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A case of parasitism by the Ixodidae family on *Coronella girondica*

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Resumen: La culebra lisa meridional (*Coronella girondica*) es un pequeño ofidio saurófago con distribución circunmediterránea occidental. En esta nota se describe un caso de ectoparasitismo por una garrapata de la familia Ixodidae en Málaga. Se trata de una observación que aporta un dato interesante sobre este tipo de parasitismo en dicha especie de reptil.

The Southern smooth snake (*Coronella girondica*) is a small snake species distributed across the Western Mediterranean Sea. It mainly forages on small lizards and other reptiles, and it is threatened and becomes scarce in the Iberian Peninsula due to farming, forest fires, and wild boar overpopulation (Santos & Pleguezuelos, 2015). In this note we describe one case of *C. girondica* parasitism by a tick, family Ixodidae. For the identification of the tick, we have used as a reference the Barnard & Durden's study (2000), although a specific level identification was impossible without the collection of the parasite. The observation was made in the limit between Sierra de las Nieves Natural Park and Sierra Bermeja (coordinates: 30S 317257; 4056717; 1273 masl), two southern mountain ranges in the Malaga province, on July 7th, 2016 at 8:47 pm. The animal was thermoregulating over a peri-

Figure 1: *Coronella girondica* with a tick belonging to the family Ixodidae attached in Sierra de las Nieves Natural Park-Sierra Bermeja.
Figura 1: *Coronella girondica* con una garrapata perteneciente a la familia Ixodidae adherida en el Parque Natural Sierra de las Nieves-Sierra Bermeja.

dotite ground on a rural lane in a *Pinus pinaster* habitat. The tick was attached to the snake in the space between the eye and the supralabial and preocular scales (Figure 1). Other Ixodidae ticks were located on the ground near the snake.

Infestation by ticks and mites are common in reptiles. There is abundant bibliography on infestation by ticks, like the studies of Andrews *et al.* (1982), Barker *et al.* (2003) or Hassl (2016) in Europe. Cases of snake infestations also have abundantly reported, regarding both importation animals (Mihalca, 2015) and field studies (Norval *et al.*, 2009). As Horak *et al.* (2006) describes, it is possible that ticks switch from mammal species, either domestic or wild, to snakes as alternative hosts. In the study area, there are good populations of several wild mammal species like *Cervus elaphus*, *Sus scrofa*, or *Capra pyrenaica*, among others, so these animals may be the reservoir of ticks. Tomé *et al.* (2012) analyzed the prevalence of *Hepatozoon*, a protist with a cycle that includes an invertebrate vector like ticks, in four native snake genera: *Hemorrhois*, *Malpolon*, *Natrix* and *Rhinechis*, getting positives in the two first genera and the higher prevalence in *Hemorrois*. This shows that tick parasitism produces a complex interaction system that could influence snake health, demography and conservation. We consider interesting to investigate this kind of relationship in order to improve the knowledge about Iberian snakes, Ixodidae species and other parasites implicated in it with the aim of getting important and useful information to the conservation of these group of reptiles.

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