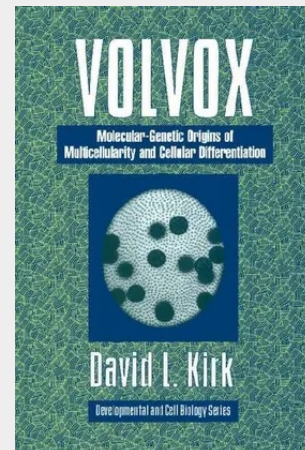


Volvox

A Search for the Molecular and Genetic Origins of Multicellularity and Cellular Differentiation

The central thesis of this book is that Volvox and its unicellular and colonial relatives provide a wholly unrivalled 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. catenella*, which exhibits a complete division of labour 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. Biologists and phylogeneticists interested in development, genetics and cellular evolution will find this a fascinating work.

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