

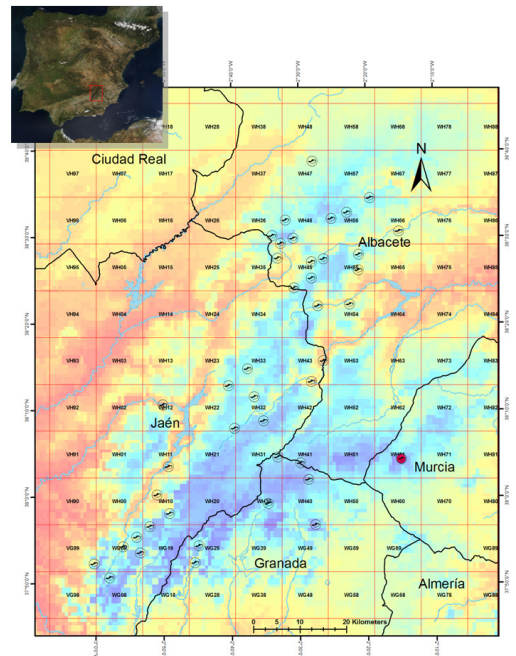
# First record of the Spanish *Algyroides*, *Algyroides marchi* (Lacertidae) in the Murcia Region, Southeast Spain

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**Abstract.** We report the first record of *Algyroides marchi*, Valverde 1958 in the Autonomous Community of the Region of Murcia, Southeast Spain. The species was found during a field excursion in the mountains of the municipality of Moratalla. This record results in a significant extension of the known distribution of the species, currently considered to be restricted to the Prebetic Mountains (Southeastern Spain) in the Autonomous Communities of Andalucía and Castilla-La Mancha, being therefore of great importance for the conservation programs at the national level.

**Keywords.** Lacertidae, *Algyroides marchi*, Moratalla, Murcia.

The Spanish *Algyroides*, *Algyroides marchi*, is a rock dwelling lacertid lizard endemic to the Prebetic mountains in Southeast Spain (Sánchez, 1982). These ranges constitute one of the narrowest distribution areas among the continental lacertids (Rubio, 2002). The species is listed as endangered in the IUCN red list (Pérez Mellado et al., 2008) due to its reduced area of occupancy (less than 500 km<sup>2</sup>) and to the continuous decline in the extent and quality of its habitat, as some populations are known to have disappeared (Rubio and Carrascal, 1994; Rubio and Palacios, 1998; Rubio et al., 2006; Pérez-Mellado et al., 2008). Within the area, the populations are not uniformly distributed but tend to concentrate in limited localities, occupying specific microhabitats; mainly shady and humid rocky places. Rubio and Carrascal (1994) showed that the species presence and abundance can be predicted by a few structural variables, with high consistency among the different geographical scales (regional, local and individual scales). The variables that characterise the typical localities favourable for the species are: relatively high altitude, high geomorphologic enclosing degree, and therefore short daily period of direct solar



**Figure 1.** Map of the Prebetic mountain range showing a portion of known *Algyroides marchi* localities, the red dot shows the new locality in the Murcia province. The background is an altitude grid map of the SRTM (Shuttle Radar Topography Mission) elevation database, from red ± 330 to blue purple 2380 m. a.s.l. The 10x10km grid where obtained from the atlas of the Amphibians and Reptiles of Spain (Pleguezuelos et al., 2002). The map is created with the ArcInfo software package version 9.3 using ArcMap. The satellite image was created by J. Desclouires, MODIS Land Rapid Response Team, NASA/GSFC.

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**Figure 2.** Upper part of the Rambla de Rogativa, inside the valley.

radiation, high proportion of rocks (medium size rocks, boulders, and/or cliffs) and high availability of water. Northern orientations are also preferred (part. Rubio and Carrascal 1994)

These variables indicate the importance that relatively low temperatures and high humidity have on the distribution of this lizard.

*Algyroides marchi* is one of the smallest lacertid lizards (body length less than 5 cm) and therefore



**Figure 3.** Overview of the valley from the dirt track.

the species has a low thermal inertia due to a high surface-to-volume ratio and hence they are sensitive to temperature and body water loss (Rubio, 1996). Thus, the general distribution of the species must be restricted to the Prebetic Mountains limited by the much drier and warmer lowlands that surround these ranges.

The currently known distribution extends to the Alcaráz, Cazorla and Segura mountain ranges, which include three Spanish provinces (Jaén, Granada and Albacete) and two Autonomous Communities: Andalucía and Castilla-La Mancha. More specifically, the species has been found in Sierra de Cazorla, Segura and Las Villas (Jaén, Andalucía) (Valverde, 1958; Klemmer, 1960; Pleguezuelos and Moreno, 1990), Sierra de Castril and Sierra de Jorquera (Granada; Andalucía) (Gil-Sánchez, 1992; Quirantes *et al.*, 2000), Sierra de Alcaráz, Sierra del Agua and Sierra de Segura (Albacete, Castilla-La Mancha) (Buchholz, 1964; Palacios *et al.* 1974; Sánchez-Videgáin and Rubio, 1996; Rubio *et al.* 1998) and from non-published localities spread throughout the different mountains ranges within these provinces (Rubio, 2002).

On the 16<sup>th</sup> of May 2009 we found an adult female of *Algyroides marchi* in the mountains of Moratalla (38.07° N, 2.25° W). The location is situated in the west of Murcia Region (east Prebetic ranges), a new Autonomous Community (*Región de Murcia*) for the distribution of the species, rather far from the boundaries of the currently known distribution area (Fig. 1).

The lizard was found in the so-called locality Rambla de la Rogativa, at 1650 m. a.s.l. in the north facing slope of the mountain massif of Revolcadores (1999 m. a.s.l.) and Obispo (2014 m. a.s.l.). The locality is situated in a valley where the upper part of the stream ‘*Rambla de la Rogativa*’ drains the northern face of the Revolcadores in S-N direction. There is no permanent flow in the upper part of the Rogativa except in its lowest reaches (Biox-Fayos *et al.*, 2007)

(Fig. 2). The far and wide presence of rocks are scattered along the former brook bed which was completely overgrown with vegetation (Fig. 3). Forest cover mainly consists of *Pinus nigra* subsp. *salzmanii* with only a few specimens of the endangered *Acer opalus* subsp. *granatense*. The geomorphological structure of this new location record falls within the structural variability of the typical localities with presence of *A. marchi* (Rubio and Carrascal, 1994).



**Figure 4.** Adult female *Algyroides marchi* at the new location.

#### *Morphological characteristics and coexisting lizard species*

The adult female specimen (Fig. 4) measured 44 mm from snout to vent and weighed 1.75 g. The head width measured 5.8 mm, the hind leg 13 mm and the belly diameter 8 mm. All these morphological features are within the specie's variability.

Other lizard species were found coexisting with *A. marchi* in the Murcia locality: the Ocellated lizard, *Timon lepidus* (Daudin, 1802), the large Psammodromus lizard, *Psammodromus algirus* (Linnaeus, 1758) and the Spanish wall lizard, *Podarcis hispanicus* (Steindachner, 1870); the latter were very common at the locality. All of these species are known to be present in the localities occupied by *A. marchi* (Palacios et al., 1974), although at very low densities (Rubio, 1996; Rubio, 2002). At some localities *P. hispanicus* lives in syntopy with *A. marchi*, where *P. hispanicus* seems to be the dominant species (P. Brakels, F. Koopmans and J. L. Rubio, unpubl. data).

The new record in the Murcia Region is surprising as the general area is relatively dry, open and warm compared to the typical distributional area of the species in Andalucía and Albacete (Sánchez, 1982; Aldeguer et al., 1992). The western wind precipitates on the western elevations of Andalucía and Albacete, generating an Foehn effect towards Murcian areas. However, the microhabitat where the specimen was found (Fig. 5) meets the environmental requirements of the species. Although from the administrative point of view this

locality can be considered as novel. The degree of isolation of this eastern population is not clear, since the sheer zones of eastern Albacete might facilitate a possible connection between this new Murcian locality and the localities within the currently known distribution range.

Considering the drier environmental conditions in the Murcian region, and the apparent isolated situation, the populations in this area might be endangered, given the limited availability of suitable habitat and possible low connectivity. Isolated populations and those situated in the distribution boundaries of a species are of great importance for species conservation (e.g. Reed, 2004). It is important to investigate the distribution, status and isolation degree of *A. marchi* in the Murcia Region, as well as in the adjacent areas in Albacete province, so that appropriate conservation measures can be implemented.

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**Figure 5.** The exact location of *Algyroides marchi*.

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