

Notes on the presence of facultative paedomorphosis in the smooth newt *Lissotriton vulgaris* (Linnaeus, 1758) in western Romania

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Abstract. A paedomorphic female of *Lissotriton vulgaris* was found, for the first time in western Romania, near Prunişor village, in Arad county. The appearance of paedomorphosis is probably accidental, being caused by the warm winter and abundant precipitations from the previous year, which maintained a constant level of water in the habitat and prevented its freezing.

Key words: *Lissotriton vulgaris*, facultative paedomorphosis

Facultative paedomorphosis is represented by the coexistence in the same population of gilled, aquatic paedomorphic adults together with terrestrial metamorphic adults (Denoël et al 2005 a). Paedomorphs are large individuals with gills, with unknown reproductive capacity, while the paedogenians represent such individuals in which reproductive capacity has been demonstrated (Andreone et al 1993). Thus, paedogenesis is considered to be a particular form of paedo-morphosis (Litvinchuk et al 1996).

Paedomorphosis is widely distributed in Urodelans, being known in fifty-seven species of newts and salamanders (Denoël et al 2005 a). In Europe, the phenomenon has been

identified in numerous species, such as *Mesotriton alpestris* (Radovanovic 1961, Henle 1983, Kalezic et al 1990), *Lissotriton vulgaris* (Fuhn 1963, Dely 1967, Kalezic et al 1990), and *Triturus carnifex* (Kalezic et al 1994). Facultative paedomorphosis is induced by the environment (Denoël et al 2005 a) and influenced by different factors (Semlitsch 1987, Semlitsch et al 1990, Ryan & Semlitsch 2003). Paedomorphs are present in habitats with unrelated characteristics, situated in diverse regions and at variable latitudes (Whiteman 1994, Denoel et al 2001, Denoel et al 2005 a).

On March 11, 2007, we found a paedomorphic female of *Lissotriton vulgaris*, near Prunişor village, in Arad County (46°25'0" N, 22°7'0" E) (fig.1).

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This is the first record of paedomorphosis in newts from western Romania. At the same date and in the same habitat we captured over 100 metamorphosed smooth newts, a fact that demonstrates that the appearance of the paedomorphosis was accidental. The mild winter allowed the newts to enter their breeding period at the end of February; we know this for a fact because we are undertaking a feeding study for that particular newt population. Thus, every second week from that point on we captured tens of newts, but did not identify any paedomorphic newts.



Figure no.1 The geographical position of the study area in Arad county (Romania)

The paedomorphic female (fig.2) had a total length of 50.9 mm, close to the minimal length characteristic of adult females, which varies between 59 and 83 mm and almost double the average length of the metamorphosing larvae, which measure about

25 to 30 mm (Fuhn 1960). The body measured 30 mm while the tail was 20.9 mm long. The three pairs of gills were very large, the biggest one reaching 6.7 mm. The gill lengths are large in comparison to other known paedomorphs (Gill length = 1.5mm; Litvinchuk 2001). A dark coloured line was present on the dorsal region of the body, a characteristic feature of the juveniles and females of this species (Fuhn 1960).

The habitat is situated at an altitude of 135 m, near an oak forest. It is represented by a system of large puddles, continued by a swampy area. The two puddles situated near the forest are permanent, having their own source, while the remainder dry out during the summer. The depth of the water reaches over 80 cm and the bottom is covered with mud. The puddles near the forest have abundant aquatic vegetation, represented both by algae and cormophitae, which sometimes can cover the surface of the water completely. The paedomorphic specimen was identified in the largest puddle, situated nearest to the forest. The puddles lack fish-fauna, which are known to eliminate paedomorphic populations (Denoël et al 2005 b). The potential predators include; dragonfly larvae, Ditistidae and aquatic Heteropterans. Although the paedomorphs usually appear in habitats without vertebrate predators, *Triturus*



Figure no.2. The pedomorphic *Lissotriton vulgaris* female from Prunisor, Arad county (Romania)

cristatus, a known predator of common newts (Cicort-Lucaciu et al 2005), reproduce in a neighbouring puddle.

The occurrence of the pedomorphic *Lissotriton vulgaris* specimen from Prunisor is accidental, being the result of the climate particularities of the year 2006 and the 2006/2007 winter. Metamorphosis usually takes place just before the puddles dry out (Denoël 2003), but 2006 was a very rainy year and therefore kept the water level constant. As a result, the

permanent high level of water prevented the metamorphosis of some *Lissotriton vulgaris* specimens. In addition, the winter was very mild, with very few nights in which the temperatures dropped below freezing. As a result the water never froze completely, allowing the pedomorphic specimen to survive until spring. A lack of food usually induces metamorphosis (Denoël & Poncin 2001). However the favourable environmental factors for pedomorphosis affected a sufficiently large

area of habitat which contained numerous potential preys (unpublished data).

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New record on the occurrence of *Dolichophis caspius* (Reptilia: Colubridae) in Romanian Moldavia

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Abstract. *Dolichophis caspius* is a common snake species in Dobrudja (Tulcea and Constanta counties) and in some areas from south-western Romania (Banat region). However, this species has only been cited in 2 localities in the eastern part of Romania (Moldavia) and has not been recorded since 1937. In the Romanian red data book of vertebrates, the Moldavian populations of *Dolichophis caspius* are listed as extinct. The present paper provides evidence that the large whip snake still occurs in the Romanian Moldavia by way of 3 live specimens observed in Galați county in May 2007.

Key Words: *Dolichophis caspius*, large whip snake, Romania, Moldavia, Galați county.

The large whip snake (*Dolichophis caspius* Gmelin, 1779) is known to occur in Asia Minor, the Balkans, Hungary, southern Romania, the Republic of Moldavia, Ukraine, Southern Russia (Caucas) and western Kazakhstan (Szczerbak 1997, Iftime 2005). In Romania, this species

has been previously recorded in numerous localities within Dobrudja (Fuhn & Vancea 1961, Fuhn 1969, Covaciu-Marcov et al 2006a) as well as limited localities from other southern regions of Romania (Covaciu-Marcov et al. 2005, Lazar et al. 2005, Iftime 2005). *Dolichophis caspius*