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Tail trifurcation in *Hemidactylus* aff. *malcolmsmithi* in southern Mississippi, USA

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Hemidactylus aff. *malcolmsmithi* is a medium-sized gekkonid lizard (Squamata: Gekkonidae) surmised to be native to Tripura, India (see Agarwal et al., 2019) and, like many other *Hemidactylus* species, it is often found near human structures (Boundy and Carr, 2017). *Hemidactylus* aff. *malcolmsmithi* was first recorded in the USA in 2012 in New Orleans, Louisiana (as *H. parvimaculatus*; Heckard et al., 2013) and is now documented to have spread into adjacent Texas (Davis and LaDuc, 2019) and Mississippi, USA (Pellecchia et al., 2019). Molecular data from individuals in New Orleans showed that these species were related to *H. parvimaculatus*, though deep divergence between the groups was noted at that time (Heckard et al., 2013). Later, Agarwal et al. (2019) noted that Louisiana individuals of this type of gecko were more closely aligned with an undescribed sister species of *H. malcolmsmithi*. It is clear that additional taxonomic work is needed to better resolve the identification of these geckos.

Caudal autotomy and regeneration are well documented survival adaptations in lizards, and on occasion, regeneration may result in the development of supernumerary tails (Arnold, 1984; Bateman and Fleming, 2009). Supernumerary tails are common among lizards, with documented occurrences across at least 22 families and 175 species, with tail bifurcation and trifurcation reported most often (Barr et al., 2020; Baum and Kaiser, 2024). The family Gekkonidae contains a large number of species with documented occurrences of supernumerary tails. Within the genus *Hemidactylus*, tail bifurcation has been reported in 12 species, and tail trifurcation has been reported for three species (*H. brookii*, *H. frenatus*, and *H. persicus*; Barr et al., 2020). Here, we report an occurrence of tail trifurcation in an additional species of *Hemidactylus*.

On 1 October 2023 at 05:47 h, the first author found an adult *H.* aff. *malcolmsmithi* with a trifurcated tail (Fig. 1) on the outside of a residence at the Mississippi Sandhill Crane National Wildlife Refuge, Jackson County, Mississippi (30.4500°N, 88.6574°W; WGS 84; ambient air temperature 18°C). The individual (ca. 39 mm snout–vent length and 43 mm tail length) was captured for photos and then released.

The tip of the gecko's tail was separated into three distinct segments (A–C; Fig. 1). We determined that Segment A (length 6 mm) was part of the original tail based on the presence of enlarged scales and tubercles at its base, which is indicative of a non-regenerated tail. Regenerated tails lack the enlarged tubercles present on original tails and are often different in colouration and pattern from the original tail. Segment A extended at an angle of 40° to the right from the midline and its distal 4 mm were regenerated. Segment B (length 6 mm) is a regenerated tail and lies in the midline of the tail and thereby formed the distal tip of this gecko's tail. Segment C (length 5 mm) is also regenerated and originated on the left side of the original tail ca. 3 mm anterior to the previously described tail segments. The individual did not drop its tail upon capture and appeared in good body condition, matching statements from others that suggest supernumerary tails do not have an obvious fitness cost (Henle and Grimm-Seyfarth, 2020). A photo of this individual was deposited in the Biodiversity Collections at The University of Texas at Austin (TNHC 117441).

Although reported frequencies of supernumerary tails in lizards are typically < 1% (e.g., Henle and Grimm-Seyfarth, 2020), others have suggested that frequencies may be greater than what has been reported (Baum and Kaiser, 2024). Regardless, there has been no systematic investigation of the frequency of supernumerary tails at this site in southern Mississippi.

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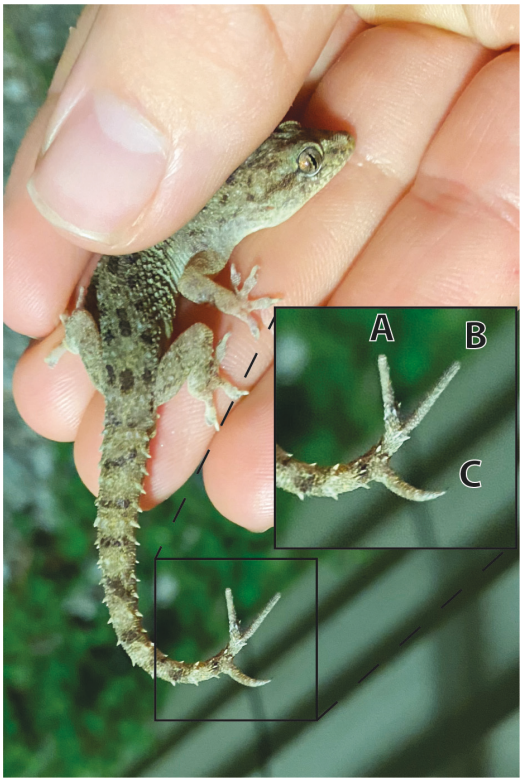

Figure 1. Adult *Hemidactylus* aff. *malcolmsmithi* with a trifurcated tail (inset) from Jackson County, Mississippi, USA. Photo by Jake G. Power.

To the best of our knowledge, this is the first reported occurrence of tail furcation in *H.* aff. *malcolmsmithi*.

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