Volvox: A Search for the Molecular and Genetic Origins of Multicellularity and Cellular Differentiation (Developmental and Cell Biology Series)

David L. Kirk
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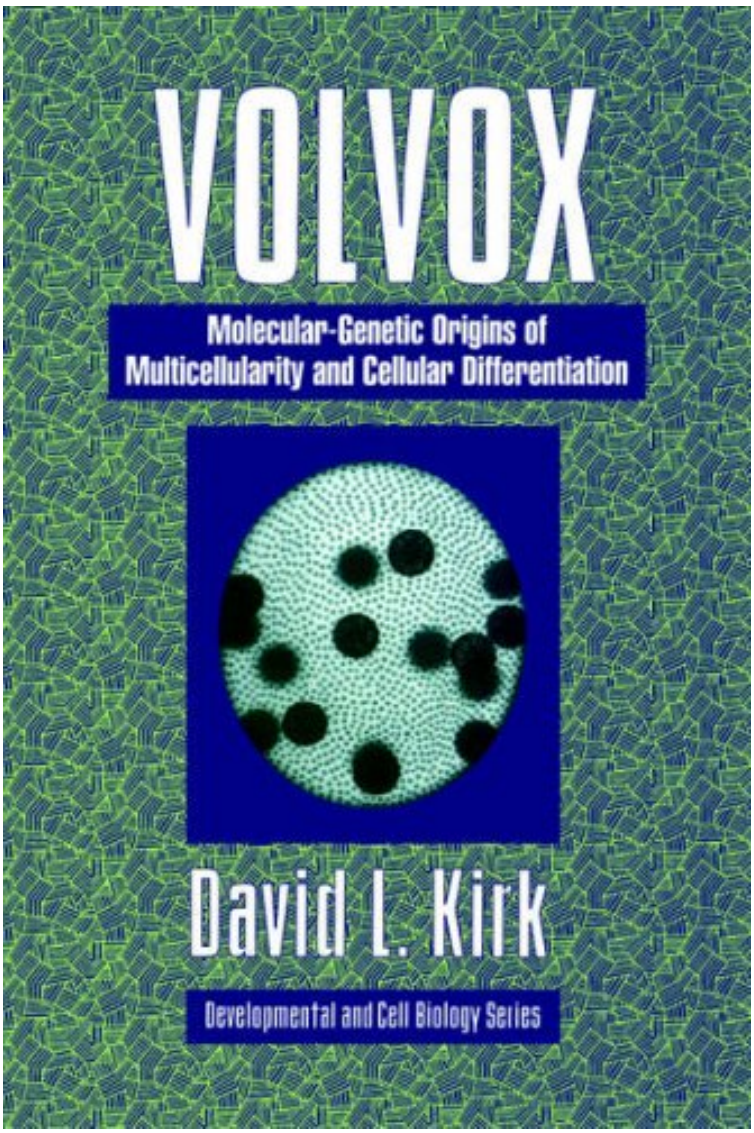

#4893606 in Books David L Kirk Jonathan B L Bard Peter W Barlow 2005-09-08Original language:EnglishPDF # 1 8.98 x .91 x 5.98l, 1.29 #File Name: 0521019141400 pagesVolvox A Search for the Molecular and Genetic Origins of Multicellularity and Cellular Differentiation | File size: 28.Mb

David L. Kirk : Volvox: A Search for the Molecular and Genetic Origins of Multicellularity and Cellular Differentiation (Developmental and Cell Biology Series) before purchasing it in order to gage whether or not it

would be worth my time, and all praised Volvox: A Search for the Molecular and Genetic Origins of Multicellularity and Cellular Differentiation (Developmental and Cell Biology Series):

0 of 0 people found the following review helpful. Great resource book for Volvocales researchBy cristian solariAlthough it needs to be updated, this is an obligatory reference for those using the Volvocales as a model system.

The central thesis of this book is that Volvox and its unicellular and colonial relatives provide a wholly unrivaled opportunity to explore the proximate and ultimate causes underlying the evolution from unicellular ancestors of multicellular organisms with fully differentiated cell types. A major portion of the book is devoted to reviewing what is known about the genetic, cellular and molecular basis of development in the most extensively studied species of Volvox: V. cateri, which exhibits a complete division of labor between mortal somatic cells and immortal germ cells. However, this topic has been put in context by first considering the ecological conditions and cytological preconditions that appear to have fostered the evolution of organisms of progressively increasing size and with progressively increasing tendency to produce terminally differentiated somatic cells. The book concludes by raising the question of whether the germ-soma dichotomy may have evolved by similar or different genetic pathways in different species of Volvox.

"Kirk also describes comparative analyses suggesting explanations for the function of multicellularity that can be tested experimentally. This breadth of treatment raises Kirk's book from a technical monograph, read only by specialists, to a synthesis that can be appreicated and enjoyed by any biologist. It seems the most remarkable work of its kind since John Tyler Bonner's The Cellular Slime Molds (1959), and it deserves to achieve the same celebrity." Graham Bell, Science"This book had everything going for it. The great thing about this book is that it covers, in a single volume, the history of RVolvox studies, its evolution, ecology, development...and genetics both classical and molecular. This broad picture is presented in clear, straightforward prose by David Kirk, who...has done so much to solve many of the riddles." J. T. Bonner, The Quarterly of Biology"...Kirk has interwoven as background a clear and succinct review of modern knowledge concerning the origin of life on earth, the internal architecture of cells and flagella, aspects of the sexual cycle, and the manifold uses, sometimes surprising, of analyses of mutant genes. All this comes with extensive and diverse references, a good index, photographs, and diagrams, and almost no typographic errors--a very careful job. This book is required reading for any researcher, any teacher of biology, or a biologist on busman's holiday." Phycologia