

# *African Herp News*

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## HERPETOLOGICAL ASSOCIATION OF AFRICA

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### FOUNDED 1965

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

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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.

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**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).

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**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.

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**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***

Carl Gans (1959, 1964) conducted detailed studies of morphological variation in the pan-African egg-eating snake genus *Dasypeltis*. His taxonomic conclusions were conservative however, and he recognized only six species: *D. scabra*, *D. palmarum*, *D. inornata*, *D. fasciata*, *D. medici* (two subspecies) and *D. atra*. Since then large collections of *Dasypeltis* from throughout the continent have accumulated in various museums. In 2006 Trape & Mané reviewed the genus in West Africa and described three new species: *D. confusa*, *D. sahelensis* and *D. gansi* (two subspecies); and another new species from this area is currently being described (S. Trape pers. comm.). We have initiated morphology-based revisions of *Dasypeltis* in the W half of Southern Africa, E half of Southern Africa, central Africa, and NE Africa & SW Arabia. A separate molecular phylogenetic study (mitochondrial and nuclear genes) has now been extended to provide pan-African coverage of the genus. Where possible we have used both morphological and genetic data to resolve taxonomic problems. Preliminary phylogenetic results indicate that apart from the basal species *D. medici*, there are two distinct *Dasypeltis* clades: 1) populations from W, SW and central Africa (*D. s. loveridgei*, and sister species *D. palmarum* and *D. confusa*), and 2) remaining species analysed so far (*D. inornata*, *D. scabra*, and sister species *D. fasciata* and *D. atra*). *D. scabra* in Southern Africa consists of three clades, with two possible new species. Molecular and morphological data indicate that *D. s. loveridgei* of Namibia and adjacent regions in SW Africa, currently considered a synonym of *D. scabra*, is in fact a distinct species sympatric with the latter in north-central Namibia. Populations in S Namibia and N Cape of South Africa, as well as NW Namibia and SW Angola, respectively, appear to represent new subspecies of —*D. loveridgei*||. A morphology-based revision of *Dasypeltis* in NE Africa & SW Arabia confirms the validity of *D. abyssina*, a species with unusual dorsal and ventral colour patterns, and high ventral counts, and identifies a new subspecies of *D. abyssina* from Ethiopia, Eritrea and the Arabian Peninsula. Distribution ranges of the various taxa have been mapped and will be illustrated. Although previously considered restricted to W Africa, *D. confusa* is widely distributed through central Africa to Uganda and as far south as S Angola; while *D. atra* extends from S Tanzania to central Ethiopia and westwards into E DRC.

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**Bauer, Aaron** (Villanova University); Heinecke, Matthew; Jackman, Todd (Villanova University)

### **Substrate-mediated endemism in southern African geckos**

Southern Africa has a rich lizard fauna, within which gekkonid geckos are a dominant group. High species-richness in geckos is associated with substrate-specificity which, in conjunction with the complex geological history of the subcontinent, has resulted in