Attempted oophagy observed in *Podarcis muralis* (Laurenti, 1768)

Small lacertid lizards from mainland populations, e. g., *Podarcis muralis* (Laurenti, 1768), mostly prey on insects and spiders but also other arthropods, gastropods and even small vertebrates and plant matter (Arnold 1987; Strijbosch et al. 1980; Mou 1987; Capula et al. 1993; Pérez-Mellado & Corti 1993; Richard & Lapini 1993; Van Damme 1999; Carretero 2004). Besides, rare dietary events such as cannibalism have been reported for *P. muralis* (Polis & Myers 1985; Schulte 2008; Žagar & Carretero 2012; Simović & Marković 2013).

Consumption of eggs (oophagy) can be either interspecific or intraspecific (cannibalistic). By definition, cannibalism is a special form of predation in which predator and prey are members of the same species (Polis 1981). In the genus *Podarcis*, cannibalistic oophagy was observed in natural populations of at least three species other than *P. muralis*, namely *P. liolepis* (Boulenger, 1905) - Castilla 1995 [under the name *P. hispanica atrata*], *P. siculus campestris* (De Betta, 1857) - Cattaneo (2005) and *P. pityusensis* (Boscá, 1883) - Dappen 2011),

Fig. 1: Attempted oophagy of a female *Podarcis muralis* (Laurenti, 1758), from the Dinaric Mountains in southern Slovenia. Photo: M. Krofel.

and in captivity in *P. erhardii* (Bedriaga, 1882) (Brock et al. 2014). There is a general trend in *Podarcis* that predation of eggs or juveniles appears mainly in insular populations and more frequently in males than females (Castilla & Van Damme 1996).

On 8 July, 2013, two of the authors (A. Ž. and M. K.) collected *P. muralis* on the mountain Mala gora above the village of Ribnica in the Dinaric Mountains, southern Slovenia (45° 45'N, 14°45'E). The site was an open limestone outcrop, approximately 450 m^2 in size, situated next to a graveled forest road and surrounded by a mixed Dinaric fir and beech forest (*Omphalodo-Fagetum* s. lat.). At 12:15 h an adult female of *P. muralis* was observed trying to consume a lizard egg (Fig. 1). The observation lasted approximately 15 minutes. The female shook the head, clearly trying to ingest the egg held in her mouth. The lizard manipulated the egg for about five minutes, after which she moved with the egg in her mouth to a nearby refuge in a rock crevice. Several minutes later, she reappeared with presumably the same egg and continued trying to ingest it for another approximately five minutes, but again did not succeed and finally abandoned the egg. After ten minutes of unsuccessfully waiting for the female to return, the egg was secured and preserved in ethanol.

Subsequent study of the egg under a binocular microscope (magnification 40 times) revealed the presence of an embryo at developmental stage 27-28 according to Dufaure & Hubert (1961). This supports the view that the lizard intended to consume a recently laid egg including an apparently live embryo (comp. Braña et al. 1991). The absence of other small lacertids at this site (A. Žagar, unpublished data) suggests intraspecific oophagy.

Possible explanations for the occurrence of oophagy or other forms of cannibalism in this *P. muralis* population could be: high population density, temporary food scarcity, or the combination of both. Such reasons were hypothesized to induce other rare dietary events in lizards such as cannibalism on juveniles or consumption of dangerous prey (e.g., scorpions) and shifts to herbivory (Pérez-Mellado & Corti 1993; Castilla & Van Damme 1996; Cooper &

VITT 2002; PAFILIS et al. 2008; CASTILLA & HERREL 2009; ŽAGAR et al. 2011; ŽAGAR & CARRETERO 2012; ZUFFI & GIANNELLI 2013). The authors' estimate of the population density at this site conducted in 2012 resulted in high density values (43 individuals counted per 450 m^2 per hour; A. ŽAGAR, unpublished data) and thus revealed a factor promoting cannibalistic oophagy.

Along with previous reports on predation upon conspecific juveniles (ŽAGAR & CARRETERO 2012), this observation suggests that cannibalism may not be uncommon in *Podarcis*, insular conditions only increasing the selective pressures promoting it.

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