

An axanthic common frog *Rana temporaria* from Great Britain

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Axanthic animals have skin that may lack the xanthophores and erythrophores that produce yellow, orange and red pigments or lack light reflecting iridophores; alternatively xanthophores may be present but unable to produce pigment. Consequently, such animals have blue or grey coloured bodies with dark patterning and dark eyes. For a review of axanthism in amphibians see Jablonski et al. (2014).

In June 2021, an axanthic common frog *Rana temporaria* L. (Fig. 1) was found in a garden in The Wirral area of north-west England (53° 37'03" N, 3° 05'46" W) under vegetation in a flower bed. This species has long been known to have variable colouration (Smith, 1951), and colour aberrations have also been reported (Smallcombe, 1949; Nicholson, 1997; Allain & Goodman, 2017; Baker & Biddle, 2020). Nevertheless, we believe that this is the first record of axanthism in this species, although 'black eyes' have been described in other ranids, including moor frogs (*Rana arvalis*) (Vershinin, 2004), and in *R. temporaria* in Poland (Kolenda et al., 2017). However, in all reported cases of black eyes in ranid frogs, the animals appeared to have normal coloured bodies.



Figure 1. An axanthic common frog showing typical blue skin (left) and black eyes (right)

Although axanthism is genetically determined, environmental factors including temperature, disease, UV-irradiation or chemicals may be responsible for its expression (Henle et al., 2017). Since the 1960s, many of the reports of axanthism have been from urban areas in industrial countries (Dandová et al., 1995) which suggests that pollution may play a role in this aberration. It may be no coincidence that the current observation of an axanthic *R. temporaria* was from a relatively industrialised area of The Wirral. It seems

possible that this body colour could render the animal more conspicuous, leading to a higher chance of predation and consequently lowered reproductive success. This may be why axanthic frogs are so rarely observed in the wild (Childs, 1953; Dubois, 1979).

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