First report of an introduced population of the Iberian Newt (*Lissotriton boscai*) in Catalonia

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**Resum**  
Ha estat trobada una població introduïda i reproductora de tritó ibèric (*Lissotriton boscai*) al massís del Montseny. Es donen a conèixer tant les característiques de la bassa com l’afinitat genètica de la població.

**Abstract**  
A reproductive population of Iberian Newt (*Lissotriton boscai*) was found in a pond in El Montseny Natural Park, Barcelona, Catalonia, Spain. In the present publication, we report data on the characteristics of the pond and also on the genetic affinities of the population.

**Paraules clau:** *Lissotriton boscai*, introducció.  
**Key words:** *Lissotriton boscai*, introduced species.

**INTRODUCTION**  
The Iberian Newt (*Lissotriton boscai*), together with *Rana iberica*, *Chioglossa lusitanica*, *Salamandra salamandra gallaica*, *Discoglossus galganoi* and *Alytes cysternasii*, is an endemic amphibian species of the western Iberian Peninsula (Pleguezuelos et al 2002). It inhabits a wide range of aquatic environments like for instance slow running rivers but specially natural and artificial lakes, temporal or permanent ponds, marshes and even artificial containers used for watering the cattle (García-París et al 2004). Recently, it has been reported the presence of an isolated population in Navarra, which is clearly outside its distribution range (Rivera and Arribas 2009). In this work, we report for the first time a reproductive population of *L. boscai* in the Montseny mountain massif, within the limits of the Natural Park and Biosphere Reserve.

**POPULATION DISCOVERY AND IDENTIFICATION**  
The population was found during a field trip carried out as part of an amphibian biology course organized by the Natural Park of El Montseny. The sighting took place on the 29th of March 2008 and included three individuals, one adult male, one
adult female and one juvenile. The three specimens were found in a permanent
artificial pond in the area of the Natural Park known as “Pla de la Calma” (UTM DG
0446). The individuals were morphologically very similar to other populations of
*L. boscai* (Fig. 1 and Fig. 2) and the presence of larvae clearly suggested that it was a
viable introduction. Subsequently to this discovery, on the 24th of May 2009 and on
the 16th of June 2010, one and three females were captured, respectively. The
characteristics of the pond fall within the ecological parameters of the species (Díaz-
Paniagua 2009). It is a permanent water point of approximately 84m² (12m x 7m)
and a maximum depth in the center of approximately 1 m. The pond is situated at an
elevation of 1240m, in a montane meadow with heathland, and has filamentous algae
and macrophytes. The urodel *Triturus marmoratus* and the anurans *Pelophylax
perezi* and *Alytes obstetricans* also live in the same pond.

**GENETIC AFFINITY OF THE POPULATION**

In order to be able to certify the identity of the specimens found, that it was an
introduction and also to try to find out the source population, 698 base pairs of the
mitochondrial coding gene NADH deshydrogenase subunit 4 were sequenced for two
individuals from the population of El Montseny using the same primers and PCR
conditions as in Martínez-Solano et al (2006). These sequences were aligned with
103 specimens of *Lissotriton boscai* from 66 different populations published by
Martínez-Solano et al (2006) and distributed accross the entire range of the species.
The alignment was used to infer a phylogenetic tree using RAxML 7.0.4 (Stamatakis
2006). Node support was assessed using 1000 bootstrap replicates. The result of the
phylogenetic tree clearly indicate (bootstrap 90%) that the two specimens analyzed
are very closely related to specimens of *Lissotriton boscai* from Clade A2 – C
(populations 21-26, 28, 32-6) from Martínez-Solano et al (2006). All these
populations are from the North-western part of the Iberian Peninsula.

**DISCUSSION**

As a result of the almost identity in the NADH4 mitochondrial gene with the
populations from NW Iberia, it is almost certain that the *L. boscai* population from El
Montseny was introduced from NW Iberia. It is not possible to know exactly when it
was introduced but the presence of a “small newt” in this pond was known by the
guards of the Natural Park since 2005, as a result of amphibian monitoring activities.
These newts had been misidentified as *Lissotriton helveticus*, a similar species
present in Catalonia. A thorough study carried out on the water points of El
Montseny Natural Park certifies that *Lissotriton boscai* is restricted to this point,
even though there are several ponds of similar characteristics in the Pla de la Calma.
An explanation to this might be that it is a very aquatic species, with some
individuals staying in the water for the whole year, a factor that may limit its
dispersion (Galan 2003).
Figure 1: Adult male of Iberian Newt captured in El Montseny with the characteristic mating colors of this species.

REFERENCES


Figure 2: Top left, ventral coloration of an adult male; top right, an adult female; middle left, a larva; middle right, photograph of the pond where *Lissotriton boscai* was found; bottom left, size difference between an adult male of *T. marmoratus* (top) and an adult male of *L. boscai* (bottom) found in the pond.