A photographic record of black eyedness in European common frog (Rana temporaria) from Slovakia

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Abstract. Black colouration of the iris is considered anomalous in some amphibian species. In Rana temporaria only few particular cases were reported in France, Russia and Poland. Here, one new photographic observation of this syndrome in central Slovakia is described.

Key words: amphibians, Anura, colour anomaly, black eye, Carpathians.

A black-coloured iris in the eyes is the normal phenotype of several amphibian species, mostly dendrobatids (Glaw & Vences 1997). However, in other amphibian species cases of black-eyedness are considered to be anomalies, with the eyes completely or partially black due to the lack of a glittering iris caused by the absence of iridophores, a reduction of xanthophores and the dominance of melanophores (Dubois 1976, Nishioka 1977). This anomaly, in most cases likely caused by recessive mutations, could be relatively common in some populations, and it has been reported in several, almost exclusively anuran species, but with a higher frequency of cases reported only in representatives of the genera Rana and Pelophylax (reviewed by Glaw & Vences 1997; Henle et al. 2017). In Rana temporaria, one of the most common European frog species, this anomaly is considered to be very rare (Vershinin 2004), and to the best of our knowledge only few particular cases have been reported. One is known from Hennezel (Vosges department) in France (Rostand 1953), where the respective specimen had a uniformly dark brown iris without any spots of gold colour; however, the general pigmentation of the whole body was the normal phenotype known in the species. The second similar case has been reported in 1969 again in France from Songieu (Ain department; Dubois & Vachard 1971). The young frog here had the right eye entirely black except for a slight golden scent above and the left eye had goldened at the top and darker at the bottom part. Further evidence has been reported in long-term studied urban population of Yekaterinburg on the edge of Asian part of Russia, where among thousands of investigated animals, iris depigmentation was found in one adult and three juveniles (Vershinin 2002). Last known record comes from Central Europe, where in the fishponds in Pruszowice, near Wroclaw, Poland, one specimen with a black left eye was found among dozens of normally eye-coloured individuals in 2015 (Kolenda et al. 2017).

Here we report an additional account of the black-eye anomaly in R. temporaria, the first such case registered in Slovakia in amphibians in general. The observation occurred on 23 March 2019 in a small artificial pond (size ca. 5×10 m) near the village Murán in the Muránska planina National Park, central Slovakia (48° 45' 32” N, 20° 4’ 30” E, WGS 84; 450 m elev.).

Here, the last-listed author of this report photographed several breeding individuals of common frogs in the water, and later, when digitally processing the pictures on a computer, he discovered the respective black-eyed individual (Fig. 1). Unfortunately, we do not have pictures of both sides of the individual, so we are not able to evaluate the potential unilaterality (e.g. heterochromia) of the observed anomaly. In the several days that followed, we observed more individuals of common frogs laying spawns in the pond, but none with the evident black-eyedness anomaly was registered. Several populations of R. temporaria in the surroundings of the site of the presented observation have been studied long-term, including conservation activities during the migrations across roads, but such an anomaly has not been reported in more than 25,000 of individuals inspected since about 1995 (Uhrin et al. 1996, Uhrin & Hapl 2002, own unpublished data).

Figure 1. Black-eyed adult (top) and normal eye-coloured adult of Rana temporaria (bottom) observed near the village Murán, central Slovakia. Photo by Maroš Detko.
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References


