

BOOK REVIEW

Philip Howse & Kirby Wolfe (2012). THE GIANT SILKMOTHS: COLOUR, MIMICRY & CAMOUFLAGE

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On surrealism, beauty, evolution and entomology

Imagine yourself walking in a dark street of a lawless cosmopolitan city, and suddenly you are in danger. A very aggressive assailant is approaching. You do not panic, as you prepared everything thoroughly for this moment. In order to escape the assailant you have special powers, you can stop and transform yourself into a venomous snake; alternatively, you might suddenly show the assailant a dragon face and an enormous lethal gun that will scare him to take flight; you might dress in clothes that make you invisible, or you might transform yourself so that the assailant believes you are an uninteresting moth.

This could be a plot of a surrealistic science fiction film, but fortunately for nature lovers, it is the story of many real living beasts. Philip Howse and Kirby Wolfe (*"Giant Silkmoths: Colour, Mimicry & Camouflage," Papadakis, UK*) introduce us to this surrealistic world with Wolfe's spectacularly beautiful pictures and a scholarly, deep and wide reaching, but simple worded, instructive text. The reader, even if he is not a butterfly lover, will learn about eco-ethology, population genetics, entomological history, neurophysiological psychology, co-evolution and evolutionary thinking, among many other things, even if he has no formal training in any of these fields.

For example, the authors introduce the novel concept of "masking mimicry", to describe the response of insect-eating birds to detail rather than to the whole picture, which explains the presence of images of other animals embedded in the wing patterns of silkmoths. These include features of birds: beaks, eyes, feathers and wings, strongly suggesting that confusion of a predator's vision has been a significant element in the evolution of moth wing patterns and designs. The book also explains how wing patterns, colours and designs of silkmoths may have evolved by Batesian and Müllerian mimicry and by mimicry of features of the environment, including those of plants and of other animals. It explores extensively the different types of mimicry with multiple examples and opens new insights into the understanding of the psychology of moth predators which could have had a role in driving the evolution of moth camouflage.

The neuropsychological explanations for features of visual perception of for example, owl eyes, butterfly wing designs, and works of art, opens bridges to a more scientific understanding of art. This interface between art and science, although not followed further in the book explicitly, is suggested with the beautiful presentation of photographs of exceptional quality, and through a novel interdisciplinary way of looking at the evolutionary biology of perception. The book is a treasure, not only for entomologists but for nature and art lovers of any stripe. This book is a worthy successor to Howse's award-



Fig. Giant Silk Moths (Saturniidae): (A) *Diriphia centralis*; (B) *Arsenura orbignyana*; (C) *Hemileuca electra mojavensis* (photos by Kirby Wolfe).

winning *"Butterflies, Messages from Psyche"* (Papadakis, UK), also published in North America as *Butterflies: Decoding their Signs & Symbols* by Firefly Books Canada).

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