

caracteres externos se trataría de un caso compatible con la hiperpigmentación (Rivera *et al.*, 2001a). Esta anomalía se podría explicar por la falta de iridóforos, causante de la atenuación en los tonos verdes propios de la especie, y asimismo por una mayor cantidad de melanófo-

ros (hiperpigmentación), responsables de los tonos pardo rojizos, y de la pérdida del patrón manchado ordinario para la especie. Se trataría, por tanto, del primer caso documentado de una anomalía por exceso de pigmentación en tritón pigmeo.

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The fish dies by the mouth. And the herps...

Iván Ruiz Barranco¹ & Gabriel Martínez del Mármol Marín²

¹ Cl. Cáceres, 15. 1º izda. 28045 Madrid. Spain. C.e.: ivan.ruiz.barranco@gmail.com

² Cl. Pedro Antonio de Alarcón, 34. 5º A. 18002 Granada. Spain

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RESUMEN: Se describen sendos casos en que una rana verde común y una salamanquesa de cruz aparecen muertos en circunstancias que sugieren que murieron cuando se estaban alimentando. En el primero de ellos la causa posible fue el tamaño desproporcionado de la presa respecto al del depredador, mientras que en el otro supuesto la causa aparente sería el envenenamiento del depredador por su presa.

Amphibians and specially reptiles are known in part for the ability of some species to ingest huge preys. The most famous case is the snakes, with some radical examples like pythons eating bears in Asia or kangaroos in Australia (Fredriksson, 2005), *Naja nivea* swallowing adults *Bitis arietans* in Africa (Layloo *et al.*, 2017), in the Americas *Drymarchon* sp. eat other colubrid snakes sometimes larger than itself or even adult *Lachesis* sp. individuals (the genus with the largest viper species of Earth; Boos, 2001), and in Europe the small *Macroprotodon brevis* usually prey in very large preys such as amphibiaenians (Pleguezuelos, 2015) and *Malpolon monspessulanus* swallow other large snakes like adult *Hemorrhoids hippocrepis* or conspecifics (González de la Vega, 1988). Apart of snakes, other very known cases of amphibians or reptiles that feed on large preys are monitors, with the example of the big *Varanus komodoensis* swallowing whole goats (Forth, 2010) or the smaller desert monitor *Varanus griseus* eating adults *Uromastyx* sp. (Geniez *et al.*, 2004) and in case of amphibians a good example are bullfrogs with extraordinary big mouths to swallow huge preys as birds or other big anurans (Vimercati & Measey, 2015). In some cases, the interesting of this behavior is not only the size, but the dangerous of the prey. A good example are snakes of the genus *Lampropeltis* that often feed on large vipers of the genus *Crotalus*, that inject their highly toxic venom in the colubrid without serious consequences due to the immunity (Weinstein *et al.*, 1992) or Southern Rock Pythons (*Python natalensis*) swallowing impalas with large and sharp horns thanks to an extreme elastic but hard skin (Branch, 2016). However, the strong appetite of these animals sometimes can be an enemy, provoking the death of the predator by different circumstances. We describe in this note two different predation scenarios that end in the death of both predator and preys apparently by two different causes.



Figure 1: Dead adult *Pelophylax perezi* with a dead *Psammotromus algirus* in the mouth. Málaga (Spain).

Figura 1: *Pelophylax perezi* adulta muerta con un *Psammotromus algirus* muerto en la boca. Málaga (España).

Possible cause of death: size of the prey

In a water pond of the Sierra de las Nieves National Park (Latitude 36.63, Longitude -5.06; 1197 masl; Málaga province, Spain), in June 8th, 2022 was found a dead adult *Pelophylax perezi* (López Seoane, 1885) with a dead adult *Psammotromus algirus* (Linnaeus, 1758) in the mouth (Figure 1).

Water frogs of the genus *Pelophylax* are opportunistic species that prey in mostly animals that can swallow (AmphibiaWeb, 2022a). Specifically, for *Pelophylax perezi* a wide spectrum of preys has been recorded including mainly invertebrates, but also punctually vertebrates such as small birds or mammals, anurans and reptiles (*Timon lepidus* and *Gallotia galloti*; Egea-Serrano, 2014; AmphibiaWeb, 2022b).

In a great part of Andalusia (Southern Spain), one of the most common amphibian species is *P. perezi*, and one of the most common reptile species is *P. algirus* (J.P. González de la Vega, personal communication), so the encounter between both species may happen very often, especially around water courses where the abundance of potential prey for the green frog is likely higher than in drier places.

In this case the frog had a snout vent length of approximately 7 cm, same snout vent length approximately of the lizard that also had a large tail of over 10 cm. Whereas probably the adult frogs could eat juvenile lizards, large lizard specimens could probably not be swallowed easily. The natural behavior in this case should be that the frog releases the prey seeing that is not possible to be eaten, although anti-natural mistakes seem to occur sometimes.

Possible cause of death: venom of the prey

In December 6th, 2022 an adult *Tarentola annularis* (Geoffroy Saint-Hilaire, 1827) was found dead inside a human structure to conduct water tubes in the surrounding of Smara (Latitude 26.51, Longitude -11.98; 358 masl; Morocco-Western Sahara). These structures act as traps for many species of reptiles of the local herpetofauna, however they are used as refuge to most species of the *Tarentola* genus (Martínez del Mármol *et al.*, 2019). In several trips to the area over 100 specimens of this species and *Tarentola hoggarensis* (Werner, 1937; *T. panousei* Pasteur, 1959, according to Koppetsch & Böhme, 2022) were found inside these structures, going inside or outside easily thanks to their ability to move by vertical surfaces.

The dead gecko had inside a dead scorpion that we tentatively assign to the genus *Hottentotta* Birula, 1908 (Figure 2; Turiel, 2014; Kamel *et al.*, 2022), a genus of highly venomous species (Sousa *et al.*, 2011; Boghozian *et al.*, 2021) that we suspect that was the cause of death of the large gecko that had a snout-cloacal length of 14 cm, estimating the proportion from a rule of three (using live specimens of the same species) that with tails the total length would have reached approximately 23 cm.

Tarentola annularis is one of the biggest species of the genus so although their main preys are invertebrates, they can also feed

on big preys such as lizards, other geckos, or even small mammals (Schleich *et al.*, 1996; Crochet & Renoult, 2008). While there are many Gekkonid species that include scorpions in their diet, like the genus *Ptyodactylus* that is also with *Tarentola* in the Phyllodactylidae family (Polis *et al.*, 1981; Zlotkin *et al.*, 2003), there is apparently not any specific record in the genus *Tarentola* (Hódar *et al.*, 2006; Trape *et al.*, 2012; Salvador, 2016). That is an interesting aspect considering that at least in Morocco both *Tarentola* species and scorpions share habitat in a great part of their range according to our personal field experience.



Figure 2: Dead adult *Tarentola annularis* with a dead adult *Hottentotta* sp. inside, photographed thanks to the damages in the skin of the gecko that allowed us to see inside it. Smara (Morocco).

Figura 2: *Tarentola annularis* adulta muerta con un adulto de *Hottentotta* sp. muerto en su interior, fotografiado gracias a los daños en la piel del gecko que nos permitió ver dentro de él. Smara (Marruecos).

Although Zlotkin *et al.* (2003) suggest that the gecko species could acquire immunity to the preys of the environment, this case suggest that sometimes this could not happen. In fact, other studies show that geckos have no protection whatsoever against the high toxicity of scorpions. According to recent observations in geckos from arid ecosystems of the genus *Coleonix*, they have developed a specific strategy to hunt scorpions by avoiding being stung in the process of capture. A complete lack of this behaviour is observed when they prey on non-venomous prey such as arthropods of similar size (Dial, 1978; Bels & Whishaw, 2019). Scorpions are caught at a higher speed, with the gecko then executing a whip-like movement with lateral and very violent head jerks. Apparently, the scorpion is severely damaged, as its body is subjected to strong tensions, very damaging twists and even blows against the ground. The scorpion is observed to be immobilised by internal failure and the gecko proceeds to chew and swallow it (Whitford *et al.*, 2022). It is logical to think that other gecko genera typical of arid ecosystems, such as *Stenodactylus* or *Tarentola*, have developed

similar methods to attack and prey on highly venomous scorpions, such as *Androctonus* and *Hottentotta* (Polis *et al.*, 1981).

In the present case (an adult *Tarentola annularis* with the remains of the telson of *Hottentotta* sp. inside) such predatory behaviour did not have the desired effect on the gecko. We ruled out that the gecko was stung, as the toxicity of these arachnids is probably fatal to these small reptiles, having made subsequent digestion impossible. Scorpions are an important part in the ecosystems of the Sahara and pre-Sahara areas with a biomass that can proportionally exceed that of all vertebrates (Polis & Yamashita, 1991), and constitute a very important resource in the diet of small predators (e.g. *Acanthodactylus erythrurus* group, *Scincus* sp., *Varanus griseus*, *Echis pyramidum* species group; Schleich *et al.*, 1996; Escoriza *et al.*, 2009), so a more comprehensive study should be carried out to know better the interactions between *Tarentola* species and scorpions.

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First record of partially melanistic individual of *Cerastes vipera* (Squamata: Viperidae)

Pablo García Antón¹, Vladimir Peranic² & Gabriel Martínez Del Mármol Marín³

¹ Universidad Carlemany. Av. Verge de Canòlich, 47. AD600 Andorra. C.e: pablogarciaanton@gmail.com

² Limesstraße, 5-3. 74535 Mainhardt. Germany.

³ Cl. Pedro Antonio de Alarcón, 34. 18002 Granada. Spain.

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RESUMEN: La presente nota da a conocer el primer caso documentado de un ejemplar parcialmente melanístico en el género *Cerastes*, concretamente en la especie *C. vipera*. La descripción de la anomalía cromática del ejemplar se acompaña de una breve revisión de la variabilidad de patrones de coloración en esta especie y la distribución de las mismas lo que plantea interesantes interrogantes sobre su potencial adaptativo en diferentes contextos ecológicos y climáticos.