

UNUSUAL OBSERVATION OF THE WINTER ACTIVITY OF *LISSOTRITON VULGARIS* FROM SOUTH–WESTERN SLOVAKIA

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Abstract: The smooth newts, *Lissotriton vulgaris* (Linnaeus, 1758) is a hibernating amphibian whose observation of its winter activity is very rare. In this paper is presented the finding of migrating *L. vulgaris* in warming period in December 2012 from south–western Slovakia. Similar observation has not been recorded in literature so far in this the part of Europe.

Key words: *Lissotriton vulgaris*, phenology, overwintering, smooth newt, Salamandridae, Central Europe.

The seasonal periods of low temperatures force the ectotherm animals in north temperate climates into overwintering (ULTSCH 1989). The beginning of the following spring activity of hibernating species probably depends on climatic oscillation, as well as on photoperiod of day, gradual raise of temperature, barometric pressure changes and altitude of the habitat as well (cf. GREGORY 1982; VITT & CALDWELL 2009). The spring return to the normal activity of central–European amphibians occurs from the mid–February (BARUŠ & OLIVA 1992) in case of cold–tolerant species *Rana temporaria*, which is even capable of surviving the short freezing (PASANEN & KARHAPÄÄ 1997). Therefore, the observation of the winter activity of usually hibernating amphibians and reptiles are extremely rare, however if it occurs, then mostly by the influence of extraordinary environmental characteristics of habitat, such as a thermal habitats phenomenon (e.g. COVACIU–MARCOV et al. 2004, 2010; SAS et al. 2012). The start of the activity during the extremely warmer winter interval has been recorded, for example, at *Salamandra salamandra*, *R. temporaria*, *Podarcis muralis* and even at the thermophilic species *Lacerta viridis* (see RUGIERO 1995; VONGREJ et al. 2008).

The record of the hibernation length of the Smooth Newts, *Lissotriton vulgaris* (Linnaeus, 1758) in the central Europe is reported by the altitude from the October to the early April (BARUŠ & OLIVA 1992). As for the southern Slovakia, the end of the hibernation of this species is reported at least at the end of the February (LÁC 1968). The early migrations after hibernation of the Smooth Newts in the lower altitudes of the central Europe were recorded in Poland (21. 2.) in the temperatures of air 9.5 °C and water 6 °C (JUSZCZYK 1987). The same author also recorded the lowest temperature of air (7 °C) and water (3 – 3.5 °C), in which the species became active in breeding place. According to JUSZCZYK (1987), the starter of the spring migration at *L. vulgaris* is apart from the air temperature, especially the volume of rainfall, which makes the movements to the places of breeding at the Smooth Newts easier. The early migration at *L. vulgaris* was recorded on 20. 1. 2007 (two males) and 11. 2. 2009 (one male on the snow, Kautman and Vongrej, unpublished data). To my knowledge, the finding of migrating *L. vulgaris* in December from this part of Europe has not been recorded in literature so far.

On 17. 12. 2012 (approximately 9:30 AM, 1 °C, cloudy rainy weather) a lethargic but live migrating



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specimen of *L. vulgaris* in terrestrial phase (male, TL = 75 mm) was found in the western part of Bratislava, southwestern Slovakia (48.1970° N, 17.0379° E, altitude 209 m). The locality of the finding was northerly exposed urban area on the boundary of the built-up area and ruderal habitat. In the period from the 1st to 20th December 2012, the daily temperature in Bratislava oscillates approximately between -11 and +5 °C. However, from 4th to 14th December, the average daily temperature did not rise above 0 °C. The unexpected warming with temperatures up to 2 °C and average volume of daily rainfall up to 10 mm (the most from the beginning of December; according to <http://freemeteo.com>) came on 15th December. The temperatures on the freezing point accompanied by the weak rain persisted up to 20. 12., including the time of finding *L. vulgaris*.

According to the comparison of knowledge JUSZCZYK (1987), the observed specimen probably abandoned its wintering place due to temperature rise and especially due to rainfall, which are considered to be the main migration starters of this species. Consequently, the fall of the temperature thus caused the lethargy of the specimen and prevented of returning to the refuge. The early migration of the newt/salamander males can occur, even though there is a danger of death caused by low temperature (HARTEL et al. 2007). However, this danger is balanced by the fact, that the late presence at the breeding place could cause the elimination of specimen from the reproduction in a certain year (DOUGLAS 1979). Owing to the climatic oscillation with consequent extraordinarily warm days in the winter season, the rare early migrations from the wintering places (thus the changes in species phenology, see e.g. HENLE et al. 2008) can occur, not only with newts, but also with the other amphibians and reptiles in the future as well and cause their deaths due to the unexpected fall of the temperature (cf. Vongrej et al. 2008).

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REFERENCES

- BARUŠ V & OLIVA O (Eds) 1992: Obojživelníci – Amphibia. Fauna ČSFR 25. *Academia, Praha*. 340 pp.
- COVACIU-MARCOV S-D, SAS I, ANTAL C, CICORT-LUCACIU A-Ş & BUNCAN M, 2010: We cannot hibernate again: new amphibian populations active during winter in the thermal habitats from Western Romania. *Biharian Biologist*, 4: 153–159.
- COVACIU-MARCOV S-D, SAS I, CICORT-LUCACIU A-Ş, PETER V & GROZA M, 2004: Amphibians in the thermal waters in the west of Romania. *Studii și Cercetări Științifice, Universitatea din Bacău, seria Biologie*, 9: 131–135.
- DOUGLAS ME, 1979: Migration and sexual selection in *Ambystoma jeffersonianum*. *Canadian Journal of Zoology*, 57: 2303–2310.
- GREGORY PT, 1982: Reptilian hibernation. In: GANS C & POUGH FH (eds): *Biology of the Reptilia*, volume 13. *Academic Press, London*. pp. 53–154.
- HARTEL T, SAS I, PERNETTA AP & GELTSCH IC, 2007: The reproductive dynamics of temperate amphibians: a review. *North-Western Journal of Zoology*, 3: 127–145.
- HENLE K, DICK D, HARPKE A, KÜHN I, SCHWEIGER O & SETTELE J, 2008: Climate change impacts on European Amphibians and Reptiles. *Convention on the conservation of European wildlife and natural habitats, 28th meeting 24–27 November, Strasbourg, France*. 51 pp.
- JUSZCZYK W, 1987: *Płazy i gady krajowe. Część 2 Płazy*. Warszawa, PWN. 384 pp.
- LÁC J, 1968: Obojživelníky – Amphibia. In: OLIVA O, HRABĚ S & LÁC J (eds): *Stavovce Slovenska I – Ryby, obojživelníky a plazy*. SAV, Bratislava. pp. 231–362.
- PASANEN S & KARHAPÄÄ M, 1997: Can boreal common frog (*Rana temporaria* L.) survive in frost? *Annales Zoologici Fennici*, 34: 247–250.
- RUGIERO L, 1995: Winter activity of a Common Wall Lizard (*Podarcis muralis*) population in central Italy. *Russian Journal of Herpetology*, 2: 148–152.
- SAS I, ROȘIORU CL & COVACIU-MARCOV S-D, 2012: Note on eight new thermal habitats with winter-active amphibians in Western Romania. *North-Western Journal of Zoology*, 8: 382–385.
- ULTSCH GR, 1989: Ecology and physiology of hibernation and overwintering among freshwater fishes, turtles and snakes. *Biological Reviews*, 64: 435–516.
- VITT LJ & CALDWELL JP, 2009: *Herpetology: An Introductory Biology of Amphibians and Reptiles*; 3rd Edition. *Academic Press, San Diego*. 697 pp.
- VONGREJ V, SMOLINSKÝ R, BULÁNKOVÁ E & JANDZÍK D, 2008: Extraordinary winter activity of the Green Lizard *Lacerta viridis* (Laurenti, 1768) in southwestern Slovakia. *Herpetozoa*, 20 (3/4) 173.