



Leucism in a Paedomorphic Smooth Newt (*Lissotriton vulgaris*) in a Garden Pond in Essex, United Kingdom

Matthew Hulse¹ and James Douglas Bonthron²

¹8A Rainbow Road, Canvey Island, Essex, SS8 8AE (matthew.95.h@gmail.com [corresponding author])

²10 Harebrook, Ramsgate, Kent, CT11 8BQ, UK (jamesbonthron@gmail.com)

The Smooth Newt (*Lissotriton vulgaris* Linnaeus 1758) is a small species (~110 mm in total length) found throughout Western Europe, including the British Isles, as well as most of southeastern and central Europe (Bell 1997; Speybroeck et al. 2016). Smooth Newts inhabit a diversity of environments, including artificial pools, garden ponds (Bell and Lawton 1975; Vershinin 1996), and various natural aquatic habitats such as lakes, small ponds, and streams (Speybroeck et al. 2016). After breeding in spring and early summer, they return to land (Bell 1997). Adult Smooth Newts prey on frog and toad tadpoles, freshwater crustaceans, terrestrial invertebrates (Sterry 2005), and planktonic animals (Dolmen and Koksvik 1983).

Like other amphibians, newts can be born with leucism, the condition arising from a lack of melanin resulting in a partial loss of pigmentation. Melanin is regulated by the pituitary gland, so leucism is an endocrine issue (Frazer 1983). Paedomorphism, the retention of juvenile features by adults, also is associated with an endocrine malfunction, leading some to believe that the two conditions are associated (Frazer 1983).



Figure 1. A leucistic paedomorphic Smooth Newt (*Lissotriton vulgaris*) observed in a garden pond in Essex, UK. Photograph by Matthew Hulse.

At about 1600 h on 22 May 2015, a leucistic paedomorphic Smooth Newt (total length ~65 mm) (Fig. 1) was discovered while clearing leaf litter in a residential garden pond (maximum depth 50 cm) in Canvey Island, Essex, UK (51.52359, 0.59937). Two species of aquatic plants, Hornwort (*Ceratophyllum demersum*) and Water Crowfoot (*Ranunculus aquatilis*), were in the pond. In addition to the leucistic newt, an abundance of typically colored Smooth Newts and a number of Common Frogs (*Rana temporaria*) were present in the pond.

While leucism and albinism (the complete lack of melanin) differ, some newts described as albinos might well have been leucistic (Allain et al. 2023). At least 15 species of European salamanders with albinism or leucism have been reported (Corsini et al. 2002; Lunghi et al. 2017; Caballero-Díaz et al. 2019; Capula et al. 2023). An albino male Southern Smooth Newt (*L. v. meridionalis*) was recorded in Lombardy, Italy (Modesti et al. 2011), and leucism has been recorded in Caucasian Smooth Newts (*L. lantzi*) in captivity (Kidova et al. 2021), Italian Newts (*L. italicus*) (Capula et al. 2023), as well as Smooth Newts (*L. vulgaris*) (Smith 1964). Also, leucistic captive-bred *L. vulgaris* have been bred by Russian admirers (Kidova et al. 2021). The rarity of leucistic records in nature might be a consequence of individuals lacking melanin being more susceptible to predation (Krecsák 2008).

Literature Cited

- Allain, S.J.R., D.J. Clemens, and O. Thomas. 2023. Taste the rainbow: A review of color abnormalities affecting the herpetofauna of the British Isles. *Reptiles & Amphibians* 30: e18470. <https://doi.org/10.17161/randa.v30i1.18470>.
- Bell, G. 1977. The life of the smooth newt (*Triturus vulgaris*) after metamorphosis. *Ecological Monographs* 47: 279–299. <https://doi.org/10.2307/1942518>.
- Bell, G. and J.H. Lawton. 1975. The ecology of the eggs and larvae of the smooth newt (*Triturus vulgaris* (Linn.)). *The Journal of Animal Ecology* 44: 393–423. <https://doi.org/10.2307/3604>.
- Caballero-Díaz, C., M.A. Pérez-Torres, A. Díaz, G. Sánchez-Montes, and Í. Martínez-Solano. 2019. A report of complete albinism in an adult *Pleurodeles waltl* in the wild. *Boletín de la Asociación Herpetológica Española* 30: 29–31.
- Capula, M., A. Gaetano, and A. Mazzei. 2023. First record of leucism in the Italian

- newt *Lissotriton italicus*. *The Herpetological Bulletin* 166: 45. <https://doi.org/10.33256/hb166.45>.
- Corsini, S., M. Ferretti, V. Pastorino, A. Prati, G. Alario, and S. Salvidio. 2002. *Speleomantes ambrosii* (Ambrosi's Cave Salamander). Albinism. *Herpetological Review* 33: 123.
- Dolmen, D. and J.I. Koksvik. 1983. Food and feeding habits of *Triturus vulgaris* (L.) and *T. cristatus* (Laurenti) (Amphibia) in two bog tarns in central Norway. *Amphibia-Reptilia* 4: 17–24.
- Frazer, D. 1983. *Reptiles and Amphibians in Britain*. Harper Collins, London, UK.
- Lunghi, E., A. Monti, A. Binda, I. Piazza, M. Salvadori, R. Cogoni, L.A. Riefole, C. Biancardi, S. Mezzadri, and R. Manenti. 2017. Cases of albinism and leucism in amphibians in Italy: new reports. *Natural History Sciences* 4: 73–80. <https://dx.doi.org/10.4081/nhs.2017.311>.
- Kidova, E.A., Y.A. Vyatkin, and A.A. Kidov. 2021. Cases of leucism and melanism in the Caucasian Smooth Newt (*Lissotriton lantzi*, *Amphibia*, *Caudata*, *Salamandridae*). *Biology Bulletin* 48: 1729–1731. <https://doi.org/10.1134/S1062359021090065>.
- Krečsák, L. 2008. Albinism and leucism among European Viperinae: a review. *Russian Journal of Herpetology* 15: 97–102. <https://doi.org/10.30906/10262296-2008-15-2-97-102>.
- Modesti, A., S. Aguzzi, and R. Manenti. 2011. A case of complete albinism in *Lissotriton vulgaris meridionalis*. *Herpetological Notes* 4: 395–396.
- Smith, M. 1964. *The British Amphibians and Reptiles*. 3rd. ed. Collins, London, UK.
- Speybroeck, J., W. Beukema, B. Bok, and J.V. Der Voort. 2016. *British Wildlife Field Guides: Field Guide to the Amphibians & Reptiles of Britain and Europe*. Bloomsbury Publishing Plc, London, UK.
- Sterry, P. 2005. *Collins Complete British Animals: A Photographic Guide to Every Common Species*. Collins, London, UK.
- Vershinin, V.L. 1996. The common newt (*Triturus vulgaris* L.) in urban ecosystems. *Russian Journal of Ecology* 27: 133–137.