

A case of unilateral anophthalmia in an adult *Pelophylax* kl. *esculentus* (LINNAEUS, 1758)

Various types of morphological abnormalities are found in amphibians all over the world (OUELLET 2000). Among non-skeletal abnormalities that are not related to coloration, anophthalmia (the absence of the eye) and localized or generalized edema are most frequently detected (HENLE et al. 2017).

Out of a large number of documented instances of anuran and urodelan morphological malformations (HENLE et al. 2012; LANNOO 2009), anophthalmia was reported in 159 cases, involving 47 species of Anura and eight of Urodela. The rarity of anophthalmia in natural populations of urodeles was explained by their high capability of regeneration (HENLE et al. 2017).

Probably because they are easily detected, most teratological findings in natural populations of frogs of the hybridogenetic *Pelophylax* kl. *esculentus* (LINNAEUS, 1785) complex apply to malformations of the fingers, toes and limbs such as polydactyly (BORKIN & PIKULIK 1986), ectrodactyly, syndactyly (RAKHIMZHANOVA & KHROMOV 1998), polymely (DUMÉRIL 1865), symmely (BRUCH 1864), clinomely (PUKY 2006), phocomely (KURTYAK 2010) and polyphalangy (ZAMALETDINOV 2014) but also microcephaly (FLAX & BORKIN 2004), melanism, blue-colored individuals (MURPHY 1980), translucent skin (DUBOIS 1968) and anophthalmia. As to the genus *Pelophylax*, anophthalmia was described, e.g., in natural populations of *Pelophylax ridibundus* (PALLAS, 1771) (MARUSCHAK & MURAVYNETS 2013) and reproductive communities formed by individuals of *P. lessonae* (CAMERANO, 1882) and *P. kl. esculentus* (LINNAEUS, 1758) (BERGER & UZZEL 1977).

On September 30, 2017, during the study of water frogs, the authors found an adult male *Pelophylax* kl. *esculentus*, who had only one (right) eye. The frog was captured in a pond of about 4 m², located in Pacov, in the Region of Vysocina, Czech Republic (GPS coordinates: 49.474 N, 14.999 E, 580 m a.s.l.). This and two more

ponds lie next to a narrow stream in a grassy area between the dams of large ponds 1-2 ha in size. Fields surrounding Pacov are used mainly for agricultural purposes providing a potential source of contamination by pesticides. No more malformed frogs were observed at this locality. The skin in the area of the missing eye did not show any visible signs of injury, suggesting that the left eye of this specimen had not developed at all or had been heavily injured during an early larval developmental stage. Nonetheless, the frog was in a good nutritional condition and thus, must have been able to hunt prey successfully despite its reduced spatial orientation. After closer examination, the specimen was photographed and released back to the pond. The causes of the observed monophthalmia remain unknown.

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Fig. 1: The monophthalmic specimen of *Pelophylax kl. esculentus* (LINNAEUS, 1758) from Pacov, Czech Republic. Observe the complete absence of the left eye.
Photo: Tomáš Holer.

ment in *Pelophylax klepton esculenta* (LINNAEUS, 1758) (Amphibia, Anura, Ranidae) from Zakarpattia (=Transcarpathia)]. - Науковий вісник Ужгородського університету [Scientific Messenger of the Uzhgorod University (=Transcarpathian State University), Series Biology] Uzhgorod; 28: 132-134. [in Ukrainian]. LANNOO, M. J. (2009): Amphibian malformations; pp. 3089-3111. In: HEATWOLE, H. & WILKINSON J. W. (Eds.): Amphibian biology. Volume 8: Amphibian decline: diseases, parasites, maladies and pollution. Chipping Norton (Surrey Beatty and Sons). MARUSCHAK, A. & MURAVYNETS A. (2013): Morphological abnormalities in natural populations of anurans (Amphibia, Anura) in Ukraine.- Praci Ukrainskogo Gerpeticologichnogo Tovaristva [Proceedings of the Ukrainian Herpetological Society], Kyiv; 4: 87-94. MURPHY, J. C. (1980): Green, blue, and yellow frogs.- Bulletin of the Chicago Herpetological Society, Chicago; 15: 103-106. OUELLET, M. (2000): Amphibian deformities: current state of knowledge; pp. 617-661. In: SPARLING, D. W. & LINDER, G. & BISHOP C. A. (Eds.): Ecotoxicology of amphibians and reptiles. Pensacola (SETAC Press). PUKY, M. (2006): Amphibian deformity frequency and monitoring methodology in Hungary.- Froglog, Arlington; 74: 3-4. RAKHIMZHANOVA, A. K. & KHROMOV, V. A. (1998): Morphological study of the green frog (*Rana ridibunda* PALLAS, 1771) from eastern Khazakstan province.- Abstracts, page 31. Almaty

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KEY WORDS: Amphibia: Anura: Ranidae; *Pelophylax kl. esculentus*, malformation, teratology, monophthalmia, anophthalmia; veterinary medicine, Czech Republic

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