

Concealing Coloration in Animals

By Judy Diamond and Alan B. Bond. 2013. Belknap Press-Harvard University Press, 79 Garden Street, Cambridge, MA, USA, 02138. 288 pages, 29.95 USD, Cloth.

I have always found colour fascinating. As a naturalist this is an even more intense interest. So this new book was an ideal one for me to read. I began reading with high hopes and I was not disappointed. The authors were concerned, not with how the colours are created, but with the way they are used. We have all

heard the oft-repeated phrases about camouflage, dazzle patterns and sexual attraction. There is some truth to these ideas, but there many questions raised about the validity of these “accepted” concepts. How many times have we seen a warbler with a beak full of green caterpillars? If a green bug on a green leaf cannot

escape detection then what good is camouflage? We have all seen videos of African Lions bringing down a Burchell's Zebra. So what value has dazzle pattern? Eastern Wood-Pewee is not the most dazzling species yet they do get mates. So why does the same wood lots house the fluorescent Baltimore Orioles?

Diamond and Bond explain what we know of the evolution of concealing colouration and how it fits into concealment strategy. They describe how this works and what are the flaws that allow predators to get their food. For humans it is hard to see these flaws as camouflage generally fools us. A couple of years ago I bought an expensive green laser because I had been so frustrated by animal camouflage. I have spent almost an hour pointing out a hummingbird on its nest or a sleeping Common Night hawk. The laser relieves this problem. A photograph in the book of a desert mantid reminded me of the time I tried to point one out to a group. It took several minute for most of the group to see it, despite holding my finger one centimetre above its head. Eventually I gently nudged its rear and it moved one leg and then the last three people picked it out.

In discussing mimicry the line blurs with camouflage. Does a stick insect or a caterpillar mimic a twig or is it very clever concealment? In North America the Monarch butterfly is a legend. The Viceroy is its mimic – or is it the other way around? The Monarch is toxic, but the Viceroy is distasteful, so who mimics who? Or do they both benefit by being similar?

The value of bright colour is to attract mates we are told. There are healthy populations of the world's most colourful birds so they avoid predation and still get mates. Then there are all those Little Brown Jobs that skulk out of sight. They also avoid predation and get mates.

As well as considering the forms that have evolved to camouflage creatures the authors consider how light affects an eye. Given there are a wide range of eye types this is a complex issue. We so often lapse into thinking the world is the way we see it, but it is not. Some other animals have better and some have poorer vision than we do. Yet they all survive in a competitive world.

The authors look at these types of questions and use research results to try to explain how colour affects the lives of earth's creatures. In a dozen chapters they discuss the initial camouflage through to detection by predators. They explore the lives of shrimp, grasshoppers, moths and butterflies, birds and mammals. They draw on work by Darwin, Wallace, Aristotle, Tinbergen and a host of others. Indeed they have 40 pages of references-nearly 15 percent of the book.

If you want to read a scientific thriller then this is your book. Do not expect that, like Hercule Poirot's cases, you will have a final answer on the last page. You may finish the book with more questions than when you started. That is the fun! This book opens your mind so you will never "See" the world the same way again.

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