

Some low altitude *Triturus montandoni* (Amphibia: Salamandridae) population records from the Oaş region, North-Western Romania

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Abstract. In the Oaş region from North-Western Romania, Montandon's Newt *Triturus montandoni* is occurring even at 200 m a.s.l. Although this is the lowest altitude at which the species was recorded in Romania, numerous individuals can be found outside this distribution area in very different habitats, including artificial ones. In the study region, *Triturus montandoni* never appears in the same habitat with the Common Newt *Triturus vulgaris*, since it is present either alone or with the Great Crested Newt *Triturus cristatus*, though *Triturus vulgaris* is widely spread in the neighbouring regions.

Key words: *Triturus montandoni*, low altitude, Romania

Triturus montandoni is an endemic species in the Tatra Mountains and in some regions of the Carpathian Mountains. Generally it is present at altitudes between 500 and 1 500 meters a.s.l. (Cogălniceanu 1997). At the northern limit of its range it comes down to about 200 m a.s.l. (Cogălniceanu et al. 2000) while in the area of the upper course of the Tisa River it is present, in some localities, between 200 and 300 m a.s.l. (Cogălniceanu 1997). The lowest altitude where *T. montandoni* was encountered is 150 m, in the Ukrainian Carpathians (Litvinchuk et al. 2003). This species is very similar to *Triturus vulgaris* (Rafinski &

Arntzen 1987, Arntzen 1995, Babik et al. 2005), so the two species often hybridize (Fuhn 1963, Babik et al. 2003, Babik & Rafinski 2004).

In Romania, *T. montandoni* is found only in the Eastern Carpathians and partially in the Southern ones (Fuhn 1960, Cogălniceanu et al. 2000, Iftime 2005). In North-Western Romania it has not been pointed out until recently, being found only in the central and eastern parts of the Eastern Carpathians (Fuhn 1960). After this record it was encountered in the Maramureş Mountains, in the Baia-Mare region, or in the hills from Northern Transylvania (Micluţă 1970,

Ardelean & Béres 2000, Ghira et al. 2002). Generally in Romania the species is present at altitudes higher than 500 m a.s.l. (Fuhn 1960), but it was also signalled at 210 m a.s.l. altitude in the western part of the country (Micluță 1970) or at 340 m a.s.l. in Moldavia (Gherghel & Ile 2006).

Triturus montandoni was recently observed in the Oaș Mountains, at altitudes around 300 m a.s.l., more to the west that it was originally pointed out (Covaciu-Marcov et al. 2004). This fact determined us to investigate further in the Oaș region, in order to identify other lower altitude populations of this vulnerable species in our country, also considered to be in a pronounced decline (Iftime 2001). Thus, we discovered new lower altitude populations in the Oaș region (tab.1, fig.1), *T. montandoni* being frequent in the forested areas from altitudes beginning at 200 m a.s.l. The inferior altitude limit of this species is encountered at Tarna Mare, where it reaches 200 m a.s.l., on the last mountainside that comes in direct contact with the plain.

Table no.1 The five low altitude *Triturus montandoni* population records from the Oaș region, North-Western Romania

Site No.	Nearest locality	Elevation
1	Tarna Mare	202 m
2	Turț	249 m
3	Seini	225 m
4	Handalu Ilbei	247 m
5	Cicărlău	251 m



Figure no.1 The geographical position of the five low altitude *Triturus montandoni* population records from the Oaș region

Triturus montandoni reproduces in diverse forested area habitats. It can be found in permanent ponds or puddles, with cold, clear water, formed near streams, usually at the edge of forests. Due to the vicinity of the forest, the ground layer of the ponds is usually covered by fallen leaves. In the Oaș region, the species seems to be advantaged by the human activities, occupying artificial basins that resulted from mining or hydrotechnical interventions. At Turț, on a length of no more that a few hundred meters, four different habitats can be found, two of which being completely artificial, one is partially human made, while another one is not affected by human activities (fig.2). These habitats exist because of the former mines, most of them being closed nowadays. In each of these biotopes, several tens of newts reproduce annually. Aside these permanent habitats, *T. montandoni* can be found, at Handalul Ilbei, in

a system of temporary puddles situated in the outskirts of a forest, near a road that is close to a village (fig.2). These puddles have about 20 cm in depth and their ground layer is covered by dead leaves.

In the Oaş region, *T. montandoni* never appears together with *T. vulgaris* despite the fact that in Romania the two species were identified frequently in the same habitats (Fuhn et al. 1975, Gherghel & Ile 2006, Strugariu et al. 2006). In the studied region, *Triturus montandoni* appears either alone or together with *T. cristatus*, although *T. vulgaris* has been pointed out in numerous localities near the limit of the Oaş Depression (Ghira et al. 2002, Covaciu-Marcov et al. 2004). In the larger habitats, *T. montandoni* occurs together with *T. cristatus*, while in the small ones it is found alone. Also, in the natural habitats, *T. montandoni* appears to be more abundant than *T. cristatus*, while in the artificial ones the balance is even, or a bit more in favour of the crested newt. In the temporary puddles from Hadalul Ilbei *T. montandoni* is the sole inhabitant, despite that just a few hundred meters away there is a large permanent pond, also situated near the forest. In this particular pond only *T. cristatus* and *T. vulgaris* were identified. This situation is not characteristic only for the lower altitudes, because at Huta Certeze (about 500 m a.s.l.) *T. montandoni* is the only species that inhabits the ponds created from the forest springs. *Triturus cristatus* and *T. vulgaris* are present at about 1-2 km away, in

ponds from situated nearby the driveway.

Despite the rest of its Romanian range, in the Oaş region *T. montandoni* comes down to much lower altitudes and does not live in the same habitats with *T. vulgaris*. The distinctive features of the Oaş population probably represent a consequence of the difference between the populations from the extreme north-west of the country and the rest of the populations that live in Romania. Thus, the ones from the Ukrainian Carpathians and the Gutâi Mountains (Northern Romania) belong to a different group than the rest of the populations from Romania (Babik et al. 2005). A similarity between the populations from Oaş and those from the Ukrainian Carpathians is the fact that both populations come down to very low altitudes (Litvinchuk et al 2003). Also, in the Ukrainian Carpathians, *T. montandoni* and *T. vulgaris* rarely appear together, and there are no hybrid populations indicated at all (Litvinchuk et al. 2003). These data, together with our results, can suggest that the glacial refuge of the *T. montandoni* group from the Ukrainian Carpathians was situated somewhere in the region of the Oaş mountains and depression, or in the adjacent sector from Ukraine. Probably, in this refuge, *T. vulgaris* wasn't present and so never really pervaded this sector. Lately, the theory that the Carpathic basin was a very important glacial refuge has been thoroughly debated (Willis et al. 2000, Willis & van Andel 2004, Babik et al.



Figure no.2 Habitats of *T. montandoni* from the investigated region
a- at Handalu Ilbei; b- at Turț - not affected by human activities; c- at Turț - completely artificial; d- at Turț - partially human made

2005). It is considered that other newt species like *T. cristatus* had their refuge in Romania (Wallis & Arntzen 1989). The idea that the Oaş region represents a refuge is also sustained by the low altitude populations that don't show a abundant distribution across Romania. These types of populations weren't identified in other regions of the country prior to our study, except the north-western part, despite our repeated attempts.

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Submitted: 10 June 2007
/ Accepted: 20 October 2007

Corresponding Editor: I. Sas
English Language Editor: K. Öllerer