



# Bacterial Biogeochemistry: The Ecophysiology of Mineral Cycling

By Tom Fenchel, Henry Blackburn, Gary M. King

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*Bacterial Biogeochemistry, Third Edition* focuses on bacterial metabolism and its relevance to the environment, including the decomposition of soil, food chains, nitrogen fixation, assimilation and reduction of carbon nitrogen and sulfur, and microbial symbiosis. The scope of the new edition has broadened to provide a historical perspective, and covers in greater depth topics such as bioenergetic processes, characteristics of microbial communities, spatial heterogeneity, transport mechanisms, microbial biofilms, extreme environments and evolution of biogeochemical cycles.

- Provides up-to-date coverage with an enlarged scope, a new historical perspective, and coverage in greater depth of topics of special interest
- Covers interactions between microbial processes, atmospheric composition and the earth's greenhouse properties
- Completely rewritten to incorporate all the advances and discoveries of the last 20 years such as applications in the exploration for ore deposits and oil and in remediation of environmental pollution

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## **Editorial Review**

### **Review**

"The authors of this book have succeeded with such a synthesis by creating a current, accurate and lucid review of bacterial biogeochemistry. The 10 chapters of this book describe, in logical order, the myriad of biogeochemical reactions in soils, aqueous systems and the atmosphere that are mediated by prokaryotic organisms. Throughout each chapter the fundamentals of microbial processes are presented in a way that allows for easy extrapolation to applied problems, including environmental concerns. This book would serve as a valuable resource for all those, students to professionals, who require an accurate, current, yet broadly based review of this rapidly evolving discipline."

--SGM QUARTERLY

### **From the Back Cover**

During most of the Earth's existence, bacteria were almost exclusively responsible for the biogeochemical cycling of elements. In the extant biosphere, biological transformations of matter are still dominated by bacterial activity and many important biogeochemical processes (including methane production and consumption, and nitrogen fixation) are exclusively carried out by bacteria.

**Bacterial Biogeochemistry** is the expanded and revised Second Edition of **Bacteria and Mineral Cycling** .

It is the new definitive treatment of this subject, written by world-renowned experts.

The new edition provides a detailed treatment of:

- \* Microbial processes in different types of habitat
- \* Element cycling on a global scale
- \* Bacterial metabolism in the environment
- \* Microbial symbiosis
- \* Decomposition of soil
- \* Food chains
- \* Nitrogen fixation
- \* Assimilation and reduction of carbon, nitrogen and sulphur
- \* Bioenergetic processes
- \* Characteristics of microbial communities
- \* Spacial heterogeneity
- \* Transport mechanisms
- \* Microbial biofilms
- \* Extreme environments
- \* Evolution of biogeochemical cycles
- \* Interactions between microbial processes
- \* Atmospheric composition
- \* the Earth's greenhouse properties.

This book is the essential reference for all those studying or actively involved in the fields of microbiology, ecology, limnology, soil science, geochemistry, plant nutrition, marine microbiology, microbial metabolism, bioremediation, environmental restoration communities and for those pursuing global change.

### **About the Author**

In 1986, Tom Fenchel was the recipient of the Ecology Institute Prize and the Huntsman Medal for Excellency in Oceanography. He is an honorary member of the Society for General Microbiology and is a Professor of Marine Biology and the Director of the Marine Biological Laboratory at the University of

Copenhagen in Denmark. He has authored and co-authored several books and has published about 120 original and review papers on microbial ecology, marine biology and population biology. He holds a Ph.D and a Dr.Sc. from the University of Copenhagen and is a member of the Danish Royal Academy of Sciences and of the Royal Swedish Academy of Sciences.

Gary M. King has received the Distinguished Service Award from the Natural Council of Maine, the President's Creative Achievement Award from the University of Maine, and the Graduate Research and Teaching Award from the College of Science at the University of Maine. He was a Fulbright research fellow in Denmark from 1988-1990 and was the Chief Scientist/Aquanaut Team Leader for the "Aquarius" missions 88-2 and 89-2 and Hydolab 84-5. He received his Ph.D with honors from the University of Georgia, is a professor of Microbiology and Oceanography at the University of Maine, and has published more than 80 papers in refereed scientific journals.

## **Users Review**

### **From reader reviews:**

#### **Robert Landers:**

Your reading 6th sense will not betray you, why because this Bacterial Biogeochemistry: The Ecophysiology of Mineral Cycling book written by well-known writer whose to say well how to make book that could be understand by anyone who have read the book. Written within good manner for you, leaking every ideas and creating skill only for eliminate your own hunger then you still doubt Bacterial Biogeochemistry: The Ecophysiology of Mineral Cycling as good book not just by the cover but also from the content. This is one e-book that can break don't assess book by its handle, so do you still needing one more sixth sense to pick this particular!? Oh come on your reading through sixth sense already told you so why you have to listening to yet another sixth sense.

#### **Robyn Pugh:**

This Bacterial Biogeochemistry: The Ecophysiology of Mineral Cycling is great guide for you because the content that is full of information for you who all always deal with world and possess to make decision every minute. This specific book reveal it information accurately using great manage word or we can state no rambling sentences within it. So if you are read that hurriedly you can have whole info in it. Doesn't mean it only gives you straight forward sentences but difficult core information with beautiful delivering sentences. Having Bacterial Biogeochemistry: The Ecophysiology of Mineral Cycling in your hand like getting the world in your arm, data in it is not ridiculous one. We can say that no e-book that offer you world throughout ten or fifteen tiny right but this reserve already do that. So , this can be good reading book. Hey there Mr. and Mrs. busy do you still doubt that will?

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