

PREFACE

THE evidence for evolution grows by the day, and has never been stronger. At the same time, paradoxically, ill-informed opposition is also stronger than I can remember. This book is my personal summary of the evidence that the 'theory' of evolution is actually a fact – as incontrovertible a fact as any in science.

It is not the first book I have written about evolution, and I need to explain what's different about it. It could be described as my missing link. *The Selfish Gene* and *The Extended Phenotype* offered an unfamiliar vision of the familiar theory of natural selection, but they didn't discuss the evidence for evolution itself. My next three books, in their different ways, sought to identify, and dissolve, the main barriers to understanding. These books, *The Blind Watchmaker*, *River Out of Eden* and (my favourite of the three) *Climbing Mount Improbable*, answered questions like, 'What is the use of half an eye?' 'What is the use of half a wing?' 'How can natural selection work, given that most mutations have negative effects?' Once again, however, these three books, although they cleared away stumbling blocks, did not present the actual evidence that evolution is a fact. My largest book, *The Ancestor's Tale*, laid out the full course of the history of life, as a sort of ancestor-seeking Chaucerian pilgrimage going backwards in time, but it again assumed that evolution is true.

Looking back on those books, I realized that the evidence for evolution itself was nowhere explicitly set out, and that this was a serious gap that I needed to close. The year 2009 seemed like a good time, it being the bicentennial year of Darwin's birth and the 150th

anniversary of *On the Origin of Species*. Not surprisingly, the same thought occurred to others, and the year has seen some excellent volumes, most notably Jerry Coyne's *Why Evolution is True*. My highly favourable review of his book in the *Times Literary Supplement* is reproduced at <http://richarddawkins.net/article,3594,Heat-the-Hornet,Richard-Dawkins>.

The working title under which my literary agent, the visionary and indefatigable John Brockman, offered my book to publishers was *Only a Theory*. It later turned out that Kenneth Miller had already pre-empted that title for his book-length response to one of those remarkable courtroom trials by which scientific syllabuses are occasionally decided (a trial in which he played a heroic part). In any case, I had always doubted the title's suitability for my book, and I was ready to shelve it when I found that the perfect title had been lurking on another shelf all along. Some years ago, an anonymous well-wisher had sent me a T-shirt bearing the Barnumesque slogan: 'Evolution, the Greatest Show on Earth, the Only Game in Town'. From time to time I have worn it to give a lecture with that title, and I suddenly realized that it was ideal for this book even if, in its entirety, it was too long. I shortened it to *The Greatest Show on Earth*. 'Only a Theory', with a precautionary question mark to guard against creationist quote-mining, would do nicely as the heading to Chapter 1.

I have been helped in various ways by many people, including Michael Yudkin, Richard Lenski, George Oster, Caroline Pond, Henri D. Grissino-Mayer, Jonathan Hodgkin, Matt Ridley, Peter Holland, Walter Joyce, Aaron Galonsky, David Noakes, Elisabeth Cornwell, Yan Wong, Will Atkinson, Latha Menon, Christopher Graham, Paula Kirby, Lisa Bauer, Owen Selly, Victor Flynn, Michael Kettlewell, Karen Owens, John Endler, Iain Douglas-Hamilton, Sheila Lee, Phil Lord, Christine DeBlase and Rand Russell. Sally Gaminara and Hilary Redmon, and their teams in (respectively) Britain and America, have been wonderfully supportive and can-do-ish. On three occasions while the book was going through the final stages of production,

exciting new discoveries were reported in the scientific literature. Each time, I diffidently asked if the orderly and complex procedures of publication might be violated to accommodate the new find. On all three occasions, far from grumbling at such disruptive last-minutemanship, as any normal publisher might, Sally and Hilary greeted the suggestion with cheerful enthusiasm and moved mountains to make it happen. Equally eager and helpful was Gillian Somerscales, who copy-edited and collated the book with literate intelligence and sensitivity.

My wife Lalla Ward has once again sustained me with unfailing encouragement, helpful stylistic criticisms and characteristically stylish suggestions. The book was conceived and begun during my last months in the professorship that bears the name of Charles Simonyi, and completed after I retired. In signing off as Simonyi Professor, fourteen years and seven books after our momentous first meeting, I would once again like to express my grateful appreciation to Charles. Lalla joins me in hoping that our friendship will long continue.

This book is dedicated to Josh Timonen, with thanks to him and to the small and dedicated band who originally worked with him to set up RichardDawkins.net. The web knows Josh as an inspired site designer, but that is just the tip of an amazing iceberg. Josh's creative talent runs deep, but the image of the iceberg captures neither the versatile breadth of his contributions to our joint endeavour, nor the warm good humour with which he makes them.