
 Book review

Ruse, M.: Darwinism Defended. A Guide to the Evolution Controversies. London, Amsterdam: Don Mills Ont.; Sydney, Tokyo: Addison-Wesley Publ. Cy. 1983. x+356 pp., several tabs. Soft bound £ 6.95.

This book represents one out of many published on the occasion of the centenary of Charles Darwin's death. Ruse is a philosopher of biology whose first study on Darwin and Darwinism was published about 15 years ago. His main contribution is the unraveling of the influence of the two most important philosophers of science in the first half of the 19th century, Herschel and Whewell, on Darwin. On this subject Ruse published a series of articles. This made him well suited for the task he set himself in "Darwinism defended": to give an outline of neo-Darwinism and to defend it against its critics.

The book consists of five parts. In the first part, Ruse sketches Darwin's route to the discovery of his theory and discusses the content and the structure of "The Origin of Species". The second part covers neo-Darwinism. Ruse treats Mendelian genetics, population genetics and the total picture of neo-Darwinism. Then he turns to rivalling theories such as Lamarckism and saltationism. In addition, Ruse deals with two philosophical attacks on Darwinism. First, is evolutionary theory a scientific theory or is it – as for example Popper claims – metaphysics? Second, is natural selection a tautology? According to Ruse, both objections are totally mistaken. In my opinion he is right and his argumentation should also convince the critics but, as Ruse states throughout the book, biases play a very important role. He admits that he himself "loves and cherishes" Darwinian evolutionary theory.

The next part is on areas of investigation where very exciting work has been done recently, and where we might expect more exciting developments in the near future. Ruse treats research on the origin of life – the weakest part of the book –, population ecology and animal sociobiology. Finally, he discusses the challenge to Darwinism coming from the paleontologists. Here, Ruse masterly defends phyletic gradualism from the punctuationalist point of view.

The fourth part of the book deals with the evolution of man together with a discussion of human sociobiology and evolutionary ethics. As might be expected, Ruse is critical of sociobiology but his final conclusion is positive. The ethical implications of evolutionary theory are likely the most contro-

versial part of Darwinism due to social-Darwinism and the Nazi-ideology. Ruse is a consequent Darwinist and, therefore, must conclude that "along with everything else, ethics was a product of evolution". This may sound as a truism, but it was not recognized by philosophers and biologists and – most remarkably – also not by ideologies who claim to be inspired by Darwinism.

In the last part of the book, Ruse discusses creationism. He does not do this because it has anything important to say, but because it has much political power, especially in the United States. As far as I can see, Ruse tries to show the creationists' arguments as fair as possible. His conclusion is that "scientific creationism is not just wrong: it is ludicrously implausible. It is a grotesque parody of human thought ... it is an insult to God."

Because such a broad field is covered in this book, there are of course several weak points and omissions. To name only three of them, in discussing the testability of the theory of evolution, Ruse does not mention that in the "Origin". Darwin himself suggested a test which could annihilate his theory of natural selection (1st edition, p. 201, Darwin claims here that altruism between species is impossible according to his theory of natural selection). Second, Ruse left out almost all the recent developments in molecular biology. Third, in case of the punctuationalists, he might have examined the structure of their argumentation more profoundly and confront it with Darwin's.

In general, however, this book is excellent: It is learned, profound, and very well written. I especially liked that Ruse's defense of Darwinism was based on the Whewellian philosophy of science. According to the 19th century philosopher Whewell, the most convincing evidence for a theory is that it is confirmed by data obtained from very different areas. Darwinism is confirmed by areas so broadly different as paleontology, geographical distribution of organisms and molecular biology. This 'consilience of inductions' is the reason why, for Ruse, Darwinism is so convincing. The Whewellian philosophy of science is, besides Ruse, recently also adopted by other philosophers of science, such as Laudan. I have gone through many recent books on Darwin and Darwinism. This book is surely one of the best.

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