Biology Terms A Z

Biology Glossary

Active acquired immunity: immune response occurs, producing memory cells via vaccines

Active defence: produced once pathogen is recognised, targeted responses

Adaptive: acquired and specific

Allele: variant of a gene e.g. blue eye gene vs brown eye gene

Alpha particles: densely ionising but lesser penetrating than beta rays or neutrons

Aneuploidy: abnormal number of chromosomes in a cell

Angiosperm: flowering plant

Antigen: identifying protein on exterior cell membrane

Asexual reproduction: reproduction involving one parent and no gametes, who produce offspring genetically identical to the parent

Autosome: chromosomes other than X or Y

Bacteriophage: virus which parasitises a bacterium by infection and reproducing inside it

Beta particles: sparsely ionising but more penetrating than alpha rays

Biallelic: individuals with two variant forms of a gene

Bioethics: study and investigation of how decisions in medicine and science affect society and the environment

Biological mutagens: include viruses, bacteria, fungi and their products

Biotechnology: use of biological materials as tools

Bivalent: aligned pairs of homologous chromosomes

Carcinogenic: cancer-causing

Carpal: female reproductive organs in plant

Chemical mutagens: chemicals which cause mutations following long-term exposure (frequently ingested)

Chromatid: one copy of a newly copied chromosome attached by centromere

Chromatin: DNA wound around protein in non-dividing cell

Chromosome: DNA molecule with part or all the genetic material of an organism

Colony forming unit/CFU: measure of viable bacterial or fungal cells (i.e. microscopic cells which will rapidly multiply to become a macroscopic/visible colony)

Colony morphology: methods used to describe characteristics of colonies (includes form, elevation, and margin) used to identify them

Colony: visible mass of microorganisms originating from a single mother cell; therefore, a colony constitutes a clone of bacteria all genetically alike

Communicable disease: disease that can travel between plants or animals

Control plate: to ensure integrity of agar plate in that it is not harbouring organisms and is truly sterile. If the control grows organisms after incubation, the test cultures are invalid

Cross pollination: transfer of pollen from anther of one plant to stamen of another. More beneficial in developing variation

Cytokinesis: physical process of cell replication

Deep intronic mutation: occurs within 100 nucleotides to binding site

Delayed active defence: within days (limits spread of pathogen)

Digital epidemiology: use of social media outlets to track movements of infectious diseases through a population (considerations of privacy issues)

Diploid: unique combination of two haploid gametes containing a full set of DNA sequencing

Disease: any process adversely affecting the normal function of a living thing or its parts

DNA: Deoxyribose Nucleic Acid

Endemic: native diseases consistently present within a country or region (e.g. bovine Johne's disease, foot rot)

Endo-: internal

Environmental irritants or poisons: including organic solvents, cleaning products, asbestos

Sure, here's a comprehensive and SEO-friendly article on biology terms from A to Z:

A Comprehensive Guide to Biology Terms from A to Z

Biology is a vast field that encompasses the study of life and living organisms. Whether you're a student, educator, or simply a biology enthusiast, understanding key terms is essential. This guide

provides an A to Z overview of important biology terms, helping you navigate the fascinating world of biology.

A - Abiotic Factors

Abiotic factors refer to the non-living components of an ecosystem, such as temperature, water, and sunlight. These factors play a crucial role in shaping the environment and influencing the survival of living organisms.

B - Biodiversity

Biodiversity is the variety of life in a particular habitat or ecosystem. It includes the diversity of species, genetic variation, and ecosystem diversity. High biodiversity is often associated with healthy and resilient ecosystems.

C - Cell

The cell is the basic unit of life. All living organisms are composed of cells, which can be classified as prokaryotic (without a nucleus) or eukaryotic (with a nucleus). Cells perform essential functions that sustain life.

D - DNA (Deoxyribonucleic Acid)

DNA is the molecule that carries genetic information in living organisms. It is composed of two strands that coil around each other to form a double helix. DNA sequences determine the traits and characteristics of an organism.

E - Ecosystem

An ecosystem is a community of living organisms interacting with their physical environment. Ecosystems can vary in size and complexity, from a small pond to a vast forest. They include both biotic (living) and abiotic (non-living) components.

F - Photosynthesis

Photosynthesis is the process by which green plants and some other organisms use sunlight to synthesize foods with the help of chlorophyll. It converts carbon dioxide and water into glucose and oxygen, providing energy for the plant.

G - Gene

A gene is a segment of DNA that contains the instructions for building a specific protein. Genes are the basic units of heredity and are passed from parents to offspring. They play a key role in determining an organism's traits.

H - Homeostasis

Homeostasis is the ability of an organism to maintain a stable internal environment despite changes in external conditions. This regulation is crucial for the survival and proper functioning of living organisms.

I - Inheritance

Inheritance refers to the process by which genetic information is passed from parents to their offspring. It explains how traits and characteristics are transmitted through generations.

J - Joule

A joule is a unit of energy in the International System of Units (SI). It is used to measure the amount of energy transferred or work done. In biology, energy is essential for various cellular processes.

K - Karyotype

A karyotype is the number and appearance of chromosomes in the nucleus of a eukaryotic cell. It is used to study chromosomal abnormalities and genetic disorders.

L - Lysosome

Lysosomes are membrane-bound organelles found in eukaryotic cells. They contain enzymes that break down waste materials and cellular debris. Lysosomes play a key role in cellular digestion and recycling.

M - Mitochondria

Mitochondria are known as the powerhouses of the cell. They generate energy in the form of adenosine triphosphate (ATP) through cellular respiration. Mitochondria have their own DNA and are involved in various metabolic processes.

N - Nucleus

The nucleus is a membrane-bound organelle found in eukaryotic cells. It contains the cell's genetic material (DNA) and controls the cell's growth, metabolism, and reproduction.

O - Osmosis

Osmosis is the movement of water molecules across a selectively permeable membrane from an area of lower solute concentration to an area of higher solute concentration. It is a vital process for maintaining cell turgor and homeostasis.

P - Protein

Proteins are large, complex molecules made up of amino acids. They perform a wide range of functions in the body, including catalyzing metabolic reactions, providing structural support, and regulating cellular processes.

Q - Quorum Sensing

Quorum sensing is a mechanism by which bacteria communicate and coordinate their behavior based on population density. It involves the production and detection of signaling molecules called autoinducers.

R - Ribosome

Ribosomes are molecular machines found in all living cells. They are responsible for synthesizing proteins by translating messenger RNA (mRNA) into amino acid sequences.

S - Symbiosis

Symbiosis is a close and long-term interaction between two different species. It can be mutualistic (both species benefit), commensalistic (one species benefits, the other is unaffected), or parasitic (one species benefits at the expense of the other).

T - Transcription

Transcription is the process by which the genetic information in DNA is copied into messenger RNA (mRNA). This mRNA then carries the genetic code to the ribosome for protein synthesis.

U - Uracil

Uracil is one of the four nucleotide bases in RNA. It pairs with adenine during the formation of RNA strands. Uracil replaces thymine, which is found in DNA.

V - Vacuole

Vacuoles are membrane-bound organelles found in plant and fungal cells. They store nutrients, waste products, and help maintain turgor pressure within the cell.

W - Watson and Crick

James Watson and Francis Crick are famous for discovering the double helix structure of DNA in 1953. Their work laid the foundation for modern molecular biology.

X - Xylem

Xylem is a type of vascular tissue in plants that transports water and nutrients from the roots to the rest of the plant. It also provides structural support.

Y - Yeast

Yeast is a type of fungus used in baking and brewing. It is also an important model organism in biological research due to its simple eukaryotic structure and ease of genetic manipulation.

Z - Zygote

A zygote is the initial cell formed when two gametes (sperm and egg) unite during fertilization. It contains the genetic material from both parents and undergoes multiple divisions to develop into a new organism.

By understanding these key biology terms, you can gain a deeper appreciation for the complexity and diversity of life. Whether you're studying for an exam or simply curious about the natural world, this guide provides a solid foundation in biological concepts.

biology terms a z: *A Dictionary of Biology* Elizabeth Martin, Robert Hine, 2015 Fully revised and updated for the seventh edition, this market-leading dictionary is the perfect guide for anyone studying biology, either at school or university. With more than 5,500 clear and concise entries, it provides comprehensive coverage of biology, biophysics, and biochemistry. Over 250 new entries

include terms such as Broca's area, comparative genomic hybridization, mirror neuron, and Pandoravirus. Appendices include classifications of the animal and plant kingdoms, the geological time scale, major mass extinctions of species, model organisms and their genomes, Nobel prizewinners, and a new appendix on evolution. Entry-level web links to online resources can be accessed via a companion website.

biology terms a z: Pictured Glossary in Biology Prof. Amal Attia El-Morsy Ibrahim, 2017-01-01 The glossary continues to be a valuable guidance tool for biological students those studying biology either in High Schools or Science Colleges as well as scientific researchers. Everything you need for learning biological terminology is right in your hands. The language of biology is rigorous. It is among the great tools of the mind for a better understanding and more accurate network between all biologists of the life sciences.The lists of prefixes, suffixes and terms arranged alphabetically, which lets students look terms up even if they are not sure about their exact spellings. It provides comprehensive coverage of biology, and biochemistry entries on key scientists.This glossary will contain 8000 scientific words expressing all biology branches (Zoology, Botany & Microbiology). The number of the glossary in this book is more than that found in Oxford Dictionary.

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biology terms a z: *Complete A-Z Biology Handbook* Bill Indge, 2003 FROM DAY ONE . . . TO THE NIGHT BEFORE YOUR EXAMS The A-Z Handbook explains all the key terms in Advanced Level Biology. Each entry begins with a clear definition and is followed by explanation and worked examples where relevant. The more important the term, the more detailed the entry. The A-Z format makes it exceptionally easy to use. The Complete A-Z Biology Handbook has been written to familiarise you with the language and terminology of Biology. It is useful from the first day of studying advanced Biology and Human Biology right through to the night before your exams. The Handbook is invaluable for students of all AS and A2 courses and will also be invaluable to University students. For new students - Biology terms and concepts are explained clearly During the course - the fuller explanation of more important or challenging concepts helps in tackling homework or coursework assignments For exam revision - detailed revision lists are provided to help focus your efforts, plus advice from a leading examiner Additional features include: ·Getting a Grade A ·hints on learning difficult terms and concepts ·revision tips ·revision lists for all core topics

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genetics, evolutionary studies, and mammalian physiology. -

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biology terms a z: *The Cell Biology of Sponges* T.L. Simpson, 2012-12-06 Modem biology owes much to the study of favorable model systems which fa cilitates the realization of critical experiments and results in the introduction of new concepts. Examples of such systems are numerous and studies of them are regularly recognized by the scientific community. The 1983 Nobel Prize in Med icine and Physiology is a magnificent example in which com plants served as the experimental model. In a manner somewhat more modest, other biological systems have attracted recognition due to their critical phylogenetic position, or indeed because of their uniqueness which distinguishes them from all other organisms. Assuredly, among the whole assemblage ofliving organisms, sponges stand out as worthy of interest by scientists: they are simultaneously models, an important group in evolution, and animals unlike others. As early as the beginning of this century, sponges appeared as exceptional models for the study of phenomena of cell recognition. Innumerable works have been dedicated to understanding the mechanisms which assure the reaggregation of dissociated cells and the reconstitution of a functional individual. Today, re search on these phenomena is at the ultimate, molecular level. Through an as semblage of characteristics the sponges are, based upon all available evidence, the most primitive Metazoans. Their tissues-perhaps one can say their cell groups-are loosely assembled (they possess no tight or gap junctions), cell dif ferentiation appears highly labile, and they do not develop any true organs. But, they are most certainly Metazoans.

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biology terms a z: *Terrestrial Slugs* A. South, 2012-12-06 In recent years slugs have become increasingly important, partly because several species are agricultural and horticultural pests and partly because theyhave proved to be useful experimental animals, particularly in the field of neurophysiology. Most of the early works which included slugs were essentially taxonomic but the book byTaylor (1902-1907) contained a great deal of biological information about slugs, some of which is still relevant today. The publication of the book by Runham and Hunter (1970) represented a milestone in slug research, providing a comprehensive survey of current knowledge about slugs. The book by Godan (1983) on snailsand slugswas mainly concerned with theeconomic importanceof theseanimals. The purpose of the present book is to present a review of current knowledgeofthebiologyandecologyofslugs, togetherwith theirstatusand control as pests. Although relatively little is known about the biology and ecology of tropical slugs and most information is taken from work on European slugs, the European pest species have become widely distributed throughout temperate regions and this book should be of interest world wide. It is written as a source of information for people seeking to control slug pests and, also, for those wishing to use slugs for research or teaching purposes. The book is intended particularly to provide a starting point for those beginning research on slugs and an extensive bibliography has been provided.

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first principles of DNA. Most importantly, it enriches the so-called “Chargaff’s grammar of biology” by providing the conceptual theoretical framework necessary to generalize Chargaff’s rules. Starting with a simple example of DNA mathematical modeling where human nucleotide frequencies are associated to the Fibonacci sequence and the Golden Ratio through an optimization problem, its breakthrough is showing that the reverse, complement and reverse-complement operators defined over oligonucleotides induce a natural set partition of DNA words of fixed-size. These equivalence classes, when organized into a matrix form, reveal hidden patterns within the DNA sequence of every living organism. Intended for undergraduate and graduate students both in mathematics and in life sciences, it is also a valuable resource for researchers interested in studying invariant genomic properties.

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biology terms a z: Biology as Society, Society as Biology: Metaphors Sabine Maasen, E. Mendelsohn, P. Weingart, 2013-12-01 not lie in the conceptual distinctions but in the perceived functions of metaphors and whether in the concrete case they are judged positive or negative. The ongoing debates reflect these concerns quite clearly~ namely that metaphors are judged on the basis of supposed dangers they pose and opportunities they offer. These are the criteria of evaluation that are obviously dependent on the context in which the transfer of meaning occurs. Our fundamental concern is indeed the transfer itself~ its prospects and its limits. Looking at possible functions of metaphors is one approach to under standing and elucidating sentiments about them. The papers in this volume illustrate, by quite different examples, three basic functions of metaphors: illustrative, heuristic~ and constitutive. These functions rep resent different degrees of transfer of meaning. Metaphors are illustrative when they are used primarily as a literary device, to increase the power of conviction of an argument, for example. Although the difference between the illustrative and the heuristic function of metaphors is not great, it does exist: metaphors are used for heuristic purposes whenever differences of meaning are employed to open new perspectives and to gain new insights. In the case of constitutive metaphors they function to actually replace previous meanings by new ones. Sabine Maasen in her paper introduces the distinction between transfer and transforma tion.

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in Nature. This book argues that contemporary biology should progress towards and revolve around an even more fundamental idea, that of autonomy. Biological autonomy describes living organisms as organised systems, which are able to self-produce and self-maintain as integrated entities, to establish their own goals and norms, and to promote the conditions of their existence through their interactions with the environment. Topics covered in this book include organisation and biological emergence, organisms, agency, levels of autonomy, cognition, and a look at the historical dimension of autonomy. The current development of scientific investigations on autonomous organisation calls for a theoretical and philosophical analysis. This can contribute to the elaboration of an original understanding of life - including human life - on Earth, opening new perspectives and enabling fecund interactions with other existing theories and approaches. This book takes up the challenge.

biology terms a z: DNA Methylation J. Jost, H. Saluz, 2013-11-11 The occurrence of 5-methylcytosine in DNA was first described in 1948 by Hotchkiss (see first chapter). Recognition of its possible physiologi cal role in eucaryotes was first suggested in 1964 by Srinivasan and Borek (see first chapter). Since then work in a great many laboratories has established both the ubiquity of 5-methylcytosine and the catholicity of its possible regulatory function. The explosive increase in the number of publications dealing with DNA methylation attests to its importance and makes it impossible to write a comprehensive coverage of the literature within the scope of a general review. Since the publication of the 3 most recent books dealing with the subject (DNA methylation by Razin A. , Cedar H. and Riggs A. D. , 1984 Springer Verlag; Molecular Biology of DNA methylation by Adams R. L. P. and Burdon R. H. , 1985 Springer Verlag; Nucleic Acids Methylation, UCLA Symposium suppl. 128, 1989) considerable progress both in the techniques and results has been made in the field of DNA methylation. Thus we asked several authors to write chapters dealing with aspects of DNA methyla tion in which they are experts. This book should be most useful for students, teachers as well as researchers in the field of differentiation and gene regulation. We are most grateful to all our colleagues who were willing to spend much time and effort on the publication of this book. We also want to express our gratitude to Yan Chim Jost for her help in preparing this book.

biology terms a z: *Glossary of Soil Science Terms 2008* Soil Science Society of America, 2008 More than 1800 terms are included in this revised glossary. Subject matter includes soil physics, soil chemistry, soil biology and biochemistry, pedology, soil and water management and conservation, forest and range soils, nutrient management and soil and plant analysis, mineralogy, wetland soils, and soils and environmental quality. Two appendices on tabular information and designations for soil horizons and layers also are included.

biology terms a z: *Code Biology* Marcello Barbieri, 2015-02-02 This book is the study of all codes of life with the standard methods of science. The genetic code and the codes of culture have been known for a long time and represent the historical foundation of this book. What is really new in this field is the study of all codes that came after the genetic code and before the codes of culture. The existence of these organic codes, however, is not only a major experimental fact. It is one of those facts that have extraordinary theoretical implications. The first is that most events of macroevolution were associated with the origin of new organic codes, and this gives us a completely new reconstruction of the history of life. The second implication is that codes involve meaning and we need therefore to introduce in biology not only the concept of information but also the concept of biological meaning. The third theoretical implication comes from the fact that the organic codes have been highly conserved in evolution, which means that they are the greatest invariants of life. The study of the organic codes, in short, is bringing to light new mechanisms that have operated in the history of life and new fundamental concepts in biology.

biology terms a z: *The Music of Life* Denis Noble, 2008-02-14 What is Life? Decades of research have resulted in the full mapping of the human genome - three billion pairs of code whose functions are only now being understood. The gene's eye view of life, advocated by evolutionary biology, sees living bodies as mere vehicles for the replication of the genetic codes. But for a physiologist, working with the living organism, the view is a very different one. Denis Noble is a

world renowned physiologist, and sets out an alternative view to the question - one that becomes deeply significant in terms of the living, breathing organism. The genome is not life itself. Noble argues that far from genes building organisms, they should be seen as prisoners of the organism. The view of life presented in this little, modern, post-genome project reflection on the nature of life, is that of the systems biologist: to understand what life is, we must view it at a variety of different levels, all interacting with each other in a complex web. It is that emergent web, full of feedback between levels, from the gene to the wider environment, that is life. It is a kind of music. Including stories from Noble's own research experience, his work on the heartbeat, musical metaphors, and elements of linguistics and Chinese culture, this very personal and at times deeply lyrical book sets out the systems biology view of life.

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biology terms a z: Ending Discrimination Against People with Mental and Substance Use Disorders National Academies of Sciences, Engineering, and Medicine, Division of Behavioral and Social Sciences and Education, Board on Behavioral, Cognitive, and Sensory Sciences, Committee on the Science of Changing Behavioral Health Social Norms, 2016-09-03 Estimates indicate that as many as 1 in 4 Americans will experience a mental health problem or will misuse alcohol or drugs in their lifetimes. These disorders are among the most highly stigmatized health conditions in the United States, and they remain barriers to full participation in society in areas as basic as education, housing, and employment. Improving the lives of people with mental health and substance abuse disorders has been a priority in the United States for more than 50 years. The Community Mental Health Act of 1963 is considered a major turning point in America's efforts to improve behavioral healthcare. It ushered in an era of optimism and hope and laid the groundwork for the consumer movement and new models of recovery. The consumer movement gave voice to people with mental and substance use disorders and brought their perspectives and experience into national discussions about mental health. However over the same 50-year period, positive change in American public attitudes and beliefs about mental and substance use disorders has lagged behind these advances. Stigma is a complex social phenomenon based on a relationship between an attribute and a stereotype that assigns undesirable labels, qualities, and behaviors to a person with that attribute. Labeled individuals are then socially devalued, which leads to inequality and discrimination. This report contributes to national efforts to understand and change attitudes, beliefs and behaviors that can lead to stigma and discrimination. Changing stigma in a lasting way will require coordinated efforts, which are based on the best possible evidence, supported at the national level with multiyear funding, and planned and implemented by an effective coalition of representative stakeholders. Ending Discrimination Against People with Mental and Substance Use Disorders: The Evidence for Stigma Change explores stigma and discrimination faced by individuals with mental or substance use disorders and recommends effective strategies for reducing stigma and encouraging people to seek treatment and other supportive services. It offers a set of conclusions and recommendations about successful stigma change strategies and the research needed to inform and evaluate these efforts in the United States.

biology terms a z: The Gene Ontology Handbook Christophe Dessimoz, Nives Skunca, 2020-10-08 This book provides a practical and self-contained overview of the Gene Ontology (GO),

the leading project to organize biological knowledge on genes and their products across genomic resources. Written for biologists and bioinformaticians, it covers the state-of-the-art of how GO annotations are made, how they are evaluated, and what sort of analyses can and cannot be done with the GO. In the spirit of the Methods in Molecular Biology book series, there is an emphasis throughout the chapters on providing practical guidance and troubleshooting advice. Authoritative and accessible, The Gene Ontology Handbook serves non-experts as well as seasoned GO users as a thorough guide to this powerful knowledge system. This work was published by Saint Philip Street Press pursuant to a Creative Commons license permitting commercial use. All rights not granted by the work's license are retained by the author or authors.

biology terms a z: *The Cambridge Dictionary of Human Biology and Evolution* Larry L. Mai, Marcus Young Owl, M. Patricia Kersting, 2005-01 The Dictionary of Human Biology and Evolution (DHBE) is an invaluable research and study tool for both professionals and students covering a broad range of subjects within human biology, physical anthropology, anatomy, auxology, primatology, physiology, genetics, paleontology and zoology. Packed with 13000 descriptions of terms, specimens, sites and names, DHBE also includes information on over 1000 word roots, taxonomies and reference tables for extinct, recent and extant primates, geological and oxygen isotope chronologies, illustrations of landmarks, bones and muscles and an illustration of current hominid phylogeny, making this a must-have volume for anyone with an interest in human biology or evolution. DHBE is especially complete in its inventory of archaeological sites and the best-known hominid specimens excavated from them, but also includes up-to-date information on terms such as in silico, and those relating to the rapidly developing fields of human genomics.

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biology terms a z: An A-Z of Feminist Theology Lisa Isherwood, Dorothea McEwan, 2016-10-06 This exciting volume brings together a wide range of perspectives on one of the most important and challenging areas of modern theology. There are entries on all the major themes of Christian feminist theology, including models of God and of the Church, ethics and spirituality, sexuality and liberation. Many of the entries push their respective discussions beyond the rigid boundaries of previous theological discourse. Together they present the far-reaching concerns of feminist theology in an accessible and stimulating way. The compendium is both a resource and an inspiration for scholars and students of feminist theology and for all those who are interested in this field of reflection and activity.

biology terms a z: *Network Models in Population Biology* E. R. Lewis, 2012-12-06 This book is an outgrowth of one phase of an upper-division course on quantitative ecology, given each year for the past eight at Berkeley. I am most grateful to the students in that course and to many graduate students in the Berkeley Department of Zoology and Colleges of Engineering and Natural Resources whose spirited discussions inspired much of the book's content. I also am deeply grateful to those faculty colleagues with whom, at one time or another, I have shared courses or seminars in ecology or population biology, D.M. Auslander, L. Demetrius, G. Oster, O.H. Paris, F.A. Pitelka, A.M. Schultz, Y. Takahashi, D.B. Tyler, and P. Vogelhut, all of whom contributed substantially to the development of my thinking in those fields, to my Depart mental colleagues E. Polak and A.J. Thomasian, who

guided me into the litera ture on numerical methods and stochastic processes, and to the graduate students who at one time or another have worked with me on population-biology projects, L.M. Brodnax, S-P. Chan, A. Elterman, G.C. Ferrell, D. Green, C. Hayashi, K-L. Lee, W.F. Martin Jr., D. May, J. Stamnes, G.E. Swanson, and I. Weeks, who, together, undoubtedly provided me with the greatest inspiration. I am indebted to the copy-editing and production staff of Springer-Verlag, especially to Ms. M. Muzeniek, for their diligence and skill, and to Mrs. Alice Peters, biomathematics editor, for her patience.

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