Predation of *Hyla intermedia* egg-clutches by tadpoles of *Discoglossus pictus* in Sicily

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The painted frog *Discoglossus pictus* is an anuran native of northwestern Africa and some islands from the central Mediterranean, including Sicily (Ben Hassine & Nouira, 2012; Escoriza, Ben Hassine & Boix, 2014). It is widely distributed in Sicily, where it occupies a broad range of habitats (Turrisi, Lo Cascio & Vaccaro, 2007). *Discoglossus pictus* breeds in small water bodies, such temporary ponds, where it frequently co-occurs with *Hyla intermedia* and *Pelophylax bergeri* (Capula, 2007; Escoriza & Boix, 2014).

In March 2014, I observed the predation of eggs of *Hyla intermedia* by several tadpoles of *Discoglossus pictus* (Fig. 1A, B), in a temporary pond near Cefalù (northern Sicily; Fig. 1C). This pond had a surface area of 50.2 m² and an average depth of 12 cm, with a water temperature of 14.7°C (at 13:00 h, local time). No other anurans (adult or larvae) were found in this pond. This behavior, not previously described in the genus *Discoglossus*, is an effective mechanism to regulate the presence of other anuran species, since in subsequent days no tadpole of *H. intermedia* was found in the pond. Thus *D. pictus*, an early breeder species (Capula, 2007), likely benefits from this strategy to eliminate potential competitors, such *H. intermedia* (a later breeder; Lapini, 2007). This is because most of the tadpoles are trophic generalists (Altig et al., 2007; Schiesari et al., 2009), and the small size of the pond did not allow for spatial segregation in the use of the trophic resources (species of genus *Hyla* forage more frequently along the water column than *Discoglossus* species; Díaz-Paniagua et al., 2005). However both species can co-occur locally, in larger-sized ponds (between 446-2929 m²) with more complex mesohabitat structure (Escoriza & Boix, 2014).

Other examples of oophagy in anuran larvae are also provided in the literature, including *Rana temporaria* on *Bombina variegata*, *Epidalea calamita*, *Hyla arborea* and conspecifics (Heuser, 1970), *Bufo bufo* on *Epidalea calamita* (Beebee, 1977), *Leptodactylus pentadactylus* on *Rhinella roqueana* (Wells, 1979), *Pelobates cultripes* and *Pelodytes punctatus* on *Epidalea calamita* (Tejedo, 1991), *Lithobates sylvaticus* on *Anaxyrus americanus* (Petranka et al., 1994), *Lithobates clamitans* on *Lithobates sylvaticus* (Petranka & Kennedy, 1999), *Scaphiopus couchii* on *Anaxyrus speciosus* (Dayton & Fitzgerald, 2005), *Bufo viridis* and *Isthmohyla pseudopoma* on conspecific spawns (Crump, 1983; Vlček, Kudláček & Jablonski, 2013) and *Dendrobates ventrimaculatus* and *Phrynohyas resinifex*, phytotelmata breeding species, also on conspecific eggs (Summers, 1999; Schiesari et al., 2003). These observations suggest that oophagy can play an important role in the regulation of species co-occurrence in small water bodies, such ephemeral ponds and tree holes.

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References


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