The Social Amoebae: The Biology of Cellular Slime Molds

John Tyler Bonner
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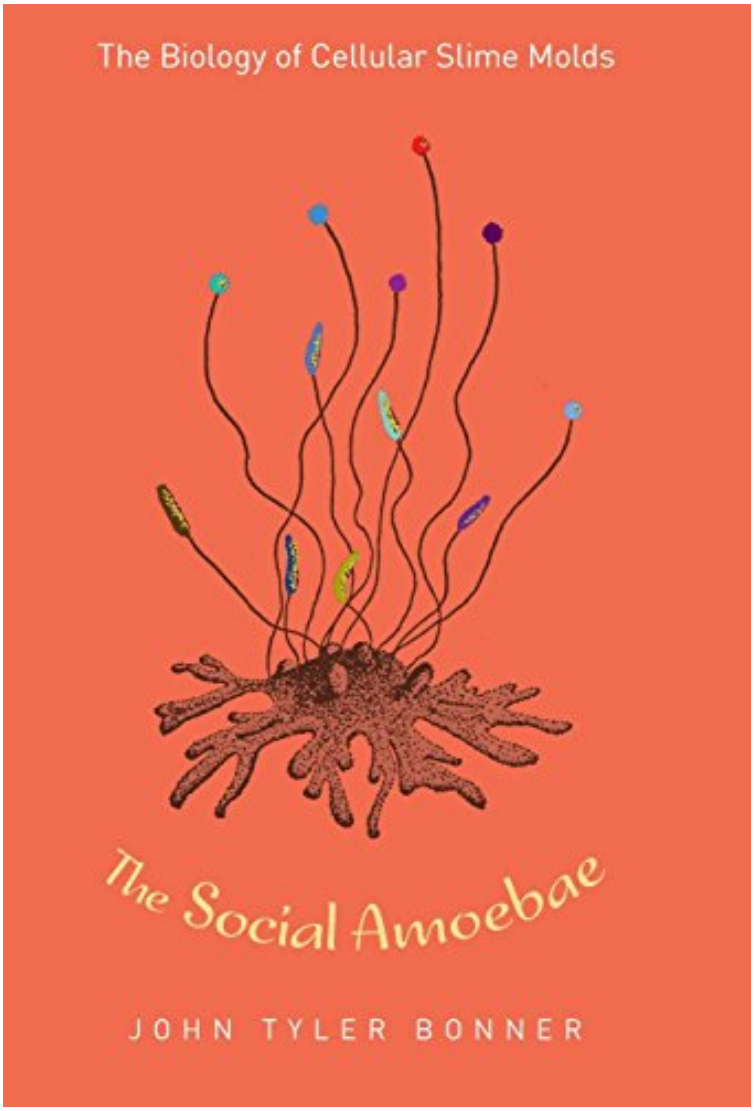

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John Tyler Bonner : The Social Amoebae: The Biology of Cellular Slime Molds before purchasing it in order to gage whether or not it would be worth my time, and all praised The Social Amoebae: The Biology of Cellular Slime Molds:

7 of 7 people found the following review helpful. The Wonders of Cellular Slime MoldsBy David B RichmanWhen I was a graduate student at the University of Florida one of my associates was working on cellular slime molds. I was somewhat aware of these amazing creatures because of a class in cell biology, but had never seen them. The student showed me a aggregation under the microscope and I was truly amazed, despite my previous knowledge of their

existence. These "lowly" organisms are quite fascinating in ways not easily described in books.John Tyler Bonner has spent his life studying these organisms and his "The Social Amoebae: The Biology of Cellular Slime Molds" is a great summary of his and others work on these strange life forms, that seem on the edge of multicellularity. As it turns out what was thought to be a simple organism is quite complex. The individual amoebae are influenced by a substance (acrasin) now known to be cyclic AMP (or in some cases folic acid) to form a cooperatively moving slug that crawls to a appropriate location and sporulates using a chitin-based stalk. How this occurs and where cellular slime molds fit in the classification system have been the subject of more than 1000 publications and we still don't know all the answers. For one thing, we can't study their genetics because we can't get the sexually-produced spores to grow in the laboratory! Yet these spores are produced and must actually develop in the wild. The evolution and behavior of the social amoebae are fascinating and basic biological problems and Bonner captures the excitement of this research in this short (144 pages) book.The charm of this book lies in Bonner's enthusiasm for his subject, his ability to convey this enthusiasm, and his ability to explain the difficult concepts involved in the study of cellular slime molds. This is a great book to present to a budding scientist or anybody interested in the wonders of microbiology. I recommend it highly.1 of 1 people found the following review helpful. Gelatinous wondersBy Dr. LH SalwiczekSlime molds were always fascinating for me, mainly because some sacrifices themselves for the good of others; a classic example of "altruism". How does this work? How is it determined who will be part of the stem and die without offspring, and who will be in the fruiting body and reproduce? Is it nothing but kin selection?The book does not provide a full answer - there is no simple one available. To me the book seems like a nice appetizer, a very brief summary of varies aspects studied in slime molds. It is a great read for the non-expert, since the author does not get lost in too many details. But it is not superficial either as that a scientist from a different discipline would not learn anything.As the author mention in the beginning, it is a subjective selection of topics and papers chosen, not a comprehensive or even complete review of literature and theories available. As such for me the book seems too short and thus not satisfactory. I hope the author would - will? - make the effort to write a more extensive version.4 of 5 people found the following review helpful. Slim MoldsBy J. Scott ShipmanDr. Bonner's enthusiasm for his "beloved" slime molds is apparent on every page. The Social Amoebae is a compact 125+ pages, and is written in an approachable and entertaining style. Dr. Bonner provides a nice background, the life cycle, evolution, and ecology of slim molds. He provides updates on the state-of-study in this area, and does so with approachable/understandable prose.One sentence jumped of the page in Chapter 5 "Behavior": "If a result is greeted with disbelief, or even scorn by the outside world, there is a good chance that it is not only true, but important."This little book was a pleasure to read and highly recommended.

Noted biologist and author John Tyler Bonner has experimented with cellular slime molds for more than sixty years, and he has done more than anyone else to raise these peculiar collections of amoebae from a minor biological curiosity to a major model organism--one that is widely studied for clues to the development and evolution of all living things. Now, five decades after he published his first pioneering book on cellular slime molds, Bonner steps back from the proliferating and increasingly specialized knowledge about the organism to provide a broad, nontechnical picture of its whole biology, including its evolution, sociobiology, ecology, behavior, and development. The Social Amoebae draws the big lessons from decades of research, and shows how slime molds fit into and illuminate biology as a whole. Slime molds are very different from other organisms; they feed as individual amoebae before coming together to form a multicellular organism that has a remarkable ability to move and orient itself in its environment. Furthermore, these social amoebae display a sophisticated division of labor; within each organism, some cells form the stalk and others become the spores that will seed the next generation. In The Social Amoebae, Bonner examines all these parts together, giving a balanced, concise, and clear overview of slime mold biology, from molecules to cells to multicells, as he advances some unconventional and unexpected insights.

"Bonner does not get lost in abstract realms or in reams of facts. His book is very interesting and even exciting at times. He always stays grounded by returning readers to nature, to the forest soil where the slime molds are carrying out their various life-cycle activities. I was reluctant to put the book down once I started and was sad at the end because I wanted to read more."--James C. Cavender, Quarterly of Biology"The Social Amoebae is an enlightening and enjoyable read for the layperson and professional who would like to share in the biological insight and knowledge gained by John Tyler Bonner as a result of his lifelong relationship with cellular slime molds."--Randy Wayne, BioscienceFrom the Back Cover"Few scientists or authors can claim that the analyses and insights in their latest book are based on sixty years of original research, exploration, and childlike enthusiasm. We should be enormously grateful that John Tyler Bonner could make that claim about the career he has spent with cellular slime molds. His book is beautifully written, enlightening, fascinating, historical yet up-to-date, whimsical when appropriate, and informative throughout in its analysis of two of evolution's major themes--multicellular organization and sociality."--Brian Hall, coauthor of Strickberger's Evolution"The Social Amoebae provides a rounded and complete picture of cellular slime mold biology for the interested lay person, but even researchers in the field will learn a lot. John Tyler Bonner ties the ecological context to developmental questions and connects modern molecular data to ingenious experiments

performed more than forty years ago. Written in an easy, flowing, elegant style, the book is spiced up with delightful anecdotes, and I very much enjoyed reading it."--Pauline Schaap, University of Dundee"A conversation with all those students working in labs on individual features of slime mold biology, The Social Amoebae might well induce readers to think more broadly about the organism."--Leo W. Buss, Yale UniversityAbout the AuthorJohn Tyler Bonner is professor emeritus of ecology and evolutionary biology at Princeton University. He is the author of eighteen previous books, including, most recently, Why Size Matters: From Bacteria to Blue Whales (Princeton).