

NOTE

# Albinism and leucism in Blonde Rays (*Raja brachyura* Lafont, 1871) (Elasmobranchii: Batoidea) from the Irish Sea

D. T. G. Quigley<sup>1\*</sup>, A. de Carlos<sup>2</sup>,  
D. Barros-Garcia<sup>2</sup> and D. MacGabhann<sup>1</sup>

<sup>1</sup>Sea Fisheries Protection Authority, Eastern Region, West Pier, Howth, Co Dublin;

<sup>2</sup>Universidad de Vigo, Edificio de Ciencias Experimentales, 36310 Vigo, Spain

## Abstract

The authors describe the first case of leucism and the second case of albinism in Blonde Rays (*Raja brachyura* Lafont, 1871), and summarise previous reports of similar colour abnormalities in other species of Batoidea.

Natural intraspecific variation in animal colouration is widespread and has triggered important theoretical advances in both evolutionary biology and behavioural ecology (Jacquin et al., 2017). Various types of abnormal colouration have been recorded in both wild and farmed fishes, including albinism, leucism, xanthochromism, melanism, ambicolouration, metachromism, and polychromism (Dawson, 1964, 1966, 1971; Dawson and Heal, 1976). In many cases the aetiology of these relatively rare colour aberrations is unclear and several factors may be involved, including non-pathological genetic mutations, skin pathologies, hormonal imbalance, diet and interspecific hybridisation (Quigley et al., 2016).

Albinism is a genetically inherited disorder controlled by several different genes in which

the pigment melanin is either absent or non-functional, resulting in a lack of normal pigmentation in both the skin and iris (eye). Leucism, on the other hand, is controlled by a single recessive allele, which generally results in either complete or partial lack of pigmentation of the skin, but normal pigmentation of the iris (Clark, 2002; Bigman et al., 2015; Jones et al., 2016). In some cases the term 'partial albinism' has also been used, but by definition, the condition is impossible (Van Grouw, 2006).

Although at least 633 species of extant Batoidea (skates and rays) are currently recognised worldwide (Ebert and Stehmann, 2013; Last et al., 2016; Weigmann, 2016), leucism, and more rarely, albinism and 'partial albinism' (sic), has only been reported in 22 (c.3.5%) species to date (Table 1). In the absence of specific details

\* Corresponding author's e-mail: declan.quigley@sfpa.ie