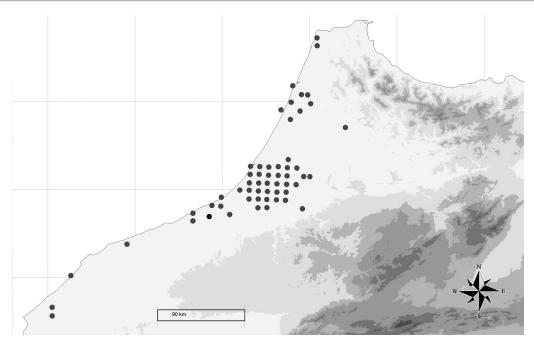
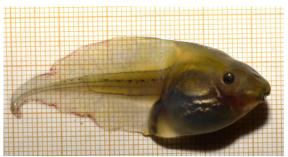
NEW RECORD OF PELOBATES VARALDII IN THE REGION OF BEN SLIMANE (NORTHERN MOROCCO) The family Pelobatidae comprises four species distributed in the western Palaearctic region (Amphibiaweb, 2012). Only one species, Pelobates varaldii, is present in North Africa, where it is endemic to the coastal plains of northern Morocco (Salvador, 1996). Its distribution is limited to the region between Tangiers to the north, Oualidia to the south, and Ouezzane to the east (de Pous et al., 2012) (Fig.1). This species is threatened by habitat destruction and the recent introduction of exotic fishes (for example, Gambusia and Lepomis species; García et al., 2010) and for this reason P. varaldii is classified as endangered in the IUCN Red List categories (Salvador et al., 2012). Recently, the distribution and the regional niche occupied by this species have been revised (de Pous et al., 2012). These authors were unable to confirm the presence of this species in the region of Ben Slimane, and considered this region unsuitable for P. varaldii, specifically due to the absence of sandy soils and the prevalence of "thick bushy undergrowth" (de Pous et al., 2012). In March 2013 we discovered a new population of P. varaldii in the Ben Slimane region, at coordinates 33.69 ° N, 7.15° W (Fig.1). A tadpole (Fig. 2) was found in a temporary pond, along with two other

species of amphibians: *Hyla meridionalis* and *Pleurodeles waltl*. The distinctive traits of the *P. varaldii* tadpole were identified following Schleich et al. (1996). This pond had a surface area of 2,530 m<sup>2</sup> and an average depth of 26 cm. The surroundings were agricultural fields with some remnants of natural vegetation (mainly shrubs of dwarf fan palm *Chamareops humilis*) (Fig. 3), on a sandstone/schistous substrate (Grillas et al., 2004).

Our finding confirms that P. varaldii occurs in absence of sandy soils, contrary to assertion of de Pous et al. (2012). In this sense, the sister species P. cultripes is also not limited to sandy soils (García-París et al., 2004), although it favours this type of substrate (Tejedo & Reques, 2002). P. varaldii is likely to be scarce in the region, given that it was only found at a single pond out of 21 ponds surveyed, in the Ben Slimane area. The existence of previous records both south and north of the discovered locality (Fig.1), suggested that this population would be part of a continuous range that would extend until recently through northern Morocco's Atlantic coastal plain. It is unlikely that it is result of an introduction, since this species has no value for the local people. The discovery of this new population indicates that small isolated populations can survive in the area surrounding Ben Slimane, (although they might be difficult



**Figure 1.** Distribution of *P. varaldii* in Morocco according to de Pous et al. (2012):grey circles. The new location described in this article is shown in a black circle.



**Figure 2.** Photograph of the tadpole of *P. varaldii* captured in the Ben Slimane area, March 2013.



Figure 3. Temporary pond on sandstone/schistous substrate. Breeding habitat of *P. varaldii*, *H. meridionalis* and *P. waltl*.

to detect), and that they are possibly very vulnerable to extinction.

## REFERENCES

- Amphibiaweb, Berkeley (2012). AmphibiaWeb: Information on amphibian biology and conservation. http://amphibiaweb.org/. [Accessed: 20 March 2013].
- de Pous, P. Beukema, W., Dingemans, D., Donaire-Barroso, D., Geniez, P. & El Mouden H. (2012). Distribution review, habitat suitability and conservation of the endangered and endemic Moroccan spadefoot toad (*Pelobates varaldii*). *Basic & Applied Herpetology* 26: 57-71.
- García, N., Cuttelod, A. & Abdul Malak, D. (2010). *The Status and Distribution of Freshwater Biodiversity in Northern Africa.*

Gland, Cambridge, and Malaga: IUCN.

- García-París, M., Montori, A. & Herrero, P. (2004). *Amphibia: Lissamphibia. Fauna Iberica Vol. 24*. Madrid: Museo Nacional de Ciencias Naturales and Consejo Superior de Investigaciones Científicas.
- Grillas, P., Gauthier, P., Yavercovski, N. & Perennou, C. (2004). Les mares temporaires méditerranéennes. Volume 1 – Enjeux de conservation, fonctionnement et gestion. Arles: Station biologique de la Tour du Valat.
- Salvador, A. (1996). *Amphibians of Northwest Africa*. Division of Amphibians and Reptiles, National Museum of Natural History, Smithsonian Institution.
- Salvador, A., Donaire, D., Slimani, T., El Mouden, H. & Geniez, P. (2004). *Pelobates* varaldii. In: IUCN 2012. *IUCN Red List of Threatened Species*. [Accessed: 20 March 2013].
- Schleich, H.H., Kästle, W. & Kabisch, K. (1996). *Amphibians and Reptiles of North Africa*. Koenigstein: Koeltz Scientific Books.
- Tejedo, M. & Reques, R. (2002). *Pelobates cultripes* (Cuvier, 1829). Sapo de espuelas.
  In: Atlas y Libro rojo de los Anfibios y Reptiles de España, p. 94-96. Madrid: Dirección General de Conservación de la Naturaleza & Asociación Herpetológica Española.

Submitted by: DANIEL ESCORIZA\*, Institute of Aquatic Ecology, University of Girona. Campus Montilivi, 17071 Girona, Spain. Email: daniel\_escoriza@hotmail.com and JIHENE BEN HASSINE, Research Unit of Biodiversity and Biology of Populations, Faculty of Sciences of Tunis, Department of Biology. University Tunis El Manar 2092, Tunisia. \* Corresponding author.