Kin: How We Came to Know Our Microbe Relatives

John L. Ingraham
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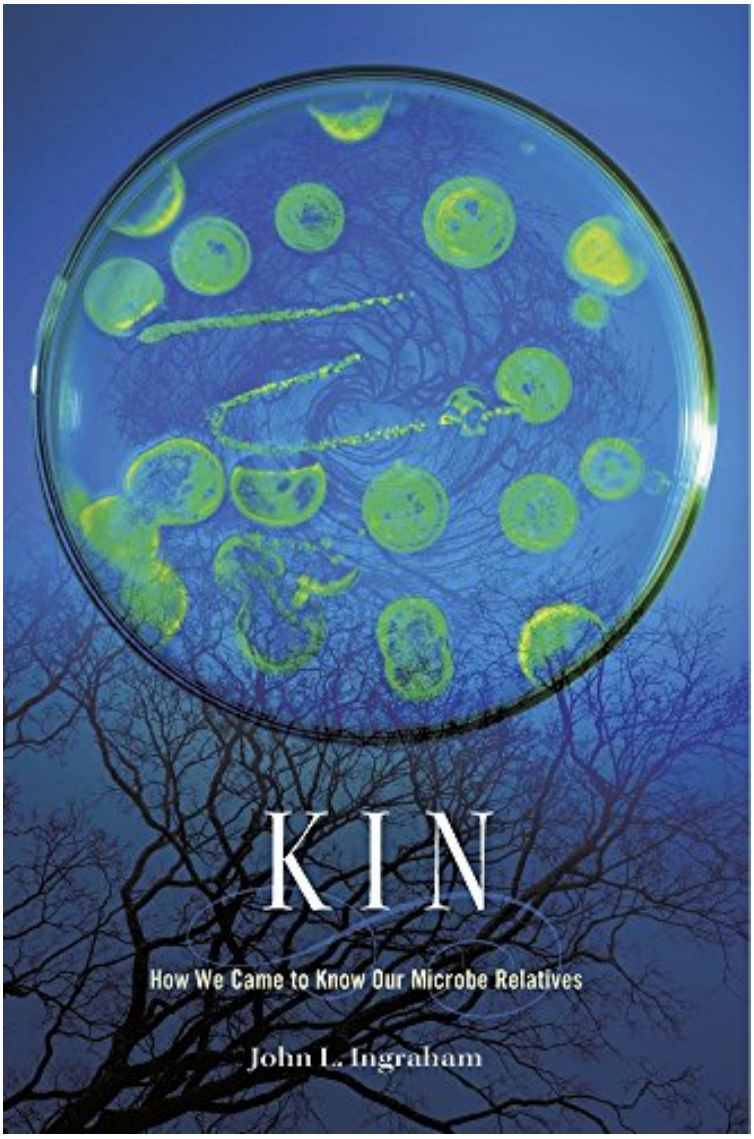

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John L. Ingraham : Kin: How We Came to Know Our Microbe Relatives before purchasing it in order to gage whether or not it would be worth my time, and all praised Kin: How We Came to Know Our Microbe Relatives:

1 of 1 people found the following review helpful. The ultimate family treeBy Paul BaumannA central quest in biology has been the categorization of organisms and the elucidation of their relationships. Speculative arrangements have been proposed since antiquity but it is only recently that conceptual and methodological breakthroughs have allowed the grouping of organisms based on their evolutionary relationships. This exciting development is the result of contributions of many scientist and has recently been accelerated by the application of modern methods of molecular

biology. For the first time, it is now possible to construct an evolutionary tree showing the relationship of all organisms.John L. Ingraham is an eminent microbiologist who has authored many scientific papers, published textbooks and science books for the general reader and is, consequently, highly qualified to write the history of this quest. He has not been involved in this area of research and thereby brings an informed outsider perspective that allows him to make dispassionate judgements.The book is written in an informal, chatty style, in part autobiographical, which allows the reader to be a participant in the excitement of discovery. It contains all the necessary background information explained in a lucid and readily graspable form. It is recommended for the general biology reader as well as the specialist. The topic is relevant to almost every field of biological sciences and includes new and important applications to ecology, health and biotechnology. In addition, it is of great interest to the historian of science since it shows the development of an idea and its fruition and refinement up to the present time.0 of 0 people found the following review helpful. If you want to know more about your body and the microbial world that travels with us allBy Larry M.Professor Ingrahams latest book holds fascination for me as a biologist and more importantly why science matters in todays world. This highly readable story of modern biology benefits from Dr. Ingrahams personal involvement in microbiology and his anecdotes help connect the lay person to the science of ourselves. I reccomend this book to students and adults as encouragement to engage in greater scientific exploration and education.The chapter that introduces current ideas of the microbiome should preface everyone of the myriad of diet books on the market today.

Since Darwin, people have speculated about the evolutionary relationships among dissimilar species, including our connections to the diverse life forms known as microbes. In the 1970s biologists discovered a way to establish these kinships. This new era of exploration began with Linus Paulings finding that every protein in every cell contains a huge reservoir of evolutionary history. His discovery opened a research path that has changed the way biologists and others think about the living world. In Kin John L. Ingraham tells the story of these remarkable breakthroughs. His original, accessible history explains how we came to understand our microbe inheritance and the relatedness of all organisms on Earth.Among the most revolutionary scientific achievements was Carl Woeses discovery that a large group of organisms previously lumped together with bacteria were in fact a totally distinct form of life, now called the archaea. But the crowning accomplishment has been to construct the Tree of Lifean evolutionary project Darwin dreamed about over a century ago. Today, we know that the Trees three main stems are dominated by microbes. The nonmicrobesplants and animals, including humansconstitute only a small upper branch in one stem.Knowing the Trees structure has given biologists the ability to characterize the complex array of microbial populations that live in us and on us, and investigate how they contribute to health and disease. This knowledge also moves us closer to answering the tantalizing question of how the Tree of Life began, over 3.5 billion years ago.

In a delightfully personal yet accurate style, Ingraham describes the events and personalities that brought us the Tree of Life, the representation that encapsulates the relatedness of all organisms of Earth. Readers will be educated while they are entertained as they explore fascinating aspects of life discovered through the study of our microbial relatives. (Roberto Kolter, Harvard University)One of the grandest achievements of modern biology has been the unraveling of the relationships among the many kinds of life and the determination of the course of evolution, a great tree of all life. In Kin, prominent microbiologist John Ingraham traces the scientific developments that led to this achievement and some of its ramifications. Along the way, with many personal anecdotes about scientists involved, Ingraham unfolds the history of microbiology and molecular biology, the development of genetic technology, and ideas on the origin of life. Kin is a highly readable account of a remarkable period of scientific progress in biology. (Norman Pace, University of Colorado)Charles Darwin knew microbes as infusoria, and left them off his partial tree of life little dreaming of how they dominate it, or of their intimate relationship with humanity. That kinship, reveals microbiologist John Ingraham in this succinct scientific chronicle, began to emerge in the 1960s and 1970s with revolutionary findings such as Carl Woeses discovery of archaea. Ingraham deftly traces the rise of relevant fields, and highlights landmark research on the gut microbiome, the putative origins of life in oceanic hydrothermal vents and more. (Barbara Kiser Nature 2017-05-04)Darwin included a single figure in On the Origin of Species: a sketchy Tree of Life, showing how the teeming variety of creatures derive from a single common ancestor. Today, explains John Ingraham, we have fleshed out the picture and can demonstrate in detail how we are all kinfrom the smallest bacterium to the largest blue whale. He describes the process of discovery that revealed the sole three branches on the tree: the recently discovered archaea, the bacteria and the eukaryotes, which include everything from protozoa, algae and fungi up to humans. Our new knowledge of the trees structure can help us to understand how bacteria on, in and around us cause disease; it may also offer clues about the origins of life. (Matthew Reisz Times Higher Education 2017-06-01)In simple and straightforward prose, Ingraham restores the true importance of one of the most revolutionary yet understated discoveries of the last century: that we all descend from, and are intricately linked with, microbial creatures. Ingrahams narrative is a profound story about our true origins, remarkable in scope and multi-dimensional in ambition. This all-encompassing tale extends from the beginning of life on earth to the present day, and occasionally

casts a glance at the future. Readers who expect to learn about our unicellular friends (and enemies) will also find an account of the beginning of life, the discovery of DNA, the quest to cure disease, a brief digression into gene editing, and a forecast of impending ecological disastersModest and revealing, Kin focuses our eyes on the invisible and unfamiliarand thereby puts our own existence into perspective. The book offers a pluralistic account of our varied encounters with the manifold microbes around us. But as divergent as it may seem, this story is equally unifying. Stringing together insights from many disciplines, distant places, and different times, Ingraham delivers a living history that is unique and whole, and invites us to become a part of it. (Margret Veltman Cooper Square 2017-06-01)About the AuthorJohn L. Ingraham is Professor of Microbiology, Emeritus, at the University of California, Davis.