

The Migration of Birds: Seasons on the Wing

By Janice M. Hughes. 2009. Firefly Books Ltd., Richmond Hill, Ontario. \$40.00, 207 pages.

“Birds travel because they must, they go because they wish to, and they journey because they can” – a neat description of bird migration by the author. If you are looking for a book for a birdwatcher friend, consider this one. It summarizes what is known today about migration and how that knowledge was accumulated. The author prepares the ground by first giving the history of what is known about the evolution of birds and the archaeological finds. She covers the science of flight, ancient legends, “hibernation” (particularly that old myth of hibernating swallows, postulated first by Aristotle and not laid to rest – reluctantly – until the 19th century), and the early printed books which speculated on why birds migrate. One was a book by Linnaeus in 1757 entitled *Bird Migration*, another was by Gilbert White.

It has been a long, slow search to plot migration routes, to map wintering and breeding grounds, and the different paths used are well described and illustrated. As technology has advanced in the fields of climatology and telecommunications, so has knowledge about migration. A new hazard for some birds on migration is that with the warming climate, flower and insect food peaks and have completed their cycles before the migrating birds arrive at their nesting grounds.

In the laboratory, scientists have analyzed the hormonal changes which trigger migration and the subsequent minute changes in the bird brain. These changes also initiate accelerated weight gain needed to sustain the bird’s body on long flights. “Bird brain” as a taunt is a misnomer, since in fact these small brains are complex – among other substances, they contain magnetic crystals, a compass, and memory. The tiny crystals are magnetite, a type of iron ore. It is now well known that direction-finding on migration depends primarily on the geomagnetic fields of the earth which are relayed to the bird brain. Solar and stellar positions as internal compasses are secondary aids to navigation

and all three methods help a bird to plot origin, stop-over, and destination positions and to follow a strict path, with one or other of the three used to recalibrate direction when the bird goes off course.

Another, less important, aid to navigation is provided by some long wavelength infrasounds generated in the jet stream which create landmarks audible to migratory birds. Homing pigeons have been important laboratory subjects in providing scientific knowledge about migration because their navigation instincts have been heightened by the selective breeding of pigeon fanciers. Carrier pigeons were used by Genghis Khan, Charlemagne, Reuters, and even modern armies to carry messages. Memory also plays a role in navigation. Many bird species have demonstrated memory such as Blue Jays and Clark’s Nutcracker which cache food and remember their larders. Some birds have shown evidence of genetic memory – a Whooping Crane which was born and spent its life in Florida was transported in spring to Manitoba (by plane), released there and returned alone to its birth place in the fall.

The author discusses the hazards of migration – loss of staging grounds, collisions with office buildings and communication towers, predation by cats, and adverse weather. There are excellent and helpful two-page profiles of some individual migratory species which include: Chinese cranes, Phalaropes, Shrikes, Arctic Terns, Wheatears, Dippers, and birds of prey. These individual accounts describe in detail the life story and particular migration of that species and include a map showing its breeding, wintering grounds and the migration routes.

Throughout the book there are excellent photographs, and illustrations of radar tracking – a credit to the Chinese printers. There is a glossary, a general index and a species index but, unusually, there is no information about the author.

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A Photographic Guide to Seashore Life in the North Atlantic – Canada to Cape Cod

By J. D. Sept. 2008. Princeton University Press, 41 William Street, Princeton, New Jersey 08540. 224 pages, 19.95 USD Paper.

I have long believed that a real naturalist is interested in all life. Some of my birder friends refer to the plants that birds perch on as “green stuff.” I think that such an attitude is a sad loss because there are many wonderful, non-avian things to see on this earth. There are a lot of top quality choices for books on birds, plants and mammals. There is a more modest choice for reptiles, butterflies and dragonflies. There is not much available however on seashore life so any

book is welcome. Sept’s guide covers most of the common species found on rocky shores, sandy shores, mud beaches, and floating docks.

This guide covers a wide range of organisms from worms, jellies and sea anemones, through clams and crabs, to seaweeds, lichens and seashore plants. Indeed the author portrays examples from 15 phyla. With the introductory section it is a Course 101 for shore life. Each species is illustrated with high quality, clear