

PREFACE

The field of microbial physiology has expanded at an incredibly rapid pace since the last edition of this text. The development and implementation of new, highly sophisticated, techniques to study the molecular genetics and physiology of an ever broadening range of microbes has prompted us to write a fourth edition to this book. To give full measure to the extraordinary advances made in microbial physiology we have found it necessary to reorder, separate, and add new material. However, in doing so we have attempted to remain true to the goal of the first edition of "Moat's Notes" and each subsequent edition by targeting discussions to undergraduate and beginning graduate students while providing sufficient detail useful to established microbial physiologists. This new edition continues the tradition of addressing the physiology of a variety of microbes and not just *Escherichia coli*. We have updated chapters on bacterial structures, intermediary metabolism, genetics and growth; and added chapters discussing the genomic and proteomic methodologies employed by the new breed of microbial physiologist. We have reorganized, updated and expanded chapters on microbial stress responses and bacterial differentiation and have added a chapter on host-parasite interactions that correlates microbial physiology with microbial pathogenesis. We hope that the reader, be they an advanced undergraduate entering the field or a professor who has been in the field for forty years, will come to better appreciate the elegant simplicities and the intricate complexities of microbial physiology, while at the same time realizing that there is still much to be learned.

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ALBERT G. MOAT
JOHN W. FOSTER
MICHAEL P. SPECTOR

Huntington, West Virginia
Mobile, Alabama