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## NATURAL HISTORY NOTES

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*Natural History Notes* features shorter-style articles documenting original observations made of amphibians and reptiles mostly in the field. Articles should be concise and may consist of as little as two or three paragraphs, although ideally will be between 500 and 700 words. Preferred contributions should represent an observation made of a free-living animal with little human intrusion, and describe a specific aspect of natural history. Information based on a captive observation should be declared as such in the text and the precise geographical origin of the specimen stated. With few exceptions, an individual 'Note' should concern only one species, and authors are requested to choose a keyword or short phrase which best describes the nature of their observation (e.g., Diet, Reproduction). The use of photographs is encouraged, but should replace words rather than

embellish them. Contributions are accepted on the premise that they represent a previously unreported observation, and may be edited prior to acceptance. Standard format for this section is as follows:

**SCIENTIFIC NAME** (Common Name; the abbreviation NCN should be used where none is recognised): **KEYWORD**. **TEXT**; this should include date, time and locality (with full map co-ordinates if possible), precise details on the nature of the observation with some discussion of its significance, and references to pertinent literature. If the information relates to a preserved specimen, its catalogue number and place of deposition should also be given. **REFERENCES**. Then leave a line space and close with 'Submitted by:' (give name and address in full).

**LACERTA MONTICOLA (Iberian Rock Lizard): CANNIBALISM.** Cannibalism or intraspecific predation is a widespread interaction among reptiles that refers to killing and ingestion of individuals of the same species at any stage of their life cycles (Polis, 1981). A particular case of cannibalism is infanticide, in which predated individuals are neonates or juveniles (see e.g. Jenssen et al., 1989). This practice occurs in Squamata, where it has been recorded in several families including Lacertidae. Within this family, cannibalistic behaviour has been cited in *Acanthodactylus erythrurus* (Busack & Jaksic, 1982), *Gallotia galloti* (Barbadillo et al., 1999), *Lacerta bilineata* (Salvador, 1998), *L. agilis* (Salvador, 1998), *L. lepida* (Busack & Visnaw, 1989; Galán & Fernández Arias, 1993), *L. dugesii* (Sadek, 1981), *Podarcis atrata* (Castilla & Van Damme, 1996), *P. lilfordi* (Salvador, 1986), *P. muralis* (Salvador, 1998) and *Psammodromus algirus* (Mellado, 1980). The present note describes the first records of cannibalism (infanticide) in *Lacerta monticola*. Our observation was recorded on September 8 near Laguna de los Pájaros, a 4866 m<sup>2</sup> pond located at 2180 m of altitude at the Peñalara Natural Park

(Madrid, Spain) (UTM 30T-VL 202239). The surroundings of the pond hold a relatively high density of *L. monticola*. We observed at least 3 adult and 7 subadult specimens at 14:30 h in a small accumulation of rocks (less than 2 m<sup>2</sup> in extension). The lizards were active, laying flattened against the substrate in characteristic thermoregulation behaviour (Martín & Salvador, 1993). Subsequently, an adult male was observed capturing a juvenile, which had lost its tail previous to the attack. After a short struggle, the prey escaped, but a few moments later it was captured again and ingested in less than two minutes. Several minutes later, another adult specimen, slightly smaller than the first one was observed capturing another juvenile which had its tail intact. In this case, I could not observe if the prey was finally consumed because the adult specimen noticed my presence and ran out of sight under the rocks still holding its prey.

Generally, intraspecific predation is associated with opportunistic, euryphagous species that prey upon a wide range of prey taxa depending on their disponibility (Polis & Myers, 1985), as it may be the case for the populations of *L. monticola* at Sierra del Guadarrama (Salvador, 1998). High altitude populations of *L. monticola* are characterised by a relatively large clutch size, ranging from 3 to 9 eggs per clutch (average = 5.4) (Barbadillo, 1985), and by having a short hatching period, resulting in high densities of juveniles. The probability of intraspecific encounters among differently sized individuals is increased when high densities of newborn specimens coexist with large adults. The two instances of cannibalism were recorded in less than ten minutes, which suggests a high frequency of these interactions, higher than generally assumed. In this context, cannibalism should be interpreted as a by-product of normal feeding activities (Polis & Myers, 1985). Alternatively, differential predation on juveniles (infanticide) may not only represent an immediate energetic benefit for the cannibalistic individual, but may also be associated with density-dependent regulation at the population level (Polis, 1981). In short term, when a severe



Adult specimen of *Lacerta monticola* preying upon (above) and consuming (below) a conspecific juvenile. Peñalara Natural Park (Madrid, Spain). Photographs by author.

decline in resources is predictable, predation pressure on juveniles would reduce competition for limited resources and increment per capita food intake for cannibalistic individuals. Males of *L. monticola* have different foraging microhabitats than females and subadults (Pérez-Mellado, 1982), but some degree of trophic niche overlap is likely to occur among juveniles and adults of *L. monticola* because adult specimens, although consuming larger prey than juveniles, do not exclude small prey items from their diets (Pérez-Mellado et al., 1991).

Regulation by cannibalism may also act in the long-term. Infanticide, besides eliminating future competitors, would also eliminate individuals with less a priori possibilities of winter survival, keeping the population size always below the carrying capacity of the environment (Polis, 1981). Besides, cannibalistic individuals would be

better prepared to survive the wintering period. Bauwens (1981) found no significant differences in survival to the wintering period between sex and age classes in *Lacerta vivipara*, although juveniles survived less well than adults, especially those suffering from tail loss. Differential cannibalism on juveniles suffering from tail loss could be thus interpreted as a homeostatic mechanism at the population level. However, data at hand are too scarce to test the existence of such selective predation and support this interpretation of cannibalism in lizards.

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