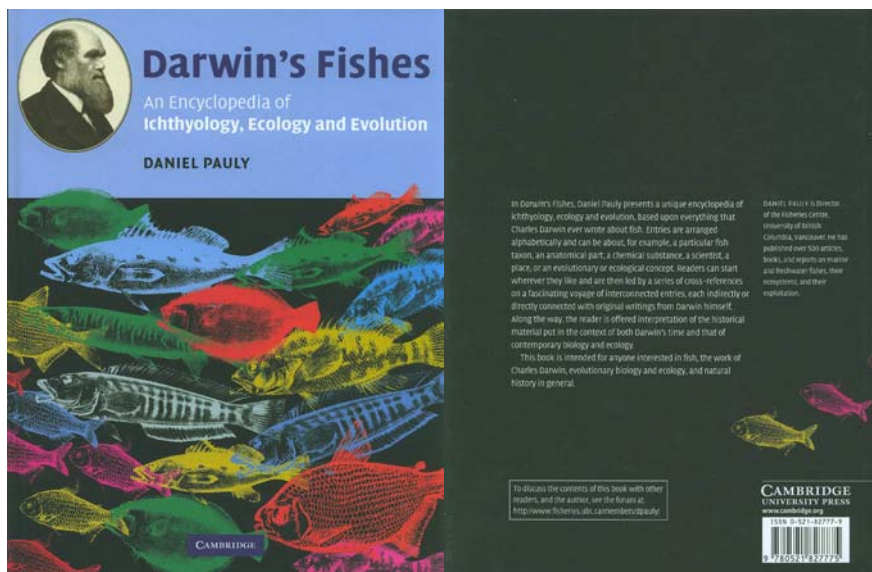


Pauly, D. 2004. Darwin's fishes. An encyclopedia of ichthyology, ecology and evolution. – Cambridge, Cambridge University Press

Book review by P.H. Lambers



Most people associate Charles Darwin with one major achievement only: the theory of evolution. Were Darwin to be associated with a particular group of animals most people would say 'finches'. That Darwin was a versatile biologist with a broad interest in many aspects of biology and geology is not widely known. In fact, he started as a geologist. Before his publication of 'On the origin of species' in 1859 Darwin already published several studies on the geology of South America, coral reefs and the systematics of fossil and recent barnacles. After 'The origin' he published several papers on plants, amongst which several on movement (tropism) in plants. His last work (1881) was an ecological paper on the effect of earth worms on the formation of humus. In none of these studies finches were the sole subject of study. Darwin and fishes is not a combination one would obviously think of. But, after reading Daniel Pauly's book, this might change, as Joseph Nelson puts it in the foreword of the book.

At the end of the 18th and first half of the 19th century fish taxonomy was dominated by the French, such as Lacepède, who published between 1798 and 1803 five volumes on the 'Histoire naturelle des poissons'. Darwin thought the British should have a place in fish taxonomy as well. Therefore, during his voyage on the Beagle, Darwin assembled a large collection of fishes that he shipped to England. His aim was to discover new fish species. The part of the catalogue of the plant- and animal species he collected he called 'Fish in spirit of wine'. He asked naturalist Leonard Jenyns to describe his fish collection. It was published as volume IV of the 'Zoology of the Beagle', the book in which the animals collected by Darwin on his voyage were described. Jenyns used the detailed notes, especially on the colours of the fishes, that Darwin kept on the material he collected. He described many new species of which many are still valid today.

In Darwin's own work fishes appear to be prominently present. He frequently used fishes to illustrate, explain and build up his theory of evolution. However, when Daniel Pauly, director of the Fisheries Centre of the University of British Columbia in Vancouver, wanted to use a Darwin quote on fishes to add to a book on the impact of El Niño on fishes in Peru, he could not find one. In contrast to finches, fishes appeared to be absent in books on Darwin. So he decided to write an essay on Darwin and fishes. He did not produce an essay but a fascinating book on fishes and Darwin instead. Pauly did a magnificent job going through all of Darwin's writings, searching for references to fishes. His book is in fact an encyclopedia, with short, alphabetically ordered items. Everything that Darwin wrote on fishes is discussed, all the species described by Jenyns, all fish species named after Darwin, facts about fish anatomy and physiology, scientists Darwin corresponded with, locations he visited and many more items. Darwin's views on biological topics are often discussed in the light of our recent viewpoints, with references to the most recent literature. Just starting somewhere in the book will lead the reader by a meticulous cross-reference system into the fascinating world of both 19th century and recent ichthyology and biology. For instance starting with amphibians, one can choose between scale, lungfish, Lyell, seasquirts, vertebrate origins, lancelets and ontogeny. Each of these items will lead you to a diversity of others. This makes the book not just an encyclopedia of biological facts. Reading the book is like going on a fascinating journey of discovery about Darwin and his contemporaries, history of biology, evolution, fish biology and up to

date biological knowledge. Every time you start reading, the journey will be different, there is always something new to discover.

There are three appendices. Appendix I, by Jacqueline McGlade, is a literal transcription of Darwin's 'Fish in spirit of wine'. Appendix II lists the fish Darwin collected during his voyage on the Beagle, which are present in the Natural History Museum in London; appendix III, by Adrian Friday, lists the Beagle specimens in the University Museum of Zoology in Cambridge. The comprehensive bibliography is not just a list of publications because off the publications on fishes that Darwin used for his own work, where and how he used them is indicated as well. Furthermore, comments by Darwin on these references are included, all original descriptions of Darwin's fishes are listed. In many cases Pauly provided short comments with references, so the reader knows what the publications are about. The entries in which the references are cited are mentioned and links to other entries are given. So, reading the bibliography can even be the starting point for a voyage of discovery!

Daniel Pauly succeeded in writing a fascinating, informative and very enjoyable book which is highly recommended to everyone interested in Darwin, fishes, evolution and biology in general.

Pauly, D. 2004. Darwin's fishes. An encyclopedia of ichthyology, ecology and evolution. – Cambridge, Cambridge University Press. 366 pp. ISBN 0 521 82777 9. Price £ 55.00/\$ 80.00 (hardback).