A celebration of the works of John Charles Poynton

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The 15th meeting of the African Amphibian Working Group celebrated the contributions of John Charles Poynton to African Herpetology. The meeting, in Trento, Italy, was timed to commemorate John’s 81st birthday (in May 2012), and he presented a keynote speech that focused on a topic that has long fascinated him—the Afrotemperate amphibian fauna. His presentation is published here, in a modified form, for this special issue of *African Journal of Herpetology* (Poynton 2013). Other papers on the main themes of John’s research are also included in this issue, which include biogeography (Loader et al. 2013; Schreiner et al. 2013), taxonomy (Cruz et al. 2013) and morphology (Wilkinson et al. 2013).

Recognition of John Poynton as one of the leading contemporary African herpetologists has been documented in a previous article (Douglas 1991) which gave an account of John’s professional life up to his retirement in the early 1990s. Since that time, John has continued to make landmark contributions to African Herpetology, with his publication record currently totalling 105 (see a complete list of John Poynton’s publications in the Online Supplementary Material). The early 1990s marked a pivotal point in his career. John retired from the University of Natal in 1992 and with his wife Wyliss relocated to the UK. In the same year he was awarded the South African Order for Meritorious Service. It was upon arriving in London, and as an honorary researcher at the Natural History Museum in London, that John embarked on his taxonomic and biogeographic review of the lowland and highland fauna of East Africa (Poynton 1993), moving his geographic focus northwards from his earlier works on southern African anurans (e.g. Poynton 1964a, 1964b; Poynton & Broadley 1985a, 1985b, 1987, 1988, 1991).


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across latitude and altitude. Along with his work in South Africa, these studies formed the basis for John's views on a climatic rather than cartographic terminology, applied to the classification of assemblages. Although this might strike some as a purely semantic issue, it underlies John's clear understanding of what determines the distribution of an organism. To John, the occurrence of a species is the product of complex interactions of abiotic and biotic aspects of a habitat — terms such as 'montane' are an over-simplified proxy for a highly variable climatic feature.

John's ideas were clearly outlined in his book chapter 'Distribution of amphibians in sub-Saharan Africa, Madagascar and Seychelles' (Poynton 1999), representing what we consider to be a major contribution to African biogeography in a global context. In this contribution, John summarises the 14 main biogeographic regions of Africa — providing not only a characterisation of the habitat types, but also a historical perspective of African biogeographical research. New generations of phylogeographers and macroecologists will glean much from reading the predictions and analyses formulated by John in this chapter. The chapter has a dual function: to outline what was already understood but more importantly what was lacking; and the inadequate state of sampling and taxonomic analysis in Africa at the dawn of the new millennium.

The detailed taxonomic work that John carried out to identify new species was painstaking in its approach and accuracy. As every recent visitor to the herpetological collections at the Natural History Museum London can testify, passing through the herpetology section you would often see John peering down a microscope with pair of callipers in hand — identifying and measuring another Arthroleptis! John's encyclopaedic knowledge of variation in southern and East African amphibians means he has a comprehensive understanding of the characters that define each family, genus and species (as first outlined in his monumental work of 1964a). His taxonomic keys have provided the source to the subsequent blossoming of many African amphibian field guides (e.g. Channing 2001; Channing & Howell 2006).

A less well-known part of John's professional career since the 1990s is the sheer volume of species identifications for biodiversity surveys and inventories. Non-government organisations, such as Frontier-Tanzania, regularly sent consignments of amphibians for John to identify, totalling well over 3 000 specimens. It is with this material that John described important endemic species from coastal East Africa (e.g. Mertensophyrne howelli and M. usambara [Poynton & Clarke 1999], the latter figured on the cover of this issue) and the highlands (e.g. Arthroleptis nikaev, A. nguruensis [Poynton 2003b; Poynton et al. 2008]). Among the many interesting new species John described, one clearly stands out. The peculiar habitat of the Kihansi spray toad (Nectophrynoides asperginis; Poynton et al. 1998) alone would have made this little toad remarkable: it is found only within a small part of a narrow gorge right below the Kihansi Falls in the Udzungwa Mountains, Tanzania, where the spray generated by the falls created a unique ecosystem. Sadly, the habitat of this toad was all but destroyed as a result of the Kihansi hydroelectric dam project that resulted in a precipitous drop in spray generated by the falls and in a general drying of the gorge. A sprinkler system was subsequently installed, but this proved to be too little, too late (IUCN 2012). By 2004, the Kihansi spray toad was extinct in the wild (Channing et al. 2006). Fortunately, live specimens had been taken from the gorge to establish a captive breeding programme run by the Bronx and Toledo Zoos in the United States (Church 2011). This programme has successfully bred and reared
new generations of Kihansi spray toads and, after extensive works carried out to partly restore its habitat, the first specimens were reintroduced into its native habitat in October 2012. The Kihansi spray toad has thus become both a sad reminder of the all too prominent habitat destruction across Africa and the loss of unique biodiversity that comes with it, and a story of hope that has made it a flagship species for conservation efforts worldwide. In this respect, John’s work has been important and instrumental in highlighting the most severe threat to African amphibians – human-induced habitat change.

John Poynton’s recent work has contributed substantially to a greater understanding of the Eastern Afromontane biodiversity hotspot and surrounding lowlands through his taxonomic and biogeographic analyses. Suffice it to say that our current understanding of this area would be substantially less complete without John’s contributions (e.g. Poynton 1962, 1999, 2000a). Importantly, John has also indirectly contributed to our understanding by generously training, facilitating and inspiring other herpetologists in this area. John’s work on African amphibians continues to generate interesting research questions for the younger generation of herpetologists to test (e.g. Müller et al. 2013). This issue is a small mark of respect and gratitude to him.

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REFERENCES


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ONLINE SUPPLEMENTARY MATERIAL.

JOHN CHARLES POYNTON LISTS OF PUBLICATIONS IN BIOLOGY

A list is presented of the scientific publications of John C. Poynton.

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1962d. Patterns in the distribution of the southern African Amphibia. 


1963a. A neurological study of the clasp reflex in *Xenopus laevis* (Daudin). 


1963d. Comment on the proposed use of the Plenary Powers to designate a neotype for *Rana fasciata* Burchell, 1824. (With H.M. Smith). 


1964a. Relations between habitat and terrestrial breeding in amphibians. 

Evolution 18: 131.


1985f. *Durban’s amphibians are interesting and varied*. Durban: Parks, Recreation and Beaches Department of the Durban Municipality.

1985g. Amphibia Zambesiaca 1. Scolecomorphidae, Pipidae,
Microhylidae, Hemisidae, Arthroleptidae. (With D.G. Broadley).


50.


Southern African Society for Quaternary Research.


1994a. Investigating biogeographical patterns: small steps between the


1997b. On *Bufo nyikae* Loveridge and the *B. lonnbergi* complex of East


2008b. A new giant species of *Arthropleptis* (Amphibia: Anura) from the
forests of the
Nguru Mountains, Tanzania. (With M. Menegon & S.P. Loader).


2009a. Re-description of the type series of *Nectophrynoides viviparus* (Bufonidae), with a


