



Feathers: The Evolution of a Natural Miracle

Thor Hanson

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Feathers are an evolutionary marvel: aerodynamic, insulating, beguiling. They date back more than 100 million years. Yet their story has never been fully told. In *Feathers*, biologist Thor Hanson details a sweeping natural history, as feathers have been used to fly, protect, attract, and adorn through time and place. Applying the research of paleontologists, ornithologists, biologists, engineers, and even art historians, Hanson asks: What are feathers? How did they evolve? What do they mean to us? Engineers call feathers the most efficient insulating material ever discovered, and they are at the root of biology's most enduring debate. They silence the flight of owls and keep penguins dry below the ice. They have decorated queens, jesters, and priests. And they have inked documents from the Constitution to the novels of Jane Austen. *Feathers* is a captivating and beautiful exploration of this most enchanting object.

Feathers: The Evolution of a Natural Miracle Details

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Author : Thor Hanson

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From Reader Review Feathers: The Evolution of a Natural Miracle for online ebook

Tracy Rowan says

Hanson is what I think of as a great science writer. He engages our imaginations while imparting facts, and I suspect that is at least in part because he has such a lively sense of wonder that he can't help but infuse even the most prosaic of information with a feel of awe as if the evolution of feathers or seeds, or whatever else he's writing about is pure magic. And in a sense, the things he writes about are magic, or as close to as we get in our world.

The discovery of feathered dinosaurs, the evolution of feathers as tools for flight, insulation, and even courtship, are all topics which Hanson covers here, framing them with his own experiences of his backyard chickens, his travels to museums and to meet with bird researchers, his field experiences (one of which made him smell like rotting zebra guts for days.) He writes cleanly and engagingly on all these topics making the information wholly accessible.

The only flaw I found in this audiobook was the narrator. In general his narration is workmanlike, no more, sometimes a bit flat and expressionless, but it serves the purpose. However, when he tries to render voices, it's at best distracting, as when he lightens his voice for quotes from women, and at worst almost embarrassing as when he renders the speech of a Chinese researcher. It's not so much that he does a terrible job at either, but that he does it at all. It feels out of place. I don't know if these were his choices, or if he was asked to do the voices. Either way, I think it was a mistake.

But don't let that put you off listening if that's the way you'd prefer to read this particular book. It's worth it no matter how you approach it. So far, everything Hanson has written is worth your time, in my opinion.

Stefan says

This is a brilliant book on a most captivating subject. I would strongly recommend reading it.

Kaushik says

Very enjoyable read that makes you appreciate birds around you a lot more.

aPriL does feral sometimes says

Great read. A lot of little fluff which adds up, chapter by chapter, into a surprisingly attractive, colorful tail of history, biology and science. I think nesting for a few days with this book hatches more curiosity than any desire for throwing rotten eggs. I am now cuckoo for watching the skies because I had a hoot reading this book. My head is still spinning 180 degrees, all a-flutter at the interesting flybys past feather-light informative facts, which for all of the light touch was by no means a featherbed of a job.

As many great teachers have advised, the author begins at the beginning; mainly, the discovery of Archaeopteryx, which had a reptile skeleton and feathers of a bird.

Doctor Carl Haberlein of Bavaria had need of money, so he paid in medical treatment the quarrymen in exchange for any fossils they found in their pursuit of rocks. Fossils were in demand, particularly in the intellectual war that had broken out with the publication of Darwin's book on evolution two years before. A nameless quarryman who had a cough enabled the greedy doctor's retirement by bringing Haberlein an almost perfect specimen of the lizard bird. Haberlein sold it to a famous Creationist of the time, which ended up proving the likelihood that the theory of evolution was correct instead of Creationism. Oops.

From this extremely entertaining true story Hanson quickly expands the mystery of feathers into the known and, shockingly, the still unknown facts of how feathers work. Studying the form and function of feathers has led to the development of scientific theories-on biology/colors/light/physics, airplane wings and propellers, writing and art (quills, poetry), industries (hats, fly-fishing, down-filled insulated clothes, waterproofing, decorative arts (amazing historical stories of the feather garments that the Aztecs and Incas created), and courtship (gentlemen, please take notes).

Thor Hanson has done a terrific job writing a little book about a subject which should have been as dull as watching paint dry, especially since the provided pictures are hand-drawn and mostly of feathers, and obviously no video (I suggest googling - birds are fun to watch, especially some of the courting dances). I read the ebook version of this book, and maybe someday the publisher will provide links to Internet websites that illustrate the stories, but I was charmed, nonetheless.

Mary T says

I had a difficult time "getting into" this book. However once I did, I found it to be informative and interesting. I have shared interesting facts about feathers with friends.

I read this book as the result of being a member of an Audubon Book Club. While I don't think it would appeal to all, I believe that not only those interested in birds would find this interesting, but also those interested in learning the many uses of feathers, in the past and currently would find the book interesting.

Peter Mowris says

Way too many anecdotes made this a quick read. Why the hell do I care what your wife thinks of your research? Also it draws on paleontology and ornithology without really adding to either. Popular science writing sometimes does not work

Atila Iamarino says

Tema inusitado e bem tratado. Tem aquela pegada pessoal do autor descrevendo situações e conversando com pesquisadores, bons comentários e insights legais. Adorei a parte do tráfico de avestruzes para África do Sul. Não tinha me atentado para o quão isolantes penas podem ser, a ponto de aves migratórias e pinguins aguentarem condições de sensação térmica de -80°C, sem precisar do tanto de gordura que nós precisamos.

Correen says

It is a great joy to come across an information-packed book that appears to be written with joy and enthusiasm. When I first started reading this volume, I recognized it as one that I would want to savor over some time so I returned my book to the library and purchased my own copy. Hanson discusses the evolution of feathers, or what can be discerned about the evolution dating back to dinosaurs, and evolving with numerous possible benefits to animals – not initially including flight. Hanson also covers current benefits to birds, coloration, human use, economics, research, and other interesting topics. I loved the book and will pass it on to my birder, science student granddaughter.

April says

This book was a pleasant surprise and enjoyable to read. It's the first non-fiction book I've read that centers on animals rather than humans and I have to admit that it was a nice change! Hanson is detailed and specific enough to make things interesting, but also is ambitious in scope (lots of ground covered). Who knew that feathers could be so fascinating!

Great mix of natural history, social history, economics and personal narrative. Definitely recommend!!

BTW the author lives in the San Juans. So LOCAL+!

Paul says

This is one of those disappointing books where the author inserts way too much of himself into what could otherwise be a simple factual narrative. I don't give a shit if the author raises chickens or whatever. Clearly someone has been takin William Zinsser's advice.

I'm also a bit torn about the prominent appearance of Richard Prum in this book, because Prum's own book *The Evolution of Beauty* was packed full of awful arguments, and it makes me much harder to take the guy seriously. Prum comes off as very reasonable in this book compared to the "birds are not dinosaurs" folks.

In the end, I learned some things about birds and feathers, but not a whole lot. I still don't really understand why feathers are necessary or even useful for flight, and most of his "feathers are the most amazing thing in the whole world" feels like puffing about your research subject. Everyone says their subject is the most amazing thing in the whole world.

Marvin Goodman says

I love a book that takes a subject I know nothing about, one in which I don't consciously harbor any interest in, yet draws me in completely. I know nothing about paleontology or birds, and very little about non-mechanized flight, but my Dad gave a glowing recommendation for this book. I picked it up and was immediately drawn to Hanson's enthusiasm for his subject, and his ability to explain the concepts to a

complete neophyte like myself, without giving the impression that he was speaking down to me.

Hanson seamlessly intertwines the functionality of a feather with evolutionary theories about them, taking care not to lobby too strenuously for one theory over another personally, but rather letting the trends in scientific theory unfold to the reader gradually. This is probably masterful on his part, letting us arrive at the conclusions he wants or expects us to arrive at, without feeling like he has pushed us there.

The feather is, indeed, a marvel of function; at once airfoil, insulation, armor, heat sink and mating attire, yet I had really never given them a thought. One curious thing I'll take away from the book is not to pick up every feather I find on the ground. The reasons they fall out can be a bit disquieting, if you're not into little crawlies.

I've looked at birds differently since reading this book, with more respect for the evolutionary wonder that they are. I guess the good thing about birds and feathers is that, whether you believe that they evolved over millions of years, as the fossil record shows, or believe that a god created them magically a few thousand years ago, they're no less fascinating or beautiful in either case.

Brian says

Some interesting parts but too much digressing, usually about some meeting or something the author had done. Pages were taken up going through various meetings in way too much detail. The curse of the 250 page book.

Haaze says

This book was definitely about feathers. It emphasized the biology and natural history of birds, but often included substantial sojourns linked to humans. Topics such as the feather trade, fashion, quills, down jackets and pillows, fly fishing and more often took up my time. Personally I favored the details focusing on the evolutionary reasons for these amazing structures unique to the birds. Definitely an education from both an ornithological as well as an anthropological/ historical perspective. Hanson writes with passion and interest as he discusses feathers. Recommended for anybody interested in any aspect related to feathers (and, of course, to bird enthusiasts).

Soh Kam Yung says

An impressive book about a 'feather-weight' subject. Through personal research and interviews with various people, Thor Hanson has shown that feathers are really a biological and physical wonder. You probably won't look at a feather and say, "Oh, just a feather," after going through this book.

Hanson starts by describing the appearance of the feather in prehistory, via fossils like Archaeopteryx lithographica and then the discovery of dinosaurs with feathers in the Yixian Formation in China. Then comes a fascinating bit where he puts forward the major ideas about how birds evolved flight (ground-up or

tree-down) before surprising us with a third-way that appears to nearly solve the problem.

The purpose of feathers is next, with a look at their properties that enable birds to stay warm, to stay cool and, of course, for flight. The beauty of feathers, in both shape and colour, is then highlighted, both for our pleasure and for the female birds. A fascinating section on how the Manakin bird can apparently use its wings like a violin to make a steady tone is then presented; amazing.

This book provides an interesting scientific look at feathers, and Hanson makes it more entertaining by letting us see his own attempts at studying the feather, sometimes with embarrassing outcomes.

Matt says

Compulsively readable. Unlike other natural histories I've read, Hanson keeps his chapters short and focused and they are more fascinating for it. A marvel of insulation, water resistance, lightweight aerodynamics and color, feathers are truly an incredible example of evolutionary engineering, and this book will alter your perception of and appreciation for them.
