stage. This small pond was not the primary breeding area for the species, but as mining activity is still active on the SCA, the landscape has changed in the last year, forcing *D. galganoi* to select suboptimal breeding habitats.

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Human-mediated syntopy between *Cerastes cerastes* and *Daboia mauritanica* in the lower Drâa Valley, Morocco

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Resumen: Marruecos cuenta con siete especies de víboras, con distribuciones alopátricas, para las que nunca se ha citado coexistencia. No obstante, se ha identificado una zona de potencial simpatría entre cinco de estas especies en la región suroeste del país. En esta nota presentamos un caso de sintopía entre una especie sahariana, *Cerastes cerastes*, y otra mediterránea, *Daboia mauritanica*, que quedaron atrapadas en la cámara de decantación de un aljibe. La observación ocurrió en el bajo Drâa, suroeste de Marruecos; se trata de una zona de transición ambiental, donde las dos especies deben encontrarse en simpatría y probablemente también con una tercera especie de origen afro-tropical, *Echis pyramidum leucogaster*.

Palearctic vipers (Serpentes, Viperinae) exhibit allopatric distributions at regional scale (see Sindaco *et al.*, 2013). This pattern frequently occurs at local scale too (e.g. Brito & Crespo, 2002; Martínez-Freiría *et al.*, 2006, 2008), being mediated by distinct climatic requirements and interspecific competition (Luiselli, 2006). Some species, however, overlap their distributions at local scale (e.g., Saint-Girons *et al.*, 1975; Monney, 1996) and even occur in syntopy (e.g. Martínez-Freiría *et al.*, 2006; Mebert *et al.*, 2015). Syntopy can be favoured by human mediated landscape transformation; with pathways, for instance, allowing specimens movement to particular thermoregulation spots (see Mebert *et al.*, 2015).

Figure 1: Water cistern in the surroundings of Aouinet Lahna.
Figura 1: Aljibe en los alrededores de Aouinet Lahna.

Seven species of vipers belonging to five genera occur in Morocco (Bons & Geniez, 1996). This assemblage consists of species with major allopatric distributions, resulting from distinct biogeographical affinities (i.e. Palearctic, including three Mediterranean and two Saharan species; and Afrotropical, with one Sahelian and one Afrotropical generalist species) and ecological requirements (Bons & Geniez, 1996; Brito *et al.*, 2011; Sindaco *et al.*, 2013). However, some species can be found in adjacent areas and similar habitats (e.g., *Bitis arietans*, *Cerastes cerastes* and *Daboia mauritanica* in South Western Morocco; see Brito *et al.*, 2011). In fact, by applying ecological niche-based models, potential sympatry for five of these species was found in an area of environmental transition located between the southern slopes of the Anti-Atlas to the As Saquia Al Hamra river valley (South Western Morocco; Brito *et al.*, 2011). Landscape transformation in this region is still reduced but there is a high proliferation of water cisterns for watering livestock which act as death traps for vertebrate fauna (see García-Cardenete *et al.*, 2014).

In April-May 2016 the authors of this note participated in a fieldtrip to South Western Morocco with the aim of evaluating the effectiveness of corrective measures performed in water cisterns to prevent vertebrate fauna causalities. On 1st May we revised a water cistern located in the surroundings of Aouinet Lahna (lower Drâa valley; 28.5N, 9.7W; Figure 1). When digging the sand inside the sedimentation chamber (of approximately 1.5 x 1.5 x 3 m), we found one specimen of *C. cerastes* and another of *D. mauritanica*. The first specimen was an adult female of 515 mm of snout vent length (SVL), while the specimen of *D. mauritanica* was a subadult male with 310 mm of SVL, which was skin shedding (Figure 2). The water cistern was located in a flat area with compacted sand, small rocks and sparse bushes (e.g. *Launaea arborescens*) and trees (*Argania spinosa*, *Acacia* sp.) surrounded by rocky hills. The region is in the transition between Mediterranean *Acacia-Argania* dry woodlands and North Saharan steppes ecoregions (Olson *et al.*, 2001), having semi-continental arid climate (Bons & Geniez, 1996) with 95 mm of annual precipitation and 19.6ºC of average annual temperature (Hijmans *et al.*, 2006).

To our knowledge, this is the first observation of syntopy between two viper species in

Figure 2: Specimens of *C. cerastes* (right) and *D. mauritanica* (left) found in the water cistern.
Figura 2: Ejemplares de *C. cerastes* (derecha) y *D. mauritanica* (izquierda) encontrados en el aljibe.

Morocco. Specimens were found together inside the sedimentation chamber of the water cistern but we do not know if they met before falling inside it. Furthermore, coexistence inside the chamber was prolonged in time as both specimens were unable to get out of it. Certainly, this observation signals the region of Aouinet Lahna as holding sympatric populations of these two vipers, and even opens the door to the possibility of coexistence between them. *Cerastes cerastes* is a Saharan species which selects dry and warm areas along its distribution; in its northern limit, the species occurs in semi- and arid steppes surrounding the desert (Schleich *et al.*, 1996; Brito *et al.*, 2011). On the other hand, *D. mauritanica* is a Mediterranean viper which requires milder temperatures along its distributional range; as far it goes to the south, the species becomes restricted to mountain and coastal regions where it likely finds these climatic conditions (Schleich *et al.*, 1996; Brito *et al.*, 2011). Located in an environmental transition zone (Olson *et al.*, 2001), Aouinet Lahna has suitable environmental and habitat conditions for both species occurrence (Brito *et al.*, 2011). Interestingly, the Sahelian viper *Echis pyramidum leucogaster* has been recorded from the vicinity of the area (the nearest record is located less than 10 km of distance; Bons & Geniez, 1996; Brito *et al.*, 2011), suggesting that another viper species could be also occurring in sympatry with the other species. Further sampling campaigns should be developed in the region to identify distributional patterns and the degree of overlap for these species, as well as to infer the possible ecological mechanisms that species might show to reduce interspecific competition (see Luiselli, 2006).

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New reports on predation of *Salamandra algira* larvae in Morocco

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Resumen: Se describen dos casos de depredación sobre la salamandra norteafricana *Salamandra algira*, un anfibio endémico de Marruecos y Argelia del que se dispone de escasos datos sobre las interacciones que establece con otras especies. Asimismo se destaca la importancia que puede suponer la depredación sobre algunas poblaciones marginales de *S. algira*, particularmente en zonas donde los medios acuáticos son escasos y en condiciones donde los depredadores / presas se concentran.

Fire salamanders (genus *Salamandra*) are amphibians characteristic of the Western Palearctic ecoregion (Weisrock, 2001). These salamanders present aposematic coloration and noxious cutaneous secretions that reduce their risk of predation. Thus few predators prey regularly on these species (García-París *et al.*, 2004). However, predation was reported in several occasions, e.g., adults of *Salamandra inframaculata* as prey of *Natrix tessellata* (Böhme *et al.*, 2013) and *Salamandra salamandra* adults predated by mammals (*Sus scrofa*, *Mustela putorius*, *Meles meles*, *Lutra lutra*, *Erinaceus europaeus*, *Rattus rattus*), reptiles (*Natrix natrix*, *Natrix maura*, *Vipera seoanei*), birds (*Falco tinnunculus*, *Buteo buteo*, *Strix aluco*, *Pica pica*) and its larvae by fish (*Salmo trutta*, *Cottus gobio*), birds (*Cinclus cinclus*), mammals (*Neomys fodiens*), amphibians (*Lissotriton helveticus*, *Ichthyosaura alpestris*, *Triturus marmoratus*, *Calotriton asper*, *Calotriton arnoldi*, *Salamandra salamandra*), reptiles (*Natrix maura*) and invertebrates (*Haemopis saguisuga*, coleoptera and odonata) (Braña, 1988; García-París *et al.*, 2004; Morales *et al.*, 2004; Thiesmeier & Grossenbacher, 2004; Herrador *et al.*, 2006; Villero *et al.*, 2006; Velo-Antón & Cordero-Rivera, 2011; Amat & Carranza, 2014).

The North African fire salamander (*Salamandra algira* Bedriaga, 1883) is one of the southernmost species of the genus *Salamandra*, being confined to the humid regions of northern Morocco and Algeria (Schleich *et al.*, 1996; Escoriza & Ben Hassine, 2014). There are no records about predatory events on *S. algira*.

Here we describe two cases of predation on *S. algira* in Morocco (Figure 1). In November 2007 in the Beni Snassen massif we found an adult form of *Nepa cinerea* devouring a larva of *S. algira spelaea* (Figure 2) at 838 m of altitude in a natural spring. In May 2015 we found an individual of *Natrix maura* that regurgitated three