



An Observation of Traumatic Globe Luxation in the African Red Toad (*Schismaderma carens*) (Smith 1848) in KwaZulu-Natal

Spencer L. Higgins

Writtle School of Agriculture, Animal and Environmental Sciences, Anglia Ruskin University, Lordship Road, Writtle, Chelmsford, CM1 3RR, United Kingdom (spencerlhiggins@gmail.com)

The African Red Toad (*Schismaderma carens*) is widely distributed throughout southeastern Africa, including several provinces in South Africa (Limpopo, Free State, Gauteng, and KwaZulu-Natal) that include noticeably different biomes (Ngwenya et al. 2025). Such a broad geographic and ecological distribution reflects the species' capacity to exploit a wide variety of habitats (Rutherford et al. 2006; Ngwenya et al. 2025).

The species shows considerable variation in color, with individuals ranging from bright red to orange-gray; the dorsum is comparatively smoother than that of many other toads of similar build and features two circular greenish-black spots on either side of the vertebral line on the posterior third of the back; distinct dorsolateral glandular ridges with darker lower margins extend from above the tympana to the hindlimbs; the tympana are conspicuously large and round, approximately equal in diameter to the eye (Channing and Howell 2006; Baptista et al. 2021; Dehling and Sinsch 2023).

At about 1200 h on 25 June 2025, we encountered a *S. carens* beneath stones adjacent to lodging in KwaZulu-Natal Province (-28.728204, 29.703962) that displayed traumatic globe luxation, a rare injury with a dramatic clinical presentation in which the eyeball is expelled from the socket due to a reduction in intraorbital pressure, which is frequently attributed to trauma in the head and neck region (Gupta et al. 2017; Boesoirie et al. 2025). The left eye of the toad was extending out of its socket and was discolored, likely due to necrosis.

In the same microhabitat, we encountered several other organisms, including a Highveld Lesser-thicktail Scorpion (*Uroplectes triangulifer*) that might have been preparing to enter hibernation, a strategy employed to withstand environmental stressors such as harsh winter conditions and food scarcity (Jiang et al. 2023). Although not a natural predator of the toad, any close approach by the toad could provoke a defensive response or trigger physical conflict. *Uroplectes tri-*



Figure 1. An African Red Toad (*Schismaderma carens*) with an obvious traumatic globe luxation of the left eye. Photograph by Steven J.R. Allain.

angulifer possesses powerful chelae (claws) capable of inflicting trauma as well as a telson (stinger) that, if thrust behind the eye without envenomation, could potentially dislodge the orbit. However, given the habitat in which the toad was discovered, the trauma was more likely caused by the movement of rocks.

I am unaware of any records documenting cases of traumatic globe luxation in amphibians, potentially due to the lethality of the condition. The injury would not only compromise vision but the exposed orbital socket would leave the individual open to severe infection with easy access to the brain. Therefore, this observation appears to be a rare example of the resilience of this species.

Acknowledgements

I thank Dr. Steven J.R. Allain for help with the preparation of this manuscript and Amanda Warren for her input and hospitality at UmPhafa Nature Reserve where this observation was made.

Literature Cited

Baptista, N.L., P.V. Pinto, C. Keates, S. Edwards, M.O. Rödel, and W. Conradie. 2021. A new species of red toad, *Schismaderma* Smith, 1849 (Anura: Bufonidae), from central Angola. *Zootaxa* 5081: 301–332. <https://doi.org/10.11646/zootaxa.5081.3.1>.

Boesoirie, S.F., F. Rajaii, and G. Sundar. 2025. *Traumatic Globe Luxation*. EyeWiki, American Academy of Ophthalmology, San Francisco, California, USA. <https://eyewiki.org/Traumatic_Globe_Luxation>.

Channing, A. and K.M. Howell. 2006. *Amphibians of East Africa*. Comstock Publishing Associates, Cornell University Press, Ithaca, New York, USA.

Dehling, J.M. and U. Sinsch. 2023. Amphibians of Rwanda: Diversity, community features, and conservation status. *Diversity* 15: 512. <https://doi.org/10.3390/d15040512>.

Gupta, H., S. Natarajan, S. Vaidya, S. Gupta, D. Shah, R. Merchant, and S. Deshpande. 2017. Traumatic eyeball luxation: a stepwise approach to globe salvage. *Saudi Journal of Ophthalmology* 31: 260–265. <https://doi.org/10.1016/j.sjopt.2017.06.001>.

Jiang, C., K.B. Storey, H. Yang, and L. Sun. 2023. Aestivation in nature: Physiological strategies and evolutionary adaptations in hypometabolic states. *International Journal of Molecular Sciences* 24: 14093. <https://doi.org/10.3390/ijms241814093>.

Ngwenya, S.S., G.K. Nicolau, M.C. Womack, and J.R. Phillips. 2025. Geographical Distributions. Bufonidae. *Schismaderma carens* (Smith, 1848). Eastern Red Toad. *African Herp News* 87: 35–38.

Rutherford, M.C., L. Mucina, and L.W. Powrie. 2006. Biomes and bioregions of southern Africa, pp. 30–51. In: L. Mucina and M.C. Rutherford (eds.), *The Vegetation of South Africa, Lesotho and Swaziland*. Strelitzia 19. South African National Biodiversity Institute, Pretoria, South Africa.