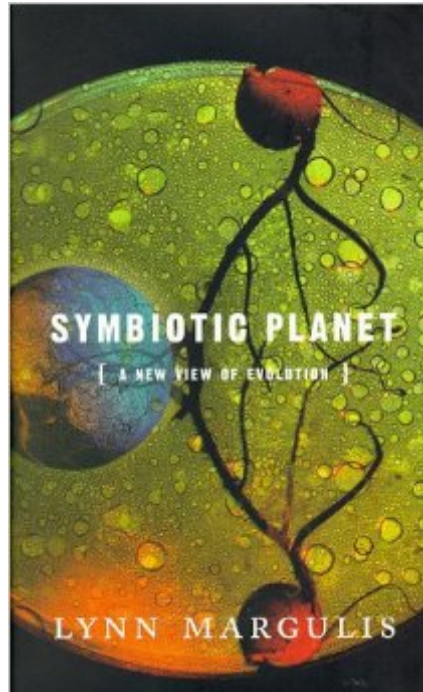


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Symbiotic Planet: A New Look At Evolution (Science Masters Series)



Synopsis

Although Charles Darwin's theory of evolution laid the foundations of modern biology, it did not tell the whole story. Most remarkably, *The Origin of Species* said very little about, of all things, the origins of species. Darwin and his modern successors have shown very convincingly how inherited variations are naturally selected, but they leave unanswered how variant organisms come to be in the first place. In *Symbiotic Planet*, renowned scientist Lynn Margulis shows that symbiosis, which simply means members of different species living in physical contact with each other, is crucial to the origins of evolutionary novelty. Ranging from bacteria, the smallest kinds of life, to the largest; the living Earth itself; Margulis explains the symbiotic origins of many of evolution's most important innovations. The very cells we're made of started as symbiotic unions of different kinds of bacteria. Sex; and its inevitable corollary, death; arose when failed attempts at cannibalism resulted in seasonally repeated mergers of some of our tiniest ancestors. Dry land became forested only after symbioses of algae and fungi evolved into plants. Since all living things are bathed by the same waters and atmosphere, all the inhabitants of Earth belong to a symbiotic union. Gaia, the finely tuned largest ecosystem of the Earth's surface, is just symbiosis as seen from space. Along the way, Margulis describes her initiation into the world of science and the early steps in the present revolution in evolutionary biology; the importance of species classification for how we think about the living world; and the way 'academic apartheid' can block scientific advancement. Written with enthusiasm and authority, this is a book that could change the way you view our living Earth.

Book Information

Series: Science Masters Series

Hardcover: 160 pages

Publisher: Basic Books; 1st edition (October 8, 1998)

Language: English

ISBN-10: 0465072712

ISBN-13: 978-0465072712

Product Dimensions: 0.8 x 6.2 x 9.8 inches

Shipping Weight: 13.6 ounces

Average Customer Review: 4.2 out of 5 stars See all reviews (33 customer reviews)

Best Sellers Rank: #1,055,670 in Books (See Top 100 in Books) #269 in Books > Science & Math > Evolution > Organic #576 in Books > Textbooks > Science & Mathematics > Biology &

Customer Reviews

Some years ago, Margulis promoted a new concept in evolution. Complex life developed from the merging of microbial forms of life. Elements of the cell such as mitochondria, chloroplasts and other organelles came from small, simple lifeforms invading larger cells. The idea was a long time in gaining acceptance, but is now part of conventional evolutionary texts. In this book, she expands her earlier work with some accounts of her life as a scientist and wife of Carl Sagan. She also goes beyond her earlier work to advance a new thesis on the accelerator of evolution - sex. While many of her ideas are presented in more detail elsewhere, this book is a good, quick introduction to fuller accounts of her thinking. Margulis is an innovator - forceful in imparting her ideas. She portrays herself as a rebel from early in her career, arguing here that she was sceptical of "genes in the nucleus determin[ing] all the characteristics of plants and animals." Her misgivings received scant support, however, without a replacement thesis. She found one in symbiosis - the association of multiple organisms. It took many years of investigation, including initial rejection of her attempts to publish, before the idea of SET [Serial Endosymbiosis Theory] found acceptance. So much attention had been focussed the DNA in the cell nucleus that organelle structure and function had been essentially overlooked as irrelevant. That these organelles might have been independent organisms at some point was too novel. Her account of the struggle to gain recognition is related as one of dogged persistence, nearly devoid of outside support. Moving through an interesting discussion of life's origins, she dismisses the notion that forms of nucleic acids arose before simple cells.

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