

New and recent herpetological records from Soria, Spain

Matthijs Hollanders¹, Filipe Serrano², Tim Leerschool³, & Wouter Beukema⁴

¹ Wageningen University & Research, Droeveendaalsesteeg, 2. 6708 PB Wageningen. The Netherlands. C.e.: matthijs.hollanders@gmail.com

² Department of Ecology, University of São Paulo. Rua do Matão, Travessa 14. São Paulo. Brazil.

³ Mariabad, 216. 6411 MH. Heerlen. The Netherlands.

⁴ Department of Pathology, Bacteriology and Avian Diseases. Faculty of Veterinary Medicine. Ghent University. Salisburylaan, 133. 9820 Merelbeke. Belgium.

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RESUMEN: Presentamos nuevos registros de distribución en malla UTM de 10x10 km para *Psammotromus algirus*, *Coronella austriaca* y *Vipera latastei* en Soria, Castilla y León (España). Así mismo reportamos la sintopía de *Podarcis muralis* y *Podarcis liolepis* en dicha área. Adicionalmente, proveemos información detallada de la ocurrencia de 17 especies de reptiles y anfibios como contribución al esfuerzo de elaboración de mapas de herpetofauna de Soria.

Despite increasing attention for the impact of climate change and introduction of emerging infectious diseases on reptiles and amphibians, habitat destruction remains the first and foremost threat to these vertebrates in many European regions, including the Iberian Peninsula (e.g., Cox *et al.*, 2006; Ribeiro *et al.*, 2009). Herpetofaunal richness and endemism in the Iberian Peninsula is high (Sillero *et al.*, 2014), yet not fully covered by the protected area network (Araújo *et*

al., 2007). It is therefore highly important to obtain detailed knowledge on the distribution of species to conserve them, which may for instance permit informing policy makers in decisions about land management, or set a basis for later macroecological and evolutionary studies. To this end, various mapping initiatives have arisen during recent decades which greatly improved knowledge on reptiles and amphibians across Spain and Portugal (summarized in e.g., Pleguezue-

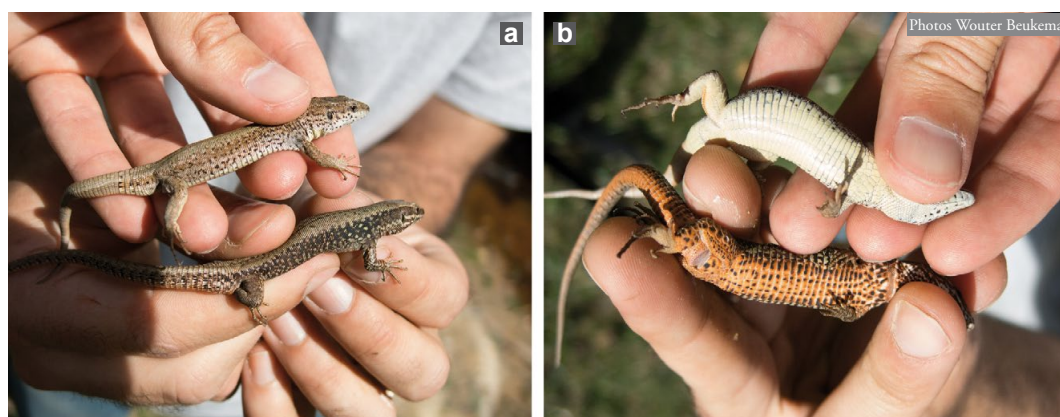


Figure 1: Dorsolateral a) and ventral b) views of *Podarcis liolepis* (top) and *Podarcis muralis* (bottom) found syntopically in Sierra de Urbión, Soria.

Figura 1: Vistas dorsolateral a) y ventral b) de *Podarcis liolepis* (arriba) y *Podarcis muralis* (abajo) encontradas sintópicamente en la Sierra de Urbión (Soria).

los *et al.*, 2002; Loureiro *et al.*, 2008; Sillero *et al.*, 2014). Nevertheless, many distribution data remain outdated, or are only available at coarse geographical extent, due to which collection of new or detailed occurrence records remains of great importance (Jetz *et al.*, 2012).

Between 13-15 and 18 April 2014, we visited the northern part of Soria province, Castile and Leon, Spain in order to sample several lacertid species as part of the Portuguese Biodiversity Conservation in a Changing World project, funded by FEDER through the InAlentejo program (2012-2014). We documented several new distribution records for reptiles during this period. Also, we reconfirmed occurrence of various reptile and amphibian species in areas from which only historical records were available, and/or from which distribution information was limited to that at coarse geographical scale (e.g., Schmidler, 1969; Salvador *et al.*, 1970; Arribas, 1982, 1983; De la Riva, 1985) (Annex 1). The distribution of reptiles and amphibians in Soria has traditionally been mapped at 10x10 km scale (summarized by Meijide *et al.*, 1994), due to which our aim, in addition to presenting the new records, is to provide detailed distribution data for all encountered species as a contribution to future mapping efforts. Distances reported below are measured in a straight line, as the crow flies.

Syntopy of *Podarcis muralis* and *Podarcis liolepis*. Members of the *Podarcis hispanicus* complex (*sensu lato*) generally occur in parapatry or sympatry with the distantly related *P. muralis* across the northern and central mountains of the Iberian Peninsula. Actual syntopy is uncommon, although local co-occurrence has been described in several cases (Llorente *et al.*, 1995; Galán *et al.*, 2013; Carneiro *et al.*, 2015). Syntopy between *P. muralis* and *P. liolepis* has been reported from at least Catalonia and Valencia (Llorente *et al.*, 1995; Pérez i de

Lanuzza *et al.*, 2012). To the best of our knowledge, syntopy of these species in Soria remains unknown (Schmidler, 1969), but is not unexpected, as occurrence in the same 10x10 km UTM squares was presented by for instance Arribas (1983) and Meijide *et al.* (1994). On 13 April 2014, *P. muralis* and *P. liolepis* (Figure 1) were found syntopically at two locations in the southern Sierra de Urbión ± 14 km NW of Abejar (41°50'24.0" N, 2°56'56.4" W; 41°50'34.8" N, 2°57'07.2" W; 1170-1174 masl). Both species were found along roadsides and streams in *Pinus* forest, where *P. muralis* was most abundant but restricted to the vicinity of streams or thickets near water, while *P. liolepis* occupied drier microhabitats such as exposed stone bridges or dry road banks. Similar niche differentiation has been described to occur in Catalonia, driven by differences in the rate of water loss (Carneiro *et al.*, 2015). The syntopic occurrence of *P. muralis* and *P. liolepis* in the Sierra de Urbión could provide interesting opportunities for future local research into niche differentiation and community ecology.

***Psammodromus algirus*.** On 14 April 2014, a single juvenile individual was seen ± 5 km west-south-west of Cueva de Ágreda (41°44'38.4" N, 1°56'38.4" W; 1202 masl) running along a sparsely vegetated rocky southeastern hillside. Other species observed at the same locality include *Timon lepidus* and *Chalcides striatus*.

***Coronella austriaca*.** On 13 April 2014, one sub-adult female was found ± 4.6 km east of Navaleno (41°50'20.4" N, 2°56'52.8" W; 1170 masl) while basking about 50 cm above the ground on dead branches (Figure 2c). This individual represents the first record within UTM WM03, thereby filling in the last UTM square for the Sierra de Urbión (Meijide *et al.*, 1994). The habitat was located on a north-fa-



Figure 2: Images of selected new herpetological records. a) *Alytes obstetricans pertinax*, b) *Natrix astreptophora*, c) *Coronella austriaca*, d) *Coronella girondica*, e) *Vipera latastei*, f) *Vipera latastei* emerging from a stonewall.

Figura 2: Imágenes seleccionadas de nuevos registros herpetológicos. a) *Alytes obstetricans pertinax*, b) *Natrix astreptophora*, c) *Coronella austriaca*, d) *Coronella girondica*, e) *Vipera latastei*, f) *Vipera latastei* emergiendo de un muro de piedra.

cing slope leading down to moist abandoned railroad tracks in a *Pinus*-dominated forest.

***Vipera latastei*.** On 14 April 2014, around 16:30, five individuals of *V. latastei* were found within 200 m of each other at an altitude between 1000 and 1030 masl in UTM WM61.

These sightings constitute the first records for this particular UTM grid cell. All five individuals were found on a south-facing slope, which was characterized by ruins and large, intensively managed agricultural fields bordered by shrubs overgrowing small stone walls. Four out of five individuals were basking on, or adjacent to, old

foundations at an air temperature of 23°C, while the fifth was moving along a small stone wall. Notable is that most individuals were covered by dirt (Figure 2e), perhaps suggesting that they recently emerged from hibernation sites (Figure 2f). Due to the sensitive nature of this locality, exact coordinates are not provided herein, but are available upon request. The discovery of multiple individuals within a short timeframe in heavily-managed agricultural landscape was unexpected, but gives hopeful prospects for

the potential future discovery of other persisting populations of this threatened viper in intensive agricultural landscapes (Santos *et al.*, 2006).

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Annex 1: Complete list of observations.

Species	Locality	WGS84	UTM	Altitude	Date	Comments
<i>Lisotriton helveticus</i>	± 4.6 km E Navaleno	41°45'N, 1°52'W	WM03	1156 m	14 April 2014	Overall morphology (Figure 2a) suggests presence of <i>ssp. peptinax</i> , rather than <i>abnogaurii</i> (see also Gonçalves <i>et al.</i> , 2015)
<i>Alytes obstetricans</i>	± 1.6 km SE Cueva de Ágreda	41°47'N, 2°46'W	WM92	1300 m	15 April 2014	
<i>Epidaleia calamita</i>	± 2.6 km SSE Abejar	41°50'N, 2°57'W	WM12	1102 m	13 April 2014	
<i>Hyla molleri</i>	± 4.6 km E Navaleno	41°56'N, 2°35'W	WM03	1156 m	14 April 2014	
	± 1 km NW Valdavellano de Tera	41°50'N, 2°57'W	WM3	1102 m	14 April 2014	
<i>Pelodytes perezi</i>	± 4.6 km E Navaleno	41°47'N, 2°46'W	WM03	1156 m	13 April 2014	
<i>Lacerta bilineata</i>	± 1 km S of Abejar	41°55'N, 2°40'W	WM12	1204 m	13 April 2014	
	± 3.3 km NNW El Royo	41°43'N, 1°49'W	WM24	1517 m	14 April 2014	
	± 2 km NW Beratón	41°45'N, 1°52'W	WM92	1334 m	14 April 2014	
	± 1.6 km SE Cueva de Ágreda	41°49'N, 2°59'W	WM92	1300 m	18 April 2014	
<i>Timon lepidus</i>	± 6 km E San Leonardo de Yagüe	41°47'N, 2°46'W	WM03	1101 m	13 April 2014	
	± 2.6 km SSE Abejar	41°44'N, 1°56'W	WM22	1102 m	13 April 2014	
	5 km WSW Cueva de Ágreda	41°43'N, 1°49'W	WM82	1202 m	14 April 2014	
	± 2 km NW Beratón	41°45'N, 1°52'W	WM92	1334 m	14 April 2014	
	± 1.6 km SE Cueva de Ágreda	41°50'N, 2°56'W	WM92	1300 m	15 April 2014	
<i>Podarcis muralis</i>	± 14 km NW of Abejar	41°50'N, 2°57'W	WM03	1170 m	13 April 2014	Figure 1; only red ventral color morph.
	± 14 km NW of Abejar	41°55'N, 2°40'W	WM03	1174 m	13 April 2014	Figure 1; only red ventral color morph.
	± 3.3 km NNW El Royo	41°45'N, 1°52'W	WM24	1517 m	14 April 2014	
	± 1.6 km SE Cueva de Ágreda	41°50'N, 2°56'W	WM92	1300 m	15 April 2014	
<i>Podarcis liolepis</i>	± 14 km NW of Abejar	41°50'N, 2°57'W	WM03	1170 m	13 April 2014	Figure 1
	± 14 km NW of Abejar	41°43'N, 2°1'W	WM03	1174 m	13 April 2014	Figure 1
	± 0.8 km NE Noviercas	41°45'N, 1°53'W	WM81	1086 m	14 April 2014	
	0.9 km SW Cueva de Ágreda	41°44'N, 1°56'W	WM92	985 m	18 April 2014	
<i>Psammotromus algirus</i>	5 km WSW Cueva de Ágreda	41°44'N, 1°56'W	WM82	1202 m	14 April 2014	New 10x10 km UTM record
<i>Chalcides striatus</i>	5 km WSW Cueva de Ágreda	41°43'N, 1°49'W	WM82	1202 m	14 April 2014	
<i>Anguilla fragilis</i>	± 2 km NW Beratón	41°43'N, 1°49'W	WM92	1334 m	14 April 2014	
<i>Natrix maura</i>	± 2 km NW Beratón	41°50'N, 2°56'W	WM92	1334 m	14 April 2014	
<i>Natrix astreptophora</i>	± 4.6 km east of Navaleno	41°50'N, 2°56'W	WM03	1170 m	13 April 2014	Figure 2b
<i>Coronella austriaca</i>	± 4.6 km east of Navaleno	41°47'N, 2°46'W	WM03	1170 m	13 April 2014	New 10x10 km UTM record; Figure 2c
<i>Coronella girondica</i>	± 1 km S of Abejar	41°45'N, 1°52'W	WM12	1132 m	13 April 2014	Figure 2d
<i>Vipera latastiei</i>	-	-	WM61	1000- 1030 m	14 April 2014	New 10x10 km UTM record; Figure 2e, f
	± 2 km NW Beratón	41°43'N, 1°49'W	WM92	1364 m	18 April 2014	