The Darwinian Tourist: Viewing the World Through Evolutionary Eyes
By Christopher Wills
Oxford University Press, Oxford
288pp, £18.99
ISBN 9780199584383
Published 28 October 2010

Darwin was a lucky tourist. He travelled widely for five years in the 1830s on board *HMS Beagle*, gathering data and specimens that enabled him to make spectacular scientific breakthroughs. He did not know that 21 [**26?**] of the 107 ships built on the same model were lost at sea, and that the Royal Navy called them coffin brigs.

The luck, though, was not so much in his survival, but that he took time – to look, analyse and experiment. His letters are revealing. There is a calmness about discovery ("my collection of plants is interesting") and a recognition of his limitations ("my unornithological eyes") and yet he wrote with a depth of perception that is humbling.

Christopher Wills is an evolutionary scientist from the University of California, San Diego, and in this lavishly illustrated book he travels the world as a latter-day Darwinian tourist. He seeks to view the world through evolutionary eyes, and explores rainforests and coral reefs, steppes and mountains, swamps and farms.

There is much to fascinate, especially how the study of whole ecosystems and their emergence is given a modern edge by explaining new findings on DNA sequences. What we thought was true is being changed by better molecular understanding and this informs what we now can deduce about hundreds of millions of years of evolutionary history. It is now known, for example, that we vertebrates are much more closely related to sea urchins than previously thought. Wills tells us what is vital about biodiversity, and concludes that if we let ignorance and the denial of evolution prevail, then we are indeed in deep danger.

But the trouble with a predominant focus on unusual biodiversity is that it can all too easily stray into a kind of celebrity culture: extremes of shapes and colours; remarkable features such as the hoatzin's clawed wings for climbing trees before it can fly; shrimps that generate flashes of light – all these tend towards a sort of *X Factor* of species. How strange is that one? Surely the oddest will be the winner? I also felt at times a "why-oh-why" coming on. Do mitochondria have to be "cute ovoids", deserts always "heat-blasted", mangroves of course "dense", coral reef fish always "shy", the Amazon forests a "cast of characters", and the lives of bacteria in ruminating guts short, but "one hopes, happy".

This is a book mainly for dipping into. There are revealing stories about domestication: of dogs from wolves – easy for some wolves but not others; about elephants – hard for African and easier for some Asian. (But then where did Hannibal get his Alpine beasts?) A range of natural as well as human-led selection processes are explained. In one canyon on Mount Carmel near Haifa in Israel, fruit flies from the hotter side are able to repair their DNA more readily than those living on the cooler side. Mole rat species in the region have different numbers of chromosomes, and their distribution is tightly linked to rainfall and the permeability of soil to oxygen. The environment shapes species and forces selection. Now, of course, it is we industrialised humans that are forcing choices. Many now lead to extinctions.

But among these considered analyses are some simplistic statements rather typical of tourism. In Madagascar, the "exploding human population" is said to be "primarily to blame for the island's ecological disaster". In Arnhem Land in Australia, the author drives for hours and sees "no signs of human occupation" – the classic agrarian bias of visitors to lands managed by hunters and gatherers. They assume the land is empty and the locals are mismanagers.

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Wills further castigates Aboriginals for burning their land, when burning has for tens of thousands of years been a tool of land management. Deborah Bird Rose has carefully documented many such practices of what is locally called firestick farming: the fire is used to make the country happy. To return to Darwin, who caught specimens of a marine arrowworm off the coast of Brazil and wrote that its exceedingly minute teeth had not been noticed by other observers, we are reminded that what he did was to take the time that ordinary tourists today rarely do.

Nearly 30 years ago, Robert Chambers' remarkable book *Rural Development: Putting the Last First* set out novel ideas about rural development tourism and its dreadfully blind biases. Go to a rural place when the roads are passable, and you will miss the erosion caused during the rains. Go in the daytime, and you will miss night irrigation patterns and water stealing. Speak to the rich and you will never know the poor; listen to the literate and you will never hear the non-literate. Is it time, perhaps, for a new analysis – of the biases often inherent in the short-term visits of scientific tourists?

Jules Pretty is professor of environment and society, University of Essex.