A Common Garden Skink (Lampropholis guichenoti) with a Bifurcated Tail

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The Common Garden Skink, Lampropholis guichenoti (Duméril and Bibron 1839), is endemic to Australia and widely distributed in southeastern South Australia through Victoria and eastern New South Wales to southeastern Queensland (Cogger 2018). Adults reach approximately 50 mm SVL and complete tails are about 1.6 times the body length. This species reaches sexual maturity within one year of birth, females lay clutches of 1–5 eggs, and communal nesting is common (Shine 1999; Robertson and Coventry 2019). Herein, we report a case of tail bifurcation.

During a field survey at 1430 h on 8 October 2018, we encountered a single *L. guichenoti* with a bifurcated tail perched on a log (Fig. 1) near the town of Anglesea on the coast of the southern Australian state of Victoria (38°23'28.0"S, 144°12'54.0"E; elev. 40 m asl). Previous observations of these lizards with bifurcated tails (N. Clemann, pers. obs.; see also Barr et al. 2020) suggest that this condition is not unusual as this species regenerates lost tails.

Tail-bifurcation is a widely recorded malformation in reptilian lineages that regenerate tails if they have been partially or entirely lost (e.g., Mitchell et al. 2012; Passos et al.

2016; Miles et al. 2020; Barr et al. 2020; Xu et al. 2020). The primary cause of tail bifurcations in skinks is abnormal regeneration after the tail has been damaged (Clause and Capaldi 2006). Interestingly, we noted that the individual described above was particularly slow-moving and easy to capture compared to conspecifics of similar body size at the same location, suggesting that tail bifurcation could negatively affect locomotion and the ability to escape predators. This observation is in line with statements in Cromie and Chapple (2012) and Barr et al. (2020), respectively, that tail loss in this species could be costly in terms of both locomotor performance and energetics and could result in negative ecological consequences on fitness.

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Literature Cited

Barr, J.I., R. Somaweera, S.S. Godfrey, M.G. Gardner, and P.W. Bateman. 2020. When one tail isn't enough: abnormal caudal regeneration in lepidosaurs and its potential ecological impacts. *Biological Reviews* 95: 1479-1496. https://doi.



Fig. 1. An adult Common Garden Skink (*Lampropholis guichenoti*) with a bifurcated tail in Anglesea, Victoria, Australia. Photograph by Duminda S.B. Dissanayake.

- org/10.1111/brv.12625.
- Clause, A.R. and E.A. Capaldi. 2006. Caudal autotomy and regeneration in lizards. *Journal of Experimental Zoology Part A: Comparative Experimental Biology* 30: 965–973. https://doi.org/10.1002/jez.a.346.
- Cogger, H. 2018. *Reptiles and Amphibians of Australia*. 7th ed. CSIRO Publishing, Clayton, Australia.
- Cromie, G.L. and D.G. Chapple. 2012. Impact of tail loss on the behaviour and locomotor performance of two sympatric *Lampropholis* skink species. *PloS one* 7: e34732. https://doi.org/10.1371/journal.pone.0034732.
- Miles, D.C., C.L. Danser, and K.T. Shoemaker. 2020. Tail bifurcation in *Plestiodon skiltonianus*. Herpetology Notes 13: 343–345.
- Mitchell, J.C., W. McDaniel, and J. McDaniel. 2012. Plestiodon inexpectatus (Southeastern Five-lined Skink). Bifurcation. Herpetological Review 43: 650.

- Passos, D.C., P.H.M. Fonseca, P.R.R. de Vivar, C.Y. Kanayama, V.P. Teixeira, and A.G. Martinelli. 2016. Tail trifurcation in the lizard *Salvator merianae* (Squamata: Teiidae) investigated by computer tomography. *Phyllomedusa* 15: 79–83. https://doi.org/10.11606/issn.2316-9079.v15i1p79-83.
- Robertson, P. and A.J. Coventry. 2014. Reptiles of Victoria. A Guide to Identification and Ecology. CSIRO Publishing, Clayton, Australia.
- Shine, R. 1999. Egg laying reptiles in cold climates: determinants and consequences of nest temperatures in montane lizards. *Journal of Evolutionary Biology* 12: 918-926. https://doi.org/10.1046/j.1420-9101.1999.00093.x.
- Xu, C., J. Palade, R.E. Fisher, C.I. Smith, A.R. Clark, and S. Sampson. 2020. Anatomical and histological analyses reveal that tail repair is coupled with regrowth in wild-caught, juvenile American alligators (*Alligator mississippiensis*). Scientific Reports 10: 20122. https://doi.org/10.1038/s41598-020-77052-8.