



Maximum Longevity of the Middle Eastern Short-fingered Gecko, *Stenodactylus doriae* (Blanford 1874)

Shai Meiri

School of Zoology and The Steinhardt Museum of Natural History, Tel Aviv University, Tel Aviv 6977801, Israel (uncshai@tauex.tau.ac.il; ORCID 0000-0003-3839-6330)

The Middle Eastern Short-fingered Gecko, *Stenodactylus doriae* (Blanford 1874) (Fig. 1), is a terrestrial, nocturnal insectivore inhabiting much of the Arabian Peninsula (Bar et al. 2021). It is listed on the IUCN Red List as Least Concern globally (Soorae et al. 2012). The distribution of this species reaches its westernmost edge in the Arava Sands of southeastern Israel (Bar et al. 2021; Caetano et al. 2022). Given its restricted distribution in one of the most threatened habitats in southern Israel, it is classified as Critically Endangered in the country (Dolev and Pervolutzki 2002).

For a given body size, geckos are generally longer-lived than other lizards (i.e., the allometric relationship between body mass and longevity has both a steeper slope and a higher intercept than those of other lizards; Stark et al. 2020). *Stenodactylus doriae* attains a maximum weight of 11 g (the maximum weight of 61 weighed specimens in the collections of the Steinhardt Museum of Natural History, Tel Aviv University; TAU-3602). The allometric equation (from Stark et al. 2020) for gecko longevity based on its maximum mass (calculated from maximum SVL; 11.4 g) predicts a maximum longevity of 9.8 years.

Some doubt exists regarding the maximum age actually attained by *S. doriae*; Werner et al. (1993) reported a maximum longevity record for *S. doriae* of 8 years, 10 months, and 12 days, based on nine individuals housed at the reptile collections of the Hebrew University, Jerusalem. The Collections of the Steinhardt Museum of Natural History, Tel Aviv University (TAU), holds a specimen (TAU 12515), presumably collected on 1 April 1973, which died almost nine years later, on 26 March 1982. However, the collection date is marked in the SMNH catalogue with a question mark, and the age of the animal when it was collected was not reported.

Herein I report a new record longevity for *S. doriae* that probably exceeds both of these earlier records. Two females were brought to the Meier Segal's Zoological Research Garden, Tel Aviv University, from the environs surrounding

the Hatzeva Field School in the Arava Valley, Israel (30.78, 35.24) on 25 March 2015. Both were reported to be adults when captured based on their sizes. One measured 52.5 mm SVL and 4.6 g in weight. The other had a weight of 5.6 g when captured, but its SVL was reported as 30.3 mm. I view the weight record as legitimate but the SVL as erroneous. An SVL of 30 mm, corresponds to the size of the shortest individual (#12229) in the collections of the Steinhardt Museum of Natural History, which died two days after hatching and weighed 0.8 g. The specimens in the collections of the Steinhardt Museum of Natural History closest to this specimen in weight are TAU 2090 (5.5 g, 62 mm SVL) and TAU 12783 (5.9 g, 70 mm SVL). Thus, the heavier specimen was almost certainly an adult when captured.

The two individuals from Hatzeva Field School were kept together in a terrarium placed in an open yard and fed crickets and mealworms. One individual died several years later, but exact details are lacking. The second died on 18 October 2023, 8 years and 207 days after capture. The only datum I know of regarding the age of maturity of *S. doriae* is from Bouskila and Amitai (2001), who reported that sexual



Figure 1. The Middle Eastern Short-fingered Gecko (*Stenodactylus doriae*) in the Arava Valley, Israel. Photograph by Jonathan Ben-Simon.

maturity is attained at an age of about 8 months. Werner (2016) reported 52 mm as the smallest length of a reproductive female *S. doriae*. Similarly, in the sample of Goldberg and Maza (2019), the smallest reproductively active female was 55 mm long, and the authors stated that females 51, 52, and 53 mm SVL “were arbitrarily considered as adults as it is possible they had not yet commenced reproductive activity.”

Therefore, the smaller gecko from the Hatzeva Field school was probably on the verge of adulthood or just past it. The larger female, weighing ~21% more, was very likely already sexually mature when collected. If we take that to mean the smaller individual was about 8 months old, and conservatively assuming it was the one which survived longer, then combined with the time spent in captivity, the minimum longevity of this gecko was 9 years and 3 months. If it was the larger, presumably older gecko, it might have been older still. Eight months, as far as I know, is the only datum for age at maturity for the genus as a whole (Meiri 2024). Amos Bouskila (pers. comm., May 2024) considered it a valid estimate but is unsure exactly from where the datum was derived. I note that 8 months is considerably lower than the average age at maturity of geckos that stands at 18.0 months (Meiri 2020), despite *S. doriae* being a relatively large gekkonid with a maximum SVL of 83 mm (Carranza et al. 2021), indicating that 79% of gekkonid species are smaller (Meiri 2024). Given these considerations I view the estimate of 9 years and 3 months as a conservative new longevity record for *Stenodactylus doriae*.

Acknowledgements

I thank Barak Levi and Emmanuel (‘Manu’) Bar for careful care of the gecko while in the Zoological Research Garden, enabling it to achieve a record longevity, and Erez Maza and

Amos Bouskila for valuable discussions that aided in the writing of this manuscript.

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