On the syntopy of *Saurodactylus brosseti* and *Saurodactylus fasciatus*, a new record

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RESUMEN: La presente nota proporciona el segundo registro sobre sintopía entre *Saurodactylus fasciatus* y *Saurodactylus brosseti*. Ambas especies fueron encontradas separadas por escasos metros en las inmediaciones de Oulad Ayad, provincia de Beni Mellal (Marruecos).

It is not unusual that species of the same genus co-occur in the same habitat (Rivas, 1964). Among sauropsids, there are numerous examples of intra-genus syntopy, showing ecological segregation depending on several factors such as prey preferences (Robles & Halloy, 2008) or micro-habitat selection (Faria & Araujo, 2004; Martínez-Freiría, 2009; Galán et al., 2013). Syntopy among species of the same genus in Morocco has been recorded for species within the genera *Mesalina*, *Acanthodactylus*, *Natrix*, among others, which shows different microhabitat use or different ecological requirements (Bons & Geniez, 1996).

To understand patterns of clades’ distribution it is required an understanding of speciation modes (Martínez-Freiría, 2009). Geological barriers like the uplift of the Atlas and Rif mountains in Morocco drives populations toward vicariant process in many species (Brown et al., 2002; Fritz et al., 2006; Sanchez & Escoariza, 2014). Nevertheless within *Saurodactylus*, little is known about the processes that have promoted the species formation. Rato & Harris (2008) suggest that speciation among *Saurodactylus* predates these geological barriers.

The genus *Saurodactylus* contains three small gecko species endemic to the Magreb: *Saurodactylus mauritanicus* (Duméril & Bibron, 1836), *Saurodactylus brosseti* (Bons & Pasteur, 1957) and *Saurodactylus fasciatus* (Werner, 1931). The taxonomic status of each species is well supported. However the relationships within the genus and between *Saurodactylus* (*S. fasciatus* especially) and the other sphaerodactyl geckoes remains unclear (Gamble et al., 2008; Rato & Ha-
According to Rato & Harris (2008) and Pyron et al. (2013), the genus *Saurodactylus* is paraphyletic, with *S. fasciatus* more closely related to the genus *Teratoscincus*. Nevertheless, the monophyly of the genus *Saurodactylus* is obtained by Gamble et al. (2011).

*S. mauritanicus* is the only member of the genus that can be found out of Morocco and Western Sahara, with its distribution encompassing the north east of Morocco to western Algeria. *S. brosseti* and *S. fasciatus* are Moroccan endemics (including Western Sahara), the first one with a western range in Morocco, through the Atlantic coastal areas to the western slopes of the Atlas Mountains, and extending to the Draa Valley; it also ranges across the northern coastal part of the Western Sahara (Bons & Geniez, 1996; Geniez et al., 2004). The distribution of *S. fasciatus* fits between those of *S. brosseti* and *S. mauritanicus*, consisting of a few areas situated north and west of the High and Middle Atlas and south west of the Rif (Bons & Geniez, 1996; Scheilch et al., 1996).

*S. fasciatus* and *S. mauritanicus* are separated by the Rif, with the distances between the closest localities of both species being about 75 km (Bons & Geniez, 1996). While the only locality known with syntopy of *S. fasciatus* and *S. brosseti* is in Afouer (Bons, 1967), these taxa have been also recorded less than 25 km from each other in the Khénifra region (Mellado & Mateo, 1992; Bons & Geniez, 1996).

In this note we provide a new record, 25 km east to Afouer, where *S. fasciatus* occurs in syntopy with *S. brosseti*. On the 19th of April 2014 at 20:00 h, both species were found around Oulad Ayad (gps data: 32.18° N / 6.794° W) 100 m from each other. The habitat structure where we found *S. fasciatus* consists on grassland with many stones, dispersed shrubs and cultivated trees, while *S. brosseti* was occupying a sloping surface characterized by a highly rocky area with shrubs. The locality is 670 masl with semi-arid stage, where the annual rainfall average is 415 mm and 19 ºC of average annual temperature; the warmest month of the year is August while January is the coldest one, with an average temperature of 27.8 ºC and 11.2 ºC respectively (Climate-data.org, 2014).

Generally, *S. brosseti* inhabits more arid stages than *S. fasciatus*; Saharan, semi-arid and arid bioclimatic zones are occupied by *S. brosseti*, whereas *S. fasciatus* inhabits semi-arid and sub-humid localities (Bons & Geniez, 1996; Fahd & Pleguezuelos, 1996; Harris et al., 2008; Barata et al., 2011). Thus, semi-arid regions are suitable for the presence of both species. Syntopy between these two species should be investigated in the Khénifra region (Mellado & Mateo, 1992) as well as in the area between Beni Mellal and Bzou. Likewise, in the area that comprises Boulaouane and Had Mzoura, where their distribution patterns overlap in a semi-arid stage, new fieldwork should also be carried out.

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La mayoría de las observaciones de *Chelonia mydas* en las costas españolas corresponde a ejemplares juveniles procedentes de las distintas zonas de puesta existentes en el Océano Atlántico. En la presente nota se proporciona información sobre dos observaciones (una de ellas fotografiada) de ejemplares juveniles procedentes de las distintas zonas de puesta existentes en el Océano Atlántico.

**New records of Chelonia mydas off the Spanish Mediterranean coast**

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**Key words:** Spain, green turtle, Mediterranean Sea, Calpe.

**Resumen:** La mayoría de las observaciones de *Chelonia mydas* en las costas españolas corresponde a ejemplares juveniles procedentes de las distintas zonas de puesta existentes en el Océano Atlántico. En la presente nota se proporciona información sobre dos observaciones (una de ellas fotografiada)