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Report of a negative interspecific interaction between *Cordylus subtaenellatus* and *Pachydactylus montanus* in southern Namibia

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RESUMEN: Durante una expedición diurna en KumKum, un área protegida de gestión privada localizada en el sur de Namibia y perteneciente al bioma del Nama Karoo, el 19 de agosto de 2019 fue observado un evento de interacción interespecífica negativa entre un ejemplar de *Cordylus subtaenellatus* y un ejemplar de *Pachydactylus montanus*.

Interactions between species are called interspecific interactions and represent one of the key functional aspects of ecosystem dynamics. Interspecific competition is often caused by mutual exploitation of limiting resources such as food and space (exploitation competition) or by directly altering the behaviour of other individuals/species through territoriality and non-territorial fighting (interference competition). Actually, interference competition only makes sense in the framework of exploitation competition, so both are closely related (Tilman, 1987). Interference competition between lizard species has been documented several times (Cody, 1969; Hess & Losos, 1991; Downes & Bauwens, 2002; Langkilde & Shine, 2004; Žagar *et al.*, 2015).

The Dwarf Plated Lizard (*Cordylus sub-tessellatus*) is a medium to small diurnal lizard species with a maximum snout-vent length of ca. 57 mm (Bauer *et al.*, 1999). These lizards are marked with a black body and two cream or yellow

dorsolateral stripes that run from the snout onto the tail. These stripes become bright blue on the tail and merge about a third way along its length (Alexander & Marais, 2007). This species is usually associated with rocky habitats, where it spends most of its time hidden in rock crevices to avoid predation, limiting its activity to a few hours, which it uses to feed on medium-sized arthropods (Loehr, 2006). This species is distributed from southern Angola to south-west South Africa.

The Montane thick-toed gecko (*Pachydactylus montanus*) is a small nocturnal gecko species that lives in rocks and spends its inactive periods in crevices or under stones. Its colouration consists of a pale cream or pinkish background with relatively large brown spots, the intensity of the colouration increasing on the tail (Uetz *et al.*, 2022). It feeds on small invertebrates, such as spiders, moths, ants, termites and insect larvae (Alexander & Marais, 2007). This species is distributed from southern Namibia to western South Africa.

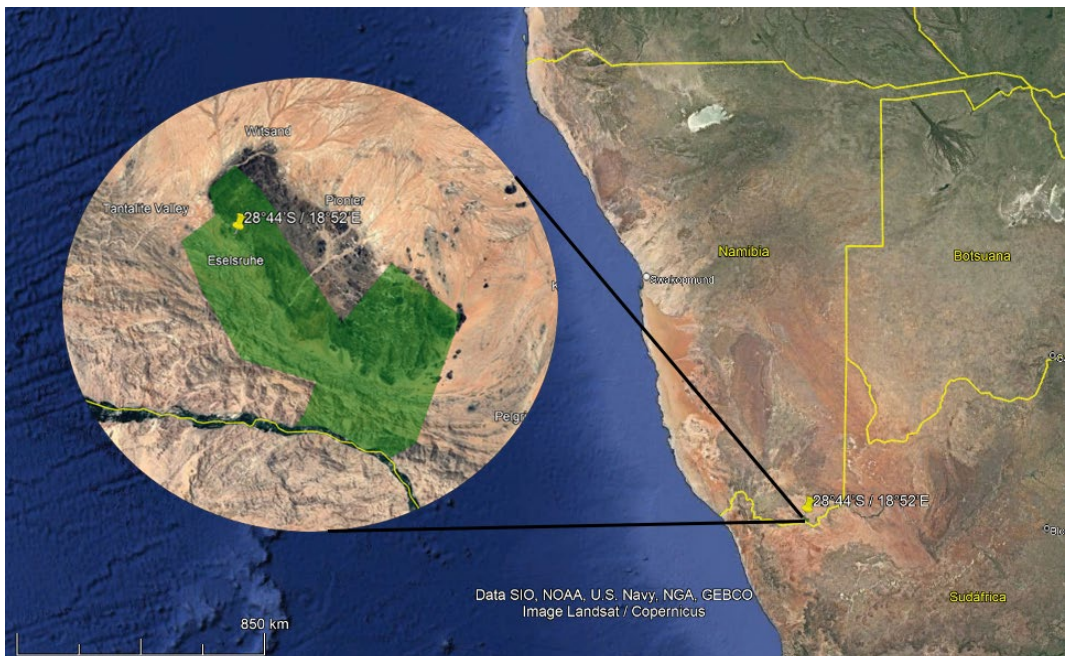


Figure 1: KumKum, study area where the observation occurred.

Figura 1: KumKum, área de estudio donde tuvo lugar la observación.



Figure 2: Rocky habitat characteristic of the Nama Karoo biome.

Figura 2: Hábitat rocoso característico del bioma Nama Karoo.



Figure 3: The individual of *C. subtesellatus* biting and shaking the individual of *P. montanus*.

Figura 3: Individuo de *C. subtesellatus* mordiendo y sacudiendo a individuo de *P. montanus*.

On August 19th, 2019, at ca. 10:00 (local time), we observed an event of interference competition between a specimen of *C. subtesellatus* and a specimen of *P. montanus* during an expedition in KumKum, a privately managed protected area in southern Namibia belonging to the Nama Karoo biome (28°44'S / 18°52'E, 750 masl) (Figure 1). Animals were active during the daytime; the ambient temperature was around 20° C. The habitat is a rocky area with some sandy patches and scarce vegetation consisting mainly of *Aloidendron dichotomum*, *Euphorbia gregaria* and small shrubs (Figure 2). The first thing we observed was the individual *P. montanus*, in full sunlight, on a rock. This behaviour seemed strange to us, due to the nocturnal habits of this species. From a nearby crevice came the individual of *C. subtesellatus*,

which rushed towards *P. montanus*, biting its right foreleg and shaking it aggressively (Figure 3). Upon noticing our presence, *C. subtesellatus* released *P. montanus*, which quickly moved away from the rock where the aggression occurred. After staring at us for a few seconds, *C. subtesellatus* returned to hide in the crevice from which it emerged. Although it is difficult to state with certainty the cause of this behaviour, territorial competition for shelter or food resources could be the reason. Given that the distribution of both species overlaps over much of their range, this difficult to record behaviour could be usual.

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Observación del comportamiento de tanatosis en culebra bastarda (*Malpolon monspessulanus*): una estrategia defensiva

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La tanatosis, o inmovilidad tónica, es un comportamiento defensivo que se observa en muchos grupos de animales; consiste en fingir la muerte adoptando una postura inmóvil para evitar ser depredado. Se considera un recurso último para escapar de situaciones

críticas (Gerald, 2008; Rogers & Simpson, 2014). Este comportamiento se ha descrito en diversos géneros de serpientes (Carpenter & Ferguson 1977; Gerald, 2008; Magallón *et al.*, 2021), incluida la culebra bastarda (*Malpolon monspessulanus*) en el norte de Italia (Sannolo *et al.*, 2014).



Figura 1: Aspecto de la culebra bastarda (*Malpolon monspessulanus*) cuando fue encontrada en el Parque Natural de Sierra de Cardena y Montoro: a) vista dorsal; b) vista ventral.