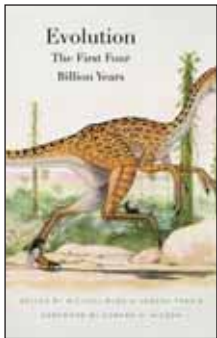


Book review: *Evolution. The First Four Billion Years*

150 Years: How Much is That?

In 1859, Darwin wrote *On the Origin of Species*, a book that changed the perception of the natural world. At the sesquicentennial of the publication, more than one hundred authors were gathered to explore the current state of evolutionary science.

Who didn't hear about Darwin last year? Exhibitions, meetings, movies, stamps, books, conferences. Nothing was enough to celebrate the 150th birthday of one of the biggest revolutions in science.



But it was also an appropriate occasion to think about what has happened since then: how the theory of evolution has been continuously shaped and how it has impacted many other areas of human thought,

maybe like no other theory in science has ever done.

The US philosopher Michael Ruse and the also-US biologist Joseph Travis joined the celebration and were brave enough to edit a book that attempts to present evolutionary biology in its modern context. The result is a 1,000-page weighty tome arranged in two formats: a compendium of 16 essays about diverse topics in evolution, followed by a compilation of short encyclopaedia-style entries.

A long way from Darwin

In his most famous book, curiously, Darwin never used the word 'evolution' (actually 'evolved' appears once: at the end). It was after his career that the expression acquired the meaning that it has today in its biological context. In the opening essay, Ruse introduces us to the history behind the idea. During the following essays, we also encounter how concepts inherent to the theory, such as speciation and adaptation, have been shaped through the years.

Evidence confirming evolution as a fact are also a mirror of each decade. Palaeontology, for instance, was there even before

Evolutionary researchers obviously have a distinct preference for beards, as co-editor Michael Ruse and his friend Charles demonstrate here.

the concept of a world evolving, while molecular evolution and genomics are more recent areas to account for the existence of the diversity of species. Most of the essays address these topics in an exciting way, but unfortunately some of them get too technical.

There is another side of the topic also discussed in the book: the influence of evolutionary biology in medicine, philosophy and society. One of those interesting chapters relates briefly some of the views that different religions, namely the Catholic, Protestant, Jewish and Islamic faiths, have held about evolution.

The ABC guide to evolution

The second part of the book devotes more than half of its space to biographies and books relevant to the history of evolutionary thought. We find interesting details about famous figures such as Aristotle, but we also encounter plain biographies, like the one for Rosemary and Peter Grant, contemporary evolutionists famous for studying Darwin's finches in the Galápagos Islands. The style and length of each of those entries seem to be more related to who wrote it than to its relevance.



In the introduction, we were promised the inclusion of the history of biological groups, but this isn't fully accomplished. Few groups are included and most of them are animals. There is not even one entry for fungi, one of the major groups of eukaryotes, while crustaceans, for example, occupy 9 pages. Again, the second part feels a bit skewed. One more complaint: there is no specific index for the alphabetical guide, which makes it difficult to have an initial overview of its content.

The other journey

The book guides us on a reasonable journey through the 150 years that have passed since Darwin's publication. But there is another story implied in the title of the book: the one that started four billion years ago. The hypotheses for our beginnings are widely explained in a chapter about the origin of life, but after it, just a few major transitions are casually mentioned in the essays (with the exception of human origins, which are very well documented). The encyclopaedia-style section describes some of them in more detail, but we never have the feeling of following the history of life. Even a timeline, giving a clear picture of those four billion years, is missing. Contrary to what the title implies, I believe that the value of the book relies on placing the human history of the idea of evolution next to the concepts and approaches that have been developed along the way.

People familiar with the theory of evolution will have more than one complaint related to the absence of certain information. That can be expected: the aim of integrating all the knowledge that we now have about the topic is very ambitious. But as Edward O. Wilson recognizes in the foreword, the authors have indeed gone some way towards that goal.

ALEJANDRA MANJARREZ

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