

Correspondence

***Triturus cristatus* (Caudata: Salamandridae) feeds upon dead fishes**ALEXANDRU IFTIME¹ & OANA IFTIME²¹“Grigore Antipa” National Museum of Natural History, Kiseleff Bvd. no. 1, Bucharest, Romania²University of Bucharest, Faculty of Biology, Department of Genetics, Aleea Portocalelor 1-3, s 6, Bucharest, Romania

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The feeding biology of the Great Crested Newt, *Triturus cristatus*, was intensely investigated, notably in Romania, where a significant amount of literature on this subject has emerged within the last decade (see COVACIU-MARCOV et al. 2010 for an overview). Most of these studies rely upon the stomach wash method (JOLY 1983, LECLERC & CURTOIS 1993). This method allows a quick recovery of many ingested prey items, but it will be necessarily biased towards recently ingested and chitinous prey items, taking longer to digest. Therefore, direct observation of the feeding habits of live animals in their natural environment is a method that, besides being non-invasive, well complements the stomach wash method, as it allows observation of all types of prey.

We have used the direct observation method to document the life of a *Triturus cristatus* population close to Târgu-Jiu, department of Gorj, south-central Romania. This population occupies a rather large (ca. 10 x 5 m), deep (more than 1 m max. depth), permanent pond, fed by a natural spring, surrounded by thorny bushes and rich in floating algal mats. Newts shared the pond with two fish species, Stone Morokos (*Pseudorasbora parva*) and Prussian Carp (*Carassius auratus gibelio*), both non-native cyprinids, as well as with Marsh Frogs (*Pelophylax ridibundus*) and Grass Snakes (*Natrix natrix*).

At the mentioned pond, on 8 April 2010, we observed *T. cristatus* swimming in great numbers at the surface. Some of them repeatedly approached a floating, dead Stone Moroko, which they again and again bit into, with vigorous movements, apparently removing bits of flesh, which they ingested. After several minutes of such behaviour, the dead fish was partly torn open, and its intestines were exposed (Figs. 1-2); at that moment, the newts appeared to eat the entrails preferentially, possibly because they were easier to bite off.

We consider this observation interesting as it is a rare case where the coexistence of *T. cristatus* and fishes leads to the former utilizing the latter as a food source, even if only as carrion, as opposed to the contrary situation, namely fishes preying upon newts, which has been frequently documented (e.g., HARTEL et al. 2010). To our knowledge to date, there is only one documented situation in which *T.*

cristatus has been noted to prey upon the fry of the small fish, *Leucaspius delineatus* (KINNE 2004).

In Romania, coexistence of *T. cristatus* populations with fishes has been documented before, but newt consumption of live or dead fish has not, even though the trophic spectrum of such newt populations was studied (COVACIU-MARCOV et al. 2002a). Additionally it shows the Great Crested Newt opportunistically taking advantage of available dead prey of large size (the eaten dead fish was about the same size as the newts).

This observation also shows the newts actively foraging at the surface of the water, while it is frequently supposed that *T. cristatus* is benthic as opposed to *Lissotriton vulgaris*, which is nektonic (e.g., COVACIU-MARCOV et al. 2002b, 2010, DOLMEN & KOKSVIK 1983, WELLS 2007). Our observations indicate that the behavioural plasticity of *T. cristatus* is greater than expected and includes necrophagy. It also suggests that more direct observation studies of the species, including the interaction between newts and fishes, may lead to interesting findings.



Figure 1. Individual of *Triturus cristatus* biting into a dead fish swimming at the pond's surface near Târgu-Jiu, south-central Romania.



Figure 2. One individual of *Triturus cristatus* feeding on a dead fish while a second *T. cristatus* is approaching; near Târgu-Jiu, south-central Romania.

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