

First report of albino green toads *Bufo viridis* in Greece

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The green toad, *Bufo viridis* (Laurenti, 1768) (Anura: Bufonidae) is a medium-sized toad, with pale white, grey or brownish background colour, randomly covered with green patches, resulting in a camouflage pattern. Red or orange warts might be scattered on the dorsal area, whereas the ventral side is pale, whitish and patternless (Arnold & Ovenden, 2002). The green toad is a common species on the Greek mainland (Valakos et al., 2008), although in some cases insular populations can be seriously threatened (e.g. Strachinis & Artavanis, 2017). Three different subspecies of green toad are currently recognised in Greece, with the nominate one occurring on the mainland and the Peloponnese (Dufresnes et al., 2020). Hitherto, no cases of albinism in green toads have been documented from Greece, and only a few cases are reported from the rest of the species' range (i.e. Flindt, 1985; Andrä, 2011; Lunghi et al., 2017). In this note we present the first records of albino green toads from Greece.

On 4th July 2019, in an urban park in the center of Kalamata city, Peloponnese (southern Greece), we spotted two albino green toad tadpoles amongst hundreds of typical ones, inside a fountain (the exact location is withheld to protect this population). As the fountain was soon to be drained for annual maintenance, we captured the two albino tadpoles and then in captivity raised them to adults. The captive tadpoles successfully metamorphosed after 50

days and were fully functional after one and a half year of growth, showing no other malformations. Their main dorsal colour was yellowish to light orange with scattered red spots on warts, and their irises were red. The ventral area was whitish, patternless and spotless (Fig. 1A). In due course they were deposited in the Natural History Museum of Crete.

On a second visit to the urban park in 19th June 2020, but inside another fountain near the first one, found 14 albino tadpoles forming a separate cluster (Fig. 1B) among hundreds of typical green toad tadpoles. It has been shown that albino tadpoles face a high rate of predation (Childs, 1953), which can explain the rarity of this phenotype in the wild (Escoriza, 2012). Since it appears that there are no serious tadpole predators in the urban park, which is surrounded by several city blocks, it seems quite possible that albino tadpoles and metamorphosed toads benefit from a scarcity of predators. However, a survey during the green toad's breeding season is needed to determine whether there are any albino adults in the area or whether albino tadpoles are exclusively the progeny of normal coloured parents that are heterozygous for albinism.

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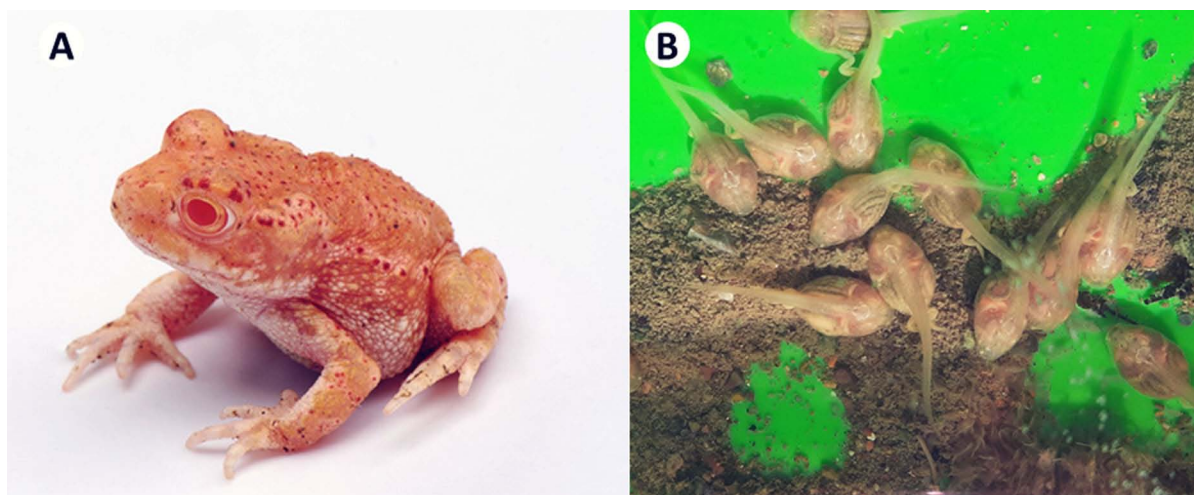


Figure 1. Albino green toads *Bufo viridis* – **A.** Juvenile toad that metamorphosed in captivity from a tadpole collected from a fountain in an urban park in July 2019, **B.** Albino tadpoles photographed in June 2020 in the same urban park but in a different fountain

taken in his photographic studio and Stephen Roussos for a pre-peer review of the manuscript. Animals were collected under the addendum of 18th February 1981 of the Greek Presidential Decree no. 67 (Official Government Gazette 23/A/30-1-81, "On the protection of wild flora and fauna and the determination of the procedure of coordination and control of research"), regarding domestic institutions' research.

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