoises.

What else can you do to help the campaign?

Re-post this notice in as many places as possible. The text may be used in newsletters or in information leaflets. It may be also transmitted and posted by E-mail and we encourage you to translate it into any language.

Take action now . . .

The Reptilian urges all readers to react in the strongest possible way against this outrage and we fully support *The Tortoise Trust* in their campaign. Please write to the addresses supplied and let those involved know that the public are not prepared to tolerate this sort of atrocity. If you are in a reptile club, why not reprint this information in your newsletter?

We intend to highlight matters such as this in the future, so please let us know if you have any campaigns which you feel should be supported or cover-ups which need to be exposed. Adverse publicity can often succeed when other methods of protest may fail.

THE C.J.P. IONIDES MEMORIAL FUND

INTRODUCTION

The C.J.P. Ionides Memorial Fund was launched in 1973 with the aim of erecting an appropriate memorial to the late C.J.P. Ionides, the famous herpetologist and naturalist, who had contributed so much to East Africa, especially the National Museums and Snake Park in Nairobi. Contributions were received from many parts of the world. The plan at the time was to build a special enclosure in the Snake Park portraying an East African ecosystem and displaying relevant species of reptile.

The Fund closed on 1st December, 1973, and at that stage the Trustees (J.H.E. Leakey, J.E. Cooper, C.R.S. Pitman, A. Duff-Mackay and M. Mitton) presented a Report on the Appeal and recorded the names of those who contributed to the Fund or assisted in some other way. The list of names is reproduced below under "Donations".

THE PROJECT

At the time of the Appeal, the plan was to build an Ionides Memorial Cage in the Nairobi Snake Park. It was hoped to erect a cage portraying an East African ecosystem in which reptiles were found and which had some link with Ionides and his interests. The Trustees had in mind an equatorial forest environment, a locality for such impressive species as the Green Mamba (*Dendroaspis angusticeps*) and the Gaboon Viper (*Bitis gabonica*).

Uncertainty over plans to modernise the Snake Park led to delays in implementation and in 1982 alternative uses of the Fund were proposed. In fact, other than the presentation of books to the Museum's Library, no action was taken. In the meantime, however, the Fund was accruing interest.

DONATIONS

Contributions to the Fund were generous and were received from three continents. On December 1st, 1973 when the Appeal closed, a sum of K.Shs. 7,069/70 had been collected.

Contributors to the Fund (in alphabetical order) were as follows:-

1	Mr & Mrs BW Alexander	Kenya
2	Mr & Mrs J Ashe	USA
3	Mr EOA Baumann	Kenya
4	Mrs J Brown	Kenya
5	Dr FH Carcasson	Canada
6	Carnegie Museum	USA
7	Miss M Child	GB
8	Mr & Mrs V Collins	Kenya
9	Dr B Cook	GB
10	Mr & Mrs JE Cooper	Kenya/GB
11	Mr F Delano	USA
12	Mr G de Witte	Belgium
13	Mr & Mrs RC Drewes	USA
14	Mr A Duff-Mackay	Kenya
15	East African Natural History Society	Kenya
16	Mr DWD Elmer	Kenya
17	Mr & Mrs D Embich	USA
18	Prof. C Gans	USA
19	Major I Grimwood	GB
20	Mr Hamish Hamilton	GB
21	Mr JH Heminway Jr.	USA
22	Bishop Trevor Huddleston	GB
23	Lady Huntingdon	GB
24	Kenya Museum Society	Kenya
25	Mr & Mrs JHE Leakey	Kenya
26	Mr RE Leakey	Kenya
27	Dr D Leys	GB
28	Dr A Loveridge	St Helena
29	Mr JG Mavrogordato	GB
30	Mrs M Mitton & Family	South Africa
31	Miss B Morton	Kenya
32	Oakland University	USA
33	Capt. CRS Pitman	GB
34	Mrs ED Polhill	Kenya

35 Mr & Mrs EH Risley	Kenya
36 Mrs SC Savage	GB
37 Mrs J Thompson	GB
38 Mr D Vesey-Fitzgerald	Tanzania
39 Miss JB Walker	South Africa
40 Rowland Ward (East Africa) Ltd	Kenya
41 Mr WF York	USA

In addition to the above, a large number of people assisted with the organisation and planning of this Appeal. In particular Mr & Mrs GC Backhurst, Mrs JE Cooper, Mr N Odhiambo, Mr AR Walker and Mrs CS Webb.

AN UPDATE

On 31 July 1996 a plaque, commemorating the life and work of Ionides was unveiled at the Nairobi Snake Park.

Over 40 people attended the ceremony and these included a number who had known and worked with Ionides in the past, two former Curators of the Snake Park and the present Curator. The event opened with an introduction by Professor John E Cooper who outlined the history of the Ionides Memorial Fund. Professor Cooper explained that those who had contributed to the Fund included a number of institutions and associations, many eminent herpetologists and one of Ionides' biographers as well as his friends and supporters.

Mr Owen Sumbu, the current Curator, welcomed visitors and explained that, with the help of funding from the Kenya Museum Society and others, important changes were being made to the Snake Park and to the accommodation provided for its reptiles. There followed some reminiscences about the life and work of Ionides. These were led by Mr James Ashe, a former Curator of the Snake Park, who recalled Ionides' kindness and generosity, particularly to people who were in trouble. He also reminded those present that Ionides had a breadth of knowledge of subjects in addition to herpetology; he was, for example, a widely-read historian. Mrs Mollie Leakey followed with recollections of Ionides when he was collecting snakes in the Kerio Valley. She

described how he liked to sit in the bush listening to classical music records on his wind-up gramophone! Mr Ashe then introduced Mrs Judith Rudnai who, in the sixties, had been a student at the University of Nairobi and had close professional contact with Ionides. She spoke with warmth about Ionides who had been the guest of honour at her graduation party.

Professor Cooper then introduced Dr Mohammed Isahakai, Director Chief/Executive of the National Museums, who had kindly agreed to unveil the memorial plaque to Ionides. Dr Isahakai said that he was grateful for an opportunity to speak about the Museum and the Snake Park and to expand on plans for their development. He stressed the importance of the Snake Park, particularly in terms of educating local people about the reptiles of East Africa and in giving advice on matters relating to venomous snakes and allied issues. He welcomed the ceremony, not only as a way of commemorating the life of a great naturalist but also because it helped to draw attention to the Snake Park and its work and encourage visitors. Dr Isahakai then unveiled a plaque which read:

C.J.P. IONIDES ("IODINE")

This plaque commemorates the life and work of C.J.P. Ionides who contributed much to the study of reptiles of East Africa and who died in Nairobi on 22nd September 1968. The plaque was provided by the Ionides Memorial Fund with contributions by his friends and admirers.

In closing the ceremony, Professor Cooper paid tribute to those who had attended and to those who had contributed in the past to the Fund. The latter are being contacted and informed of developments. He thanked the Director and staff of the National Museums, who had helped to publicise and film the event, the Curator and staff of the Snake Park who had arranged the venue and Mrs Margaret Cooper who, in addition to giving much support to the establishment of the Fund, had taken photographs of the occasion which would be available in due course for distribution and publicity.

Following the formal proceedings, those present took refreshments together at the Bustani Restaurant in the Museum.

The unveiling of the plaque in Nairobi on 31 July was the first step towards marking in a tangible way the life and work of CJP Ionides. The remainder of the Fund is to be used for a special exhibit within the Snake Park. The ceremony provided an excellent opportunity to remember Ionides and his contributions to herpetology and, at the same time, to give much needed support and publicity to the Museum and Snake Park. The latter has contributed a great deal to East African herpetology in the past and continues to do so.

Further information about the Fund or the life and work of CJP Ionides, can be obtained from:-

Professor John E Cooper, The Durrell Institute of Conservation and Ecology, The University of Kent, Canterbury, Kent, CT 7PD, UK

or
Mr Owen Sumbu, Curator, The Snake Park, National Museums of Kenya, PO Box 40658, Nairobi, Kenya.

17 August 1996

J.E. Cooper

If you know of any person/s apart from those listed above, who contributed to the Fund, please contact Prof. Cooper at the above address.

REQUEST FOR INFORMATION

GEOCHELONE PARDALIS: CARAPACE STRAIGHT LENGTH AND WEIGHT FREQUENCY, SOUTH AFRICA

I wish to look at factors influencing size frequency in different populations of *Geochelone pardalis* within its eastern African range in relation to conservation and sustainable utilization.

If you, or any colleagues known to you in South Africa, have measured *G. pardalis* in field populations, then I earnestly require and would be most grateful for, acknowledged of course, frequencies (numbers not percentages) for carapace straight length at 100 mm intervals (to 99, 100-199, 200-299

etc.) and weight at 1 kg intervals (to 0.99, 1-1.99, 2-2.99 etc.). I also need basic ecological information on the population(s) such as whether in agriculturally developed or human settlement areas, subject to local collection as food, in cattle-grazed zones or in national parks, or areas exposed to bush fires.


Dr Michael R.K. Lambert
Herpetologist/Applied Ecologist
(General Secretary, Societas Europaea Herpetologica)
Environmental Sciences Department
[International direct tel.: +44 1634 883201;
Departmental fax: +44 1634 883232; e-mail:
MIKE.LAMBERT@NRI.ORG]

HERPETOLOGICAL ASSOCIATION OF AFRICA

FINANCIAL STATEMENTS
for the year ended 28 February 1997

The financial statements set out on pages 2 to 4 were approved on 18/6/97 and are hereby signed to that effect.


Chairman


Treasurer

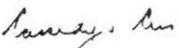
REPORT OF THE INDEPENDENT AUDITORS TO THE MEMBERS OF
HERPETOLOGICAL ASSOCIATION OF AFRICA

We have audited the annual financial statements set out on page 2 to 4. These financial statements are the responsibility of the members. Our responsibility is to report on the financial statements.

We conducted our audit in accordance with generally accepted auditing standards. These standards require that we plan and perform the audit to obtain reasonable assurance that, in all material respects, fair presentation is achieved in the financial statements. An audit includes an evaluation of the appropriateness of the accounting policies, an examination, on a test basis, of evidence supporting the amounts and disclosures included in the financial statements, an assessment of the reasonableness of significant estimates and consideration of the appropriateness of the overall financial statement presentation. We consider that our audit procedures were appropriate in the circumstances to express our opinion presented below.

In common with similar organisations, it is not feasible for the organisation to institute accounting controls over cash collections prior to the initial entry of the collections in the accounting records. Accordingly it was impracticable for us to extend our examination beyond the receipts actually recorded.

Except for the effects of any adjustments which might have been necessary had it been possible for us to extend our examination of cash collections, in our opinion these financial statements fairly presents the financial position of the Herpetological Association of Africa at 28 February 1997 and the results of its operations for the year then ended.



Cassidy & Associates
Chartered Accountants (SA)
Registered Accountants and Auditors
DURBAN

HERPETOLOGICAL ASSOCIATION OF AFRICA

INCOME STATEMENT
for the year ended 28 February 1997

1997 1996

	1997	1996
Income		
Interest	6,860	4,485
Donations	0	3,000
Sale of journals	1,631	296
Subscriptions	18,054	16,580
Symposium	0	3,269
	<u>26,545</u>	<u>27,630</u>

Expenses		
Audit fees	800	550
Froglog	0	203
Journals	7,647	5,287
Newsletters	3,940	7,210
Bank charges	7	18
Office expenses	2,456	1,530
Sundry expenses	0	360
	<u>14,849</u>	<u>15,158</u>

Net surplus for the year 11,696 12,472

BALANCE SHEET - 28 February 1997

Note 1997 1996

Funds Employed

Accumulated funds		
Balance at beginning of year	51,530	39,058
Net surplus for the year	<u>11,696</u>	<u>12,472</u>
	<u>63,225</u>	<u>51,530</u>

Employment of funds

Current assets
UBS - Bloemfontein
UBS - Durban
Standard Bank - Bloemfontein
Volkskas - Durban
Cash on hand

	109	303
	29,900	24,509
	20,403	17,752
	13,899	8,754
	0	488
	<u>64,311</u>	<u>51,806</u>
Less:		
Current liabilities		
Accounts payable	1,085	276
	<u>1,085</u>	<u>276</u>

Net current assets 63,225 51,530

SOUTHERN AFRICAN FROG ATLAS PROJECT

What can we do to protect our frog populations?

An exciting new project, the *Southern African Frog Atlas Project* (SAFAP) has been initiated by Dr Phil Bishop (Wits University), Mr Les Minter (University of the North) and Mr James Harrison (University of Cape Town). This is the first of its kind in the world to be attempted on a national scale and the first frog atlas project on the African continent. This project will enable the conservation status of each species to be determined and will provide baseline information for future monitoring projects.

The project will involve many volunteers from the public sector, who will submit tape recordings of frogs calls, or specimens and visual identifications, to the project co-ordinator for analysis and computerisation. The advantage of frogs is that they produce species-specific calls enabling exact identification, without actually seeing the frog! A compact disc of *South African Frog Calls* has been produced (available from Megatone Productions - Tel. 011 - 8873136) and is a helpful guide for the accurate identification of frogs in the field. Also, an

excellent new book *South African Frogs: A complete guide* by Neville Passmore and Vincent Carruthers is now available, published jointly by Wits University Press and Southern Book Publishers. The book is an updated version of their 1979 edition, and contains several new sections. It also contains many newly discovered species of frogs as well as natural history notes. SAFAP will radically improve our understanding of frog distributions and will focus attention on declining populations. The data will also be valuable for the rational planning of land-use and will support efforts to preserve our wetlands and natural biodiversity. The outcome of this project will be that frog populations can be used in a prognostic manner with respect to the condition of the environment and hence, any impending threat to other indigenous animals.

Any funds donated in support of SAFAP will qualify for tax relief. Cheques should be made payable to the University of the Witwatersrand. If you would like to become involved in this project, please contact: The SAFAP Co-ordinator, Avian Demography Unit, University of Cape Town, Rondebosch 7700, South Africa.

HELP NEEDED: SAFAP IN LESOTHO

Lesotho is a largely mountainous country with a very poorly known frog fauna. Despite the mountainous nature of the country, certain roads are in good condition and can be travelled by car without difficulty. Your assistance in surveying the region's

frogs is urgently required. Anyone interested in collecting data on the frogs of Lesotho for SAFAP is urged to contact Mike Bates, Regional Organizer for Lesotho, SAFAP, P.O. Box 266, Bloemfontein 9300, South Africa (Tel. 051-4479609, Fax. 051-4476273).

HERPETOLOGICAL ASSOCIATION OF AFRICA MEMBERSHIP FEES AS AT 1 JANUARY 1997

AFRICAN MEMBERSHIP

ORDINARY MEMBERSHIP

1 year membership R50.00. Submit in Rand or equivalent U.S. Dollar plus 10%.
3 year membership R135.00. Submit in Rand or equivalent U.S. Dollar plus 10%.

SCHOLARS MEMBERSHIP

1 year membership R35.00. Submit in Rand or equivalent U.S. Dollar plus 10%.

OVERSEAS MEMBERSHIP

DOLLAR PAYMENTS

Note: Please, no U.S. "postal" money orders or U.S. Dollar "Eurocheques". Rand Eurocheques may be acceptable.

1 year membership \$25.00. Submit in U.S. Dollars by personal cheque or money order.
3 year membership \$70.00. Submit in U.S. Dollars by personal cheque or money order.

RAND PAYMENTS FROM OVERSEAS

1 year membership R100.00. Submit in ZAR or Rand by bankers draft or money order.
3 year membership R270.00. Submit in ZAR or Rand by bankers draft or money order.

Owing to numerous banking problems, members are kindly requested not to submit payments directly to any Building Society or Bank account. All payments must be submitted directly to:

The Secretary/Treasurer
Herpetological Association of Africa
P.O. Box 20142
Durban North 4016
South Africa

PLEASE STATE IN WHICH YEAR YOU REQUIRE MEMBERSHIP TO BEGIN. MEMBERSHIP RUNS FROM 1 JANUARY TO 31 DECEMBER OF ANY YEAR. SHOULD MEMBERSHIP BE TAKEN OUT IN THE LATTER PART OF THE YEAR, YOU WILL RECEIVE ALL JOURNALS AND NEWSLETTERS PERTAINING TO THAT YEAR.