NATURAL HISTORY NOTE

An Observation of Tail-bifurcation in a Gilbert's Skink, *Plestiodon gilberti*

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The tails of squamates may serve to store fats, aid in defense, assist with balancing or climbing, may be used for inter- or intra- specific communication, and may aid in movement for some species (Etheridge 1967). Lizard species are capable of caudal autonomy (losing their tail) which is often used as a defense mechanism (Goss 1992, Lozito and Yuan 2017, Barr 2020), followed by regeneration (Barr 2020, Daponte et al. 2021). Abnormal caudal regeneration has been reported in over 140 species of reptile (Barr et al. 2020, Henle and Grimm-Seyfarth 2020). The most frequently documented abnormalities are tail bifurcations, or the growth of two tails due to defensive caudal autonomy or other environmental, congenital, or cryptogenic factors (Henle and Grimm-Seyfarth 2020). It has been suggested that skinks are particularly prone to tail bifurcation, with the phenomenon being reported in several species: *Plestiodon skiltonianus* (Western Skink; Miles et al. 2020), *P. inexpectatus* (Southeastern Five-lined Skink; Mitchell et al. 2012), *P. copei* (Cope's Skink; Suárez-Rodríguez et al. 2020), and others (McKelvy and Stark 2012). Here we detail the first record of an adult *P. gilberti* (Gilbert's Skink) observed in the wild with a bifurcated tail.

Plestiodon gilberti is a member of the family Scincidae and is endemic to the southwestern United States. It occurs in isolated populations in southern Nevada and western Arizona, and along the Pacific coast where this species occupies a diverse variety of habitats and a range of elevations from the northern Sierra Nevada foothills in Butte County to northern Baja California (Stebbins 2003, McGinnis and Stebbins 2018).

On 12 October 2022 we were conducting ground squirrel burrow excavations on a work site adjacent to the intersection of Union Road and State Route 156 in Hollister, California. The work area encompassed approximately three acres of upland habitat for the California Tiger Salamander (*Ambystoma californiense*) and pre-construction clearance surveys were being performed ahead of anticipated ground disturbance for a state road widening project. The site, located in the South Coast Range at an elevation of approximately 80 m, largely consisted of non-native slender oat (*Avena barbata*), with a single mature California juniper (*Juniperus californica*) and one large poison oak (*Toxicodendron diversilobum*) shrub.

At approximately 1046 hrs we discovered a free-roaming *P. gilberti* lying motionless at the terminus of a newly excavated burrow (36° 50' 36.9" N, 121° 27' 20.0" W). We temporarily collected the skink for species identification, photographs, and relocation. The skink was identified as an adult *P. gilberti* based on the observation of seven supralabial scales and the absence of a dark dorsolateral stripe posterior to the rear legs (Stebbins 2003, McGinnis and Stebbins 2018). Immediately noticeable upon examination was the appearance of a second tail formed on the lateral posterior region of the skink's body (Fig. 1). Although measurements were not gathered prior to relocation, a general examination revealed a healthy body condition, with robust responsiveness to handling.

Little is known about the effect of tail bifurcation on lizard fitness, though it is not thought to restrict movement or survival (Alvarez et al. 2020), and individuals with this abnormality have been observed to mate and reproduce successfully (Henle and Grimm-Seyfarth 2020). The potential consequences of supernumerary tails in lizards should be investigated further.

We believe that this is the first report of multiple tails in *P. gilberti* and speculate that the anomalous caudal growth was caused by a trauma or partial severing of the tail, and resultant hyper-regeneration. Although such an injury may have numerous causes (e.g., a predator interaction, attack by conspecifics, during mating, etc.) we note that abundant anthropogenic refuse was prevalent throughout the work site, including broken glass, metal fragments and various plastics.

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Fig. 1. A *Plestiodon gilberti* with bifurcated tail, Hollister, California. Photo by Rachel Perpignani.