

Iridescence as Camouflage

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Iridescence is an enigmatic and striking form of structural coloration in which perceived colour changes depending on the angle of view or illumination. It is widespread in the animal kingdom, and can be admired in everything from the shimmering, metallic elytra of beetles, to the mesmerizing feathers that adorn peacocks and hummingbirds. Bright colours are often considered an evolutionary trade-off; they might help attract a mate, but they might also attract the attention of a hungry predator. The ‘father’ of modern camouflage theory, Abbot Thayer, proposed a surprising idea about the function of iridescence: that it could work as a highly effective form of camouflage. Thayer’s idea is completely counter-intuitive, how can colours that are both brilliant and changeable contribute to an animal’s concealment?

In this talk, I will present data showing that biological iridescence, produced by multilayer cuticular reflectors in real jewel beetle (*Sternocera aequisignata*) wing cases, provides effective protection against predation by birds, and that the most likely explanation for this is, indeed, camouflage. This study is the first to provide empirical evidence for the century-old hypothesis that iridescence can work as a form of camouflage in a natural setting, providing an adaptive explanation for why iridescence has evolved independently so many times.

Biography

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I am a behavioural and evolutionary ecologist, working in the CamoLab (<https://camolab.com/>) at the University of Bristol. I completed my BSci and MSci in Biology at the University of Gothenburg (Sweden) in 2009, and my PhD entitled "Anti-predator adaptations in aquatic environments" at Åbo Akademi University (Finland) in 2014. I then moved to Bristol, where I have worked on the BBSRC-funded projects ‘Deceptive Iridescence’ (2015-2019), ‘Concealing 3D-shape’ (2019-present) and spent one year as a lecturer (2017). I am fascinated by the impressive array of strategies animals use to avoid being eaten, and the core of my research focuses on understanding the how and why of anti-predator colouration.