and the theory of island biogeography exemplified this in two respects. First, it treated all species as identical, with the same immigration and extinction rates. The number of species on an island did not depend on which particular taxa were involved or even what kinds of taxa (e.g., generalists versus specialists). Second, it was an equilibrium theory—ultimately the number of species on an island would reach an equilibrium at which immigration balanced extinction. Because the equilibrium point is reached no matter what the starting point, an equilibrium point renders history irrelevant. It is extremely interesting how the paleobiology movement sought, and to some extent achieved, much the same thing for patterns of diversity in the fossil record.

There is much, much more in the book. Another major issue concerns the stochastic character of paleobiological theories of taxon diversity. This is related to the treating of species as roughly equivalent, so that differences in their fates are understood as more or less a matter of chance. The generalizing efforts of the paleobiologists were stymied by particular episodes in the past when specific groups of taxa proved to be ecologically distinguishable after all (the hard-to-shake idiographic element). It is fascinating to see how stochasticity aligned with the nomothetic ideal here.

Precisely where—between history and nomothetic science—paleobiology should reside was itself an issue of contention among the new discipline’s practitioners. Some, like Gould, seemed to waver (or at least switched emphasis), sometimes positively accentuating the nomothetic aspects of the practice, sometimes the historical. Of course, Gould is well known as a historian as well as a scientist. But in general, the actors’ various conceptions of the nature of history—relative to which they were situating themselves—were not unschooled: Van Valen publishing in *New Literary History*, Gould and Schopf trading views on Isaiah Berlin, etc.

As for the outcome, Sepkoski views the early development of paleobiology as one in which a strong nomothetic leaning was ultimately tempered by “the inescapable pull of history.” An exceptional book, *Rereading the Fossil Record* draws wisely and appreciatively on the work of fellow historians of science (to mention just a few: Ronald Rainger, Joe Cain, V. Betty Smocovit, Michael Ruse, and Sharon Kingsland). But it stands on its own as a major contribution that will interest biologists, historians more generally (it’s not only good history, it’s about history), and philosophers alike.

References

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**Bird Sense**

**What It’s Like to Be a Bird**

by Tim Birkhead


Birkhead addresses this urge by rigorously examining one of the different senses of birds, exploring the anatomy, physiology, and mechanics by which various species perceive the world. He aims both to give us insight on what it really means to be a bird and, in so doing, to enrich our appreciation of these animals.

Throughout the book, Birkhead deftly integrates a deep knowledge of the history of avian science (including some rather brutal, if demonstrative, early animal experimentation) with fascinating feathered facts and delightful stories of science in action. He is also unafraid to tackle the speculative (particularly in the last chapter, where he examines what little we actually know about birds’ emotional senses). I suspect that nearly all readers will be left with a strong sense of wonder at the range and breadth of sensory abilities of individual bird species as well as a renewed appreciation for the painstaking processes by which these sometimes obscure facts have been discovered.

This said, Birkhead falls a bit short on the promise held out in the subtitle: *What It’s Like to Be a Bird*. For casual readers, or the more philosophical and poetic souls, the pages of dry, technical details (such as of the number and size of fovea among bird species) and the consistent strong focus on anatomy are more likely to bore than to reveal or delight. Likewise, the many intriguing tidbits of information Birkhead provides often fail to coalesce into a integrated perspective on how the biology of a particular species guides the way individual birds use and interpret the world around them.

Yet even if *Bird Sense* does not succeed in furthering the philosopher Thomas Nagel’s lofty goal of understanding what it might be like to be so “other” (1), Birkhead nonetheless offers a treasure trove of captivating details and much lovely storytelling. Anyone drawn to birds will find that, contrary to Whitman’s intuition, our appreciation of this particularly diverse and fascinating group of animals can be deepened by knowing more.

References