

Natrix natrix (LINNAEUS, 1758),
found on the small Islet of Tigani
(Central Cyclades, Greece)

The European Grass Snake, *Natrix natrix* (LINNAEUS, 1758), is one of the most widespread snakes in the Palearctic, occurring from Portugal to Mongolia and from Algeria to Norway (UETZ & HOSEK 2014). It prefers wet habitats that range in altitude from sea level up to 3,000 m and is typically found close to water bodies such as lakes, ponds or rivulets (KABISCH 1997). Across the wide distribution of this species, 14 described subspecies conflict with 16 molecular clades currently recognized (KINDLER et al. 2014). Coloration varies considerably, but the main dorsal background colors are gray, brown and olive-gray whereas the ventral side is commonly whitish, tessellated with black to a variable degree. Very typical is a pair of black occipito-nuchal dots anteriorly bordered by orange to white colored semilunar dots. The dorsal decoration may include regularly arranged black spots and two bright longitudinal stripes. Melanistic or dark colored specimens were frequently reported (KABISCH 1999).

In Greece, *N. natrix* ranges throughout the mainland, where it is one of the most

common snakes and at times occurs in dense populations (KABISCH 1997; VALAKOS et al. 2008). It is also found on several Ionian and Aegean islands (CHONDROPOULOS 1989; VALAKOS et al. 2008), always in areas near water (CATTANEO 2001, 2010; BROGGI 2014). The strong aquatic character of the species shapes its diet; *N. natrix* feeds mainly on amphibians, but has been known to supplement its normal diet with fish (HUTINEC & MEBERT 2011). However, water is a rare commodity on Mediterranean islands, especially on those located in the Aegean Sea (CATSADORAKIS & PARAGAMIAN 2007; VERVUST et al. 2013). As a result, the Grass Snake is absent from many small islands, which often lack water sources (BROGGI 2008, 2009). In the Cyclades, wherever it occurs, its populations are small and the last individuals are imperiled (e.g., in Milos, BROGGI 2000), like the majority of the hydrophilic species in the Archipelago, by the anthropogenic exploitation of freshwater resources (BROGGI 2012; BROGGI & GRILLITSCH 2012). In summer 2014, the authors found *N. natrix* on the small, dry islet of Tigani, off Paros, which is the first ophidian record for that islet.

Tigani is situated between two larger islands, Paros and Antiparos (1.6 km SW of Paros Island, 36.9770°N, 25.1155°E) and belongs to the three-islet cluster called Panteronissia (Fig. 1A). Tigani has an area of 0.08 km² and is very dry and flat with sparse patches of low, scrubby vegetation. Previous surveys had confirmed the presence of *Mediodactylus kotschyi* (STEINDACHNER, 1870) but no other reptiles or amphibians had been found on the island. The encounter with the snake occurred on 8 June 2014, during an island-wide herpetological survey. It was a warm, sunny evening (24 °C), with a few scattered clouds. At 18:45 h, after being on the island for only ten minutes, the authors saw a dark snake dart into a bush. As no snakes had been recorded previously on the island, the specimen was caught, preserved in alcohol and later added to the Herpetology Collection of the Yale University, Peabody Natural History Museum (specimen number YPM HERR.019499). The snake was a melanistic, non-gravid adult female, (Pholidosis features: keeled dorsal scales, seven super-

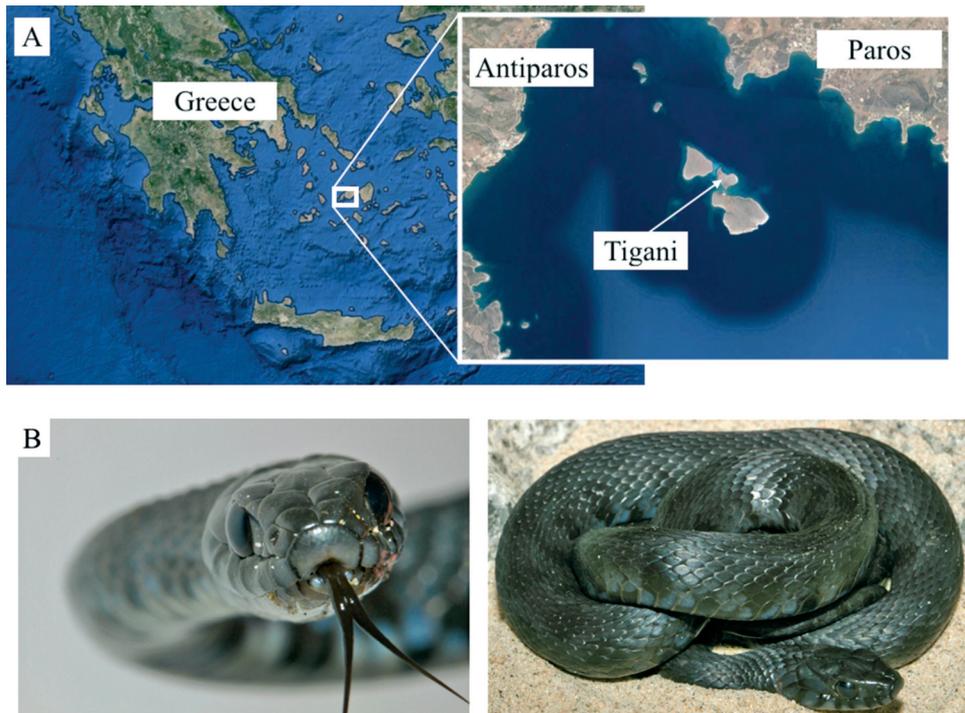


Fig. 1: A - Map of the survey area. Tigani is located between the islets Glarombi (at north) and Panteronissi (at south), between the islands of Paros and Antiparos (Central Cyclades, Greece).
 B - Melanistic female *Natrix natrix* (LINNAEUS, 1758) from the barren islet Tigani (YPM HERR.019499).

labial scales, 19 longitudinal rows of scales around midbody, 170 ventrals; snout-vent length: 500 mm; body diameter: 20 mm for much of its body; head height: 45 mm; maximum head width: 75 mm). It had a long whip-like tail with black dorsal scales and a mottled, cream-colored belly with only very faint bands running horizontally along its length (Fig. 1B).

The melanistic coloration of the specimen is a notable deviation from the typical pattern. Melanism is not uncommon in *N. natrix*, particularly in mountain habitats, e.g., black individuals were reported recently from the Balkans (ZADRAVEC & LAUS 2011; MOLLOV 2012). In some subspecies the dark coloration, either pure melanism or in the *picturata* morph is more frequent: e.g., in *N. natrix schweizeri* L. MÜLLER, 1932, from Milos Archipelago and in *N.*

natrix cypriaca (HECHT, 1930) from Cyprus (VALAKOS et al. 2008; BAIER et al. 2010). All-black individuals were not commonly observed on the neighboring islands of Paros and Antiparos by LOTZE (1973) and GRUBER & FUCHS (1977), whereas, CATTANEO (2010) enumerated melanistic specimens from the latter island in his Table 5.

This is the first time *N. natrix* has been recorded on such a small islet in the Aegean Sea. Until now, the smallest island known to host the species was the nearby Despotiko with an area of 7.754 km² (GRUBER & FUCHS 1977). The absence of data and records makes it difficult to determine whether the individual found was a lone individual who unexplainedly found its way to Tigani, or whether there is an established population, either solely on the islet or also on the other two islets of the cluster

(Glarombi and Panteronissi, both of them larger in size). Indeed, the former seems more likely as no other snakes were observed during an island-wide herpetofauna survey of all three islands in the cluster, and Tigani's small size likely places a large constraint on the carrying capacity of top predators. *Natrix natrix*, has been found on both of the two nearest large-islands: Paros and Antiparos (BUCHHOLZ 1955; GRUBER & FUCHS 1977; CATTANEO 2010). The linear distance from Tigani to Paros is 1.5 km, and to Antiparos, 3.6 km. The authors hypothesize this individual colonized Tigani by swimming from Paros, as humans seldom visit Tigani, and *N. natrix* is known for its swimming ability (VALAKOS et al. 2008). The presence of this snake on Tigani raises questions about its distribution in the Archipelago, over-water dispersal capabilities, and ability to inhabit a resource-limited small-island ecosystem where amphibian prey is not available.

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AUTHORS: Angus MOSSMAN < angus.mossman@yale.edu >; Kathryn CULHANE < kathryn.culhane@yale.edu >; Zachary MILLER < zachary.miller@yale.edu >, Department of Ecology and Evolutionary Biology, Yale University, New Haven, CT, USA; Kinsey M. BROCK, University of Michigan, School of Natural Resources and Environment, Ann Arbor, MI, USA < kbkinsey@umich.edu >; Panayiotis PAFILIS, University of Athens, Department of Zoology, School of Biology, Greece < ppafil@biol.uoa.gr >; Colin M. DONIHUE (corresponding author; < colin.donihue@yale.edu >) School of Forestry and Environmental Studies, Yale University, New Haven, CT, USA.