

LITERATURE REVIEWS

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DEBUNKING DARWIN

DARWINISM: THE REFUTATION OF A MYTH. 1987. Søren Løvtrup. London, NY and Sydney: Croom Helm. 469 p.

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Søren Løvtrup is a Swedish embryologist who does not believe that evolution is driven by natural selection. In his view, morphological changes in evolution are the result of changes in genes controlling development, and natural selection is such a weak force as to have only trivial results. This book is an attempt to justify this position, and to show that Charles Darwin's views were either incorrect or were based on the ideas of others.

Løvtrup discusses in some detail the history of the development of evolutionary thought and attempts to evaluate the relative importance of various individuals to the development of the theory of evolution in general, and to Darwin's theory of natural selection in particular. In the process, Darwin is treated with much less reverence than has often been the case in histories of evolution. This unusual perspective makes the book well worth reading. However, Løvtrup's undisguised admiration for Lamarck seems somewhat overdone.

The other main theme pursued by Løvtrup is that evolution has been driven by developmental processes rather than ecological processes. He repeatedly states that macromutations and not micromutations are responsible for evolution. Løvtrup does make a good case for the insufficiency of micromutations and the need for macromutations if evolution is true. However, he does not present convincing evidence that evolution is true or that macromutations have actually been involved in any specific example of evolution. His development utilizes assumptions and speculations rather than real examples.

A summary of the points in each of the sixteen chapters follows. In Chapter 1 Løvtrup outlines four "theories" concerning evolution.

Lamarck is credited with two — the reality of evolution (species change over time) and the history of evolution (species descend from other species). The theory on the origin of new morphologies has two competing alternatives: the micromutation theory and the macromutation theory. Most population geneticists affirm the micromutation theory, while many embryologists embrace the macromutation theory. The fourth theory is the ecological theory (natural selection) that Darwin made popular.

The second chapter is a discussion of early evolutionary scientists, including George Buffon, Erasmus Darwin, and others. Løvtrup is especially critical of Charles Darwin for failing to acknowledge his grandfather's influence, and suggests that the younger Darwin was not honest in denying the contribution of his grandfather.

Lamarck is the subject of Chapter 3. Løvtrup credits Lamarck with two basic concepts of evolution — that species change over time, and that present species descended from species now extinct. Lamarck distinguished between two directions that evolution can take — progressive or diversifying. Løvtrup suggests Darwin was more influenced by Lamarck than he was willing to admit, and that he borrowed from Lamarck the concept of descent with modification.

In Chapter 4 the author describes the views of various evolutionists of the first half of the nineteenth century who did not invoke natural selection, particularly Etienne Geoffroy Saint-Hilaire, Karl Ernst Von Baer, Richard Owen, and Robert Chambers. Each of these men is credited by Løvtrup with favoring an epigenetic mechanism rather than natural selection as the driving force behind evolutionary change.

The writings of Charles Darwin are discussed in Chapter 5. In this chapter, Løvtrup shows that Darwin often contradicted himself, took unjustified positions, and maintained his belief in the power of natural selection despite the weight of evidence to the contrary. The critical way in which Darwin's contributions are evaluated adds significantly to the interest of the book.

Chapter 6 is a very brief comparison of Darwin and Lamarck, in which one aspect of the darwinian myth is stated to be the “disproportion between their contributions and their reputations.” Three of Darwin's friends are discussed in the next chapter: Charles Lyell, Joseph Dalton Hooker and Thomas Henry Huxley. Each of these men, close friends of Darwin, nevertheless had serious reservations about some of Darwin's views. According to Løvtrup, all three men had reservations about natural

selection being an adequate mechanism of evolution, although they defended the concept of the evolution of species.

In Chapter 8 the views of three of Darwin's supporters are discussed: Alfred Russel Wallace, Asa Gray and Ernst Haeckel. Wallace held that the origin of life and of man required activity from "an unseen universe — a world of spirit" —, presumably God. Asa Gray had a similar belief in an intelligence behind nature. Haeckel was more convinced by Darwin, but felt the credit for evolutionary theory belonged to Lamarck. These three men supported Darwin, but with reservations often overlooked by Darwinists today. Løvtrup does not approve of the treatment of Wallace's paper by Darwin and his friends in publishing it without Wallace's consent, but does recognize that an attempt was made to be fair to Wallace.

Darwin's critics are the subject of Chapter 9, with Fleeming Jenkin, St. George Jackson Mivart and Samuel Butler discussed specifically. The point Løvtrup wishes to establish in this chapter is that most of Darwin's opponents presented their arguments on scientific, rather than religious grounds. Jenkin argued that variability is not infinite, but reaches an impassable limit, an argument which "has never been refuted." Mivart argued that natural selection cannot produce new varieties, but that evolutionary changes come about in relatively large steps, and that natural selection cannot explain the origin of species. Darwin and his friends responded to Mivart with vitriolic attacks and personal ostracism, which Løvtrup counts as a black mark on their characters. The third critic, Samuel Butler, accepted the concept of evolution, but rejected Darwin's reasoning on the subject, and pointed out many inconsistencies in the various editions of the *Origin*. For this he too was scorned by the Darwin crowd.

After about 1870, Darwin's formulation of natural selection was given lesser status, since it did not account for the origin of the fittest. Chapter 10 is a discussion of various competing theories during the next half century: Neo-Lamarckism, Macromutationism, and Neo-Darwinism. Neo-Lamarckism was not widely accepted, and Løvtrup concentrates his efforts on the other two theories. William Bateson, Hugo de Vries and Wilhelm Johannsen are described as macromutationists, while August Weismann, Walter F. F. Weldon and Karl Pearson are Neo-Darwinians. Neither group was particularly successful in presenting evidence supporting their views, and the discovery of Mendel's works eventually turned the discussion in a new direction.

In Chapter 11 the founders of the modern synthesis are discussed. Usually referred to as Neo-Darwinians, Løvtrup prefers the term “Neo-Mendelians”. The three founders of the synthetic theory were R. A. Fisher, J. B. S. Haldane and Sewall Wright. Fisher is criticized for drawing biologically unrealistic conclusions from mathematical models. Haldane had better training in biology, and avoided many of Fisher’s mistakes, but introduced the false idea of “genetic load”. Løvtrup credits Sewall Wright to be the outstanding figure of the three mentioned here, chiefly because his understanding of biology was the greatest. In addition, he seemed to endorse, at least in principle, the theory of developmental macromutations as an important causative agent in evolution.

The founding fathers of population genetics presented their views in mathematical terms, and it was left to others to expand the theoretical base and apply it to the various branches of biological study. Chapter 12 outlines the contributions of Theodosius Dobzhansky, Julian Huxley, Ernst Mayr and George Gaylord Simpson. Dobzhansky is faulted for not recognizing the difference between mechanisms of microevolution and macroevolution. Huxley distinguished progressive evolution from diversifying evolution, but mistakenly credited natural selection with the ability to accomplish both. Mayr’s emphasis on reproductive isolation is discussed, but Løvtrup states Mayr did not present any evidence that species arise through accumulation of micromutations. Simpson recognized the problem of gaps in the fossil record, but like Darwin, explained it away with ad hoc hypotheses. Løvtrup’s view is that “Neo-Mendelism” is a correct theory of population genetics, but he presents evidence which he believes falsifies Neo-Mendelism as a theory of evolution. This includes evidence from practical plant and animal breeders, in which macromutations and inbreeding are the method used to produce a new breed. Løvtrup contrasts two theories used to explain the results of population genetical experiments: the “classical theory” and the “balance theory.” The neutral theory has turned the situation upside down, challenging the power of natural selection and the availability of essentially unlimited variability.

Løvtrup concludes that molecular evolution may not be connected with phylogenetic evolution. In discussing (p 344) the controversy between the neutralists and the selectionists (balance model), he quotes J. L. King’s statement that the different viewpoints are ““not a matter of what we observe, but of what we believe, which is, of course, what we want to believe.”” Speaking of Darwin’s theory of natural selection,

Løvtrup asks, “Hence, to all intents and purposes the theory has been falsified, so why has it not been abandoned?” (p 352). The answer given is that its adherents refuse to accept falsifying evidence. The evidence presented in this book, and the general situation in evolutionary writings, make one wonder whether these statements could as well be applied to the belief in evolution in general.

Chapter 13 discusses Løvtrup’s view that evolutionary change requires two theories of evolutionary mechanisms, the epigenetic theory and the ecological theory. Løvtrup emphasizes the epigenetic (macro-mutation) theory as the source of variations that are evolutionarily meaningful. He lists some objections to his theory, then argues against each of them, concluding with the following startling statement: “It thus appears that all the objections against the macromutation theory may easily be met, and this is in itself perhaps the most compelling evidence in its favour” (p 369).

This is an amazing conclusion, particularly when one remembers that the author protests against adopting similar arguments in support of Darwinism (see introductory quotation to Chapter 9, p 236; quotations from Jenkin on p 240). One would like to have actual evidence that a theory is true, not merely assertions that it could be true. Løvtrup has established that accumulations of micromutations cannot account for evolution. However, the only evidence that macromutations have produced evolutionary change is the assumption that evolution has occurred. Without this assumption, there is no need for macromutations. The chapter concludes with the statement (p 387): “What is at stake is a shift of paradigm, which will make much of the discussion on evolution during the last half century completely obsolete.” Can it be any surprise that the argument is so intense?

In Chapter 14 Løvtrup briefly discusses Social Darwinism, blaming Spencer for some of the excesses of that field, and exonerating Darwin of the responsibility for them. In Chapter 15 Løvtrup describes what he means by the term “myth” with respect to Darwinism. The myth seems to contain three elements: the general beliefs that 1) Darwin originated the theory of evolution; 2) Darwin’s book (*The Origin*) converted the world to evolution; and 3) Darwin’s arguments about natural selection were soundly based and were quickly adopted by the scientific community. Løvtrup’s rebuttal is that 1) Lamarck was the first to state a general theory of evolution, even if he did not get the mechanism right either; 2) Darwin undoubtedly did contribute to the general acceptance of the evolutionary

world view, but this does not give him priority; 3) The scientific community actually rejected Darwin's theory of natural selection, but defended his view that species do change.

The final chapter discusses some of the effects of Darwinism on progress in biology, concluding that the science of biology has been hindered in its progress by the uncritical acceptance of a myth. Specifically, acceptance of the micromutation theory has put evolutionary biology into a sterile cul-de-sac, and real progress awaits acceptance of macromutations as the important force behind evolutionary change.

The book presents a welcome change from the overdone adulation of Darwin and the uncritical confidence in the creative powers of natural selection sometimes seen in evolutionary writings. The emphasis on macromutations and inbreeding seem justified if one insists that evolution in a general, progressive sense has actually occurred, but the evidence can easily be interpreted as indicating it has not occurred. Natural selection on randomly produced variation is clearly an unsatisfactory mechanism for such changes; but despite his attempts, Løvtrup fails to show the plausibility of macromutations. The outrageous price of this book has the unfortunate effect of limiting its distribution, but it should be read by anyone interested in the history of evolutionary thought.