Post-Hatching behaviour of Iberian brown frog
\textit{(Rana iberica} Boulenger, 1879\textit{)} tadpoles

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Abstract. In this note, I describe the behaviour of Iberian brown frog \textit{(Rana iberica)} tadpoles soon after hatching. Three clutches were monitored during winter 2009. Tadpoles remained on the clutch for up to two weeks before they began to disperse into the stream.

Keywords. \textit{Rana iberica,} NW Spain, clutches.

Novel observations of the post-hatching behaviour of Iberian brown frog tadpoles \textit{(Rana iberica} Boulenger, 1879\textit{)} from NW Spain are provided. The Iberian brown frog is an endemic species that inhabits cold streams, ponds and mountain lakes in the north and west of the Iberian Peninsula, and some isolated localities in the Sistema Central mountains (Salvador and García-París, 2001).

The natural history of \textit{R. iberica} was until recently poorly known; some old works provided information about the breeding biology of the Iberian brown frog (Crespo and Cei, 1973; Galán Regalado, 1982), whereas more recent works shed light on aspects of their breeding behaviour and ecology in Spain (Rodríguez-Prieto and Fernandez-Juricic, 2005; Bosch et al., 2006; Ayres, 2008; Ayres and Comesaña-Iglesias, 2008).

The breeding season of \textit{R. iberica} in the Galicia region (NW Spain) ranges from November to March in lowland areas and from March to April in high altitude populations (Galán Regalado, 1982). However, females with eggs clearly visible across their ventral skin could be detected from October within the study area (Ayres 2008).

During the winter of 2008-2009 an Iberian brown frog population was monitored in a stream within the Centro de Investigacion e Informacion Ambiental (CINAM) facilities to assess reproductive behaviour, and to gather additional data concerning their breeding season and spatial use of the stream. The stream runs into the CINAM forest, which is located near Pontevedra, NW Spain, 57 m a.s.l., 42° 24’ N 8° 40’ W. This is a small

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Figure 1. Egg mass of \textit{R. iberica.}

Figure 2. Newborn tadpole.
stream that is channelled in concrete in some parts, with some ponds under waterfalls where *R. iberica* individuals congregate during the breeding season. The stream is fast flowing in the upper part, where the clutches were detected, with shallow water depth, rocks and roots that serve as shelter for clutches and tadpoles. In the middle section of the stream some dams have been constructed causing a slow water flow with a dense mud layer. No clutches were detected in this section. The final part of the stream is channelled in concrete to discharge into a fountain.

Several clutches were detected between December 2008 and March 2009. Three clutches were monitored because their location allowed easy observation of the larval development and behaviour, without disturbing tadpoles.

Clutches of *R. iberica* are small and globular (Fig. 1). Newborn tadpoles are sometimes completely white after hatching, changing to pale grey quickly. The body is depressed (Fig. 2), with a big yolk sac visible under the skin in the ventral region. Tadpoles remained motionless above the egg cases, laying on one side of the body. After one week the tadpoles remained with the rest of the clutch, the yolk sac still visible, their body shape becoming more globular, but still pale grey in colouration (Fig. 3).

Two weeks after hatching the tadpoles were still located over the rest of the clutch, but their body shape and colouration resembled the typical appearance of Iberian brown frog tadpoles, changing to a darker colouration with small white dots (Fig. 4). Finally tadpoles abandoned the remains of the clutch and entered into the stream to shelter under vegetation and roots.

Acknowledgements. I thank Dr. Jaime Bosch for his comments about *R. iberica* behaviour and Philip de Pous for his comments on a previous draft of the manuscript.

References


