## African Herp News

# Newsletter of the Herpetological Association of Africa



#### HERPETOLOGICAL ASSOCIATION OF AFRICA

http://www.wits.ac.za/haa

#### **FOUNDED 1965**

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

#### NEWSLETTER EDITOR'S NOTE

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

COPYRIGHT: Articles published in the Newsletter are copyright of the Herpetological Association of Africa and may not be reproduced without permission of the Editor.

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

#### COMMITTEE OF THE HERPETOLOGICAL ASSOCIATION OF AFRICA

#### CHAIRMAN

**Aaron Bauer,** Department of Biology, Villanova University, 800 Lancaster Avenue, Villanova, Pennsylvania 19085, USA. aaron.bauer@villanova.edu

#### SECRETARY

**Jeanne Tarrant**, African Amphibian Conservation Research Group, NWU. 40A Hilltop Road, Hillcrest 3610, South Africa. jeannetarrant@ymail.com

#### **TREASURER**

**Abeda Dawood,** National Zoological Gardens, Corner of Boom and Paul Kruger Streets, Pretoria 0002, South Africa. abeda@nzg.ac.za

#### JOURNAL EDITOR

**John Measey**, Applied Biodiversity Research, Kirstenbosch Research Centre, South African Biodiversity Institute, P/Bag X7, Claremont 7735, South Africa. john@measey.com

#### NEWSLETTER EDITOR

**Bryan Maritz**, Department of Ecology & Evolutionary Biology, Cornell University, Corson Hall, Ithaca, NY 14853, USA. bryanmaritz@gmail.com

#### ADDITIONAL MEMBERS

**Graham Alexander**, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Johannesburg 2050, South Africa, graham.alexander@wits.ac.za

Michael Bates, Department of Herpetology, National Museum, P.O. Box 266, Bloemfontein 9300, South Africa. herp@nasmus.co.za

William Branch, Curator of Herpetology, Bayworld, P.O.Box 13147, Humewood 6013, South Africa. wrbranch@bayworld.co.za

**Andrew Turner**, Scientific Services, Western Cape Nature Conservation Board, Private Bag 5014, Stellenbosch, 7600. South Africa. aaturner@capenature.co.za

**COVER PHOTOGRAPH:** *Nucras taeniolata* from Groendal Wilderness Area, Eastern Cape Province, South Africa. Photograph by: Werner Conradie. Canon EOS 450D (1/160, F32, ISO 100).

**Barlow**, **Axel** (Bangor University); Baker, Karis; Hendry, Catriona; Peppin, Lindsay (Bangor University); Phelps, Tony (Cape Reptile Institute); Tolley, Krystal (South African National Biodiversity Institute); Wuster, Wolfgang (Bangor University)

### Retracing Pleistocene refugial isolation in southern Africa: a case study of the widespread African puff adder (*Bitis arietans*).

Phylogeographic studies of widespread African savannah mammals have typically found distinct mitochondrial clades in East, West or southern Africa, leading to the hypothesis that these areas served as open habitat refugia during the Pleistocene, isolated from each other by expanding tropical forests during warm and humid interglacial periods. However, comparative data from widespread African reptiles is currently lacking. We present a phylogeographic investigation of the widespread African puff adder (Bitis arietans), a snake that inhabits open habitat formations throughout sub-Saharan Africa. Multiple parapatric mitochondrial clades occur across the current distribution of B. arietans. These include a widespread southern clade that is subdivided into four separate clades, suggesting a history of refugial isolation in southern Africa. We investigated the possible causes of isolation using a species distribution model derived from locality records and environmental data. The results indicate that range reduction and fragmentation occurred in southern Africa during Pleistocene cold phases (glacial maxima) with subsequent range expansion during warmer interglacials. The spatial pattern of range fragmentation also corresponds well with the geographic location of the common ancestor of each clade inferred from the genetic data using a coalescent spatial diffusion model, further supporting the hypothesis of refugial isolation. Interglacial expansion has resulted in secondary contact between refugial populations (mitochondrial clade contact zones). Data from five anonymous nuclear loci reveal male-mediated gene flow across these contact zones. However, the geographic extent of admixture varies considerably between clades, suggesting varying periods of contact between different refugial populations. Overall, our study reveals a complex history of refugial isolation and secondary expansion for puff adders in southern Africa. Critically, although range contraction and isolation in widespread savannah mammals is thought to have occurred during warm interglacials, in southern Africa the sympatric puff adder shows the opposite pattern of range contraction during cooler glacial periods.

\*\*\*\*

Bates, Michael (National Museum, Bloemfontein); Broadley, Donald (Natural History Museum, Bulawayo); Barlow, Axel; Wuster, Wolfgang (Bangor University); Tolley, Krystal (South African National Biodiversity Institute)

Taxonomy and distribution of the African egg-eating snakes of the genus Dasypeltis