Bookmark File Chapter 15 The Chromosomal Basis Of Inheritance Reading Guide Answers Pdf File Free

The Physical and Chemical Basis of Inheritance Chemical Basis of Inheritance Physical Basis of Inheritance Understanding Genetics Molecular Basis of Inherited Disease General Genetics Principles of Evolutionary Medicine The Metabolic Basis of Inherited Disease Molecular Structure of Nucleic Acids Concepts of Biology The Axinfu Mutation in Mice Quick Look Books in Molecular Genetics Molecular Biology Concepts for Inquiry Extended Heredity Cytology Genetics and Molecular Biology Nucleic acids The Evaluation of Forensic DNA Evidence Basic and Molecular Genetics Perinatal Genetics Genetics: Classical to Modern The Metabolic & Molecular Bases of Inherited Disease A Short History of Medical Genetics Human Genetics The Cellular Basis of Inheritance Genetics The Physical and Chemical Basis of Inheritance, by George W. Beadle,... [Preface by L. S. Cressman.]. Fundamentals of Genetics The Physical Basis of Heredity Genetics Genetics for Endocrinologists A Troublesome Inheritance Essentials Of Human Genetics (Rev) Genetics for Orthopedic Surgeons Genetics for Rheumatologists The Transforming Principle IGenetics DNA Patterns of Inheritance The Metabolic Basis of Inherited Disease Genetics

How genes are not the only basis of heredity—and what this means for evolution, human life, and disease For much of the twentieth century it was assumed that genes alone mediate the transmission of biological information across generations and provide the raw material for natural selection. In Extended Heredity, leading evolutionary biologists Russell Bonduriansky and Troy Day challenge this premise. Drawing on the latest research, they demonstrate that what happens during our lifetimes--and even our grandparents' and great-grandparents' lifetimes—can influence the features of our descendants. On the basis of these discoveries, Bonduriansky and Day develop an extended concept of heredity that upends ideas about how traits can and cannot be transmitted across generations. By examining the history of the gene-centered view in modern biology and reassessing fundamental tenets of evolutionary theory, Bonduriansky and Day show that nongenetic inheritance—involving epigenetic, environmental, behavioral, and cultural factors—could play an important role in evolution. The discovery of nongenetic inheritance therefore has major implications for key questions in evolutionary biology, as well as human health. Extended Heredity reappraises long-held ideas and opens the door to a new understanding of inheritance and evolution. The purpose of this manual is to provide an educational genetics resource for individuals, families, and health professionals in the New York - Mid-Atlantic region and increase awareness of specialty care in genetics. The manual begins with a basic introduction to genetics concepts, followed by a description of the different types and applications of genetic tests. It also provides information about diagnosis of genetic disease, family history, newborn screening, and genetic counseling. Resources are included to assist in patient care, patient and professional education, and identification of specialty genetics services within the New York - Mid-Atlantic region. At the end of each section, a list of references is provided for additional information. Appendices can be copied for reference and offered to patients. These take-home resources are critical to helping both providers and patients understand some of the basic concepts and applications of genetics and genomics. Get a quick, expert overview of the fast-changing field of perinatal genetics with this concise, practical resource. Drs. Mary Norton, Jeffrey A. Kuller, Lorraine Dugoff, and George Saade fully cover the clinically relevant topics that are key to providers who care for pregnant women and couples contemplating pregnancy. It’s an ideal resource for Ob/Gyn physicians, maternal-fetal medicine specialists, and clinical geneticists, as well as midwives, nurse practitioners, and other obstetric providers. Provides a comprehensive review of basic principles of medical genetics and genetic counseling, molecular genetics, cytogenetics, prenatal screening options, chromosomal microarray analysis, whole exome sequencing, prenatal ultrasound, diagnostic testing, and more. Contains a chapter on fetal treatment of genetic disorders. Consolidates today’s available information and experience in this important area into one convenient resource. In 1992 the National Research Council issued DNA Technology in Forensic Science, a book that documented the state of the art in this emerging field. Recently, this volume was brought to worldwide attention in the murder trial of celebrity O. J. Simpson. The Evaluation of Forensic DNA Evidence reports on developments in population genetics and statistics since the original volume was published. The committee comments on statements in the original book that proved controversial or that have been misapplied in the courts. This volume offers recommendations for handling DNA samples, performing calculations, and other aspects of using DNA as a forensic tool--modifying some recommendations presented in the 1992 volume. The update addresses two major areas: Determination of DNA profiles. The committee considers how laboratory errors (particularly false matches) can arise, how errors might be reduced, and how to take into account the fact that the error rate can never be reduced to zero. Interpretation of a finding that the DNA profile of a suspect or victim matches the evidence DNA. The committee addresses controversies in population genetics, exploring the problems that arise from the mixture of groups and subgroups in the American population and how this substructure can be accounted for in calculating frequencies. This volume examines statistical issues in interpreting frequencies as probabilities, including adjustments when a suspect is found through a database search. The committee includes a detailed discussion of what its recommendations would mean in the courtroom, with numerous case citations. By resolving several remaining issues in the evaluation of this increasingly important area of forensic evidence, this technical update will be important to forensic scientists and population geneticists--and helpful to attorneys, judges, and others who need to understand DNA and the law. Anyone working in laboratories and in the courts or anyone studying this issue should own this book. In today's world genetics is molecular, whether one is dealing with bacteria, mice or humans. In this breakthrough text, IMS: Medical Molecular Genetics, that message is relayed to medical students taking a course in medical genetics and to house officers who suddenly find themselves at a loss with the new genetics they encounter. Understanding the molecular basis of human genetics has become essential in diagnosing and treating human disease. The goal of this book is to present to the reader the basic principles needed to use the ddiscoveries in this remarkable field. IMS: Medical Molecular Genetics covers the basic structure, properties, and functions of nucleic acids; mutations and their consequences on the function of proteins; DNA repair processes and their relationships to human disease; chromosome structure and the basis of inheritance; modern methods for detecting defective genes; and the basis of positional cloning and how it is currently being used to map disease genes. The clinical aspects of genetics and discussions of syndromes and dysmorphology, prenatal diagnosis; and genetic counselling are also presented. The most up-to-date information on cancer genetics includes the role of oncogenes and tumor suppressor genes in tumorigenesis and the use of molecular tests to diagnose cancer genes. 1. Genetics, Epigenetics and Genomics: An Overview 2. Mendel's Laws of Inheritance 3. Lethality and Interaction of Genes 4. Genetics of Quantitative Traits (QTs): 1. Mendelian Approach (Multiple Factor Hypothesis) 5. Genetics of Quantitative Traits: 2. Biometrical Approach 6. Genetics of Quantitative Traits: 3. Molecular Markers and QTL Analysis 7. Genetics of Quantitative Traits: 4. Linkage Disequilibrium (LD) and Association Mapping 8. Multiple Alleles and Isoalleles 9. Physical Basis of Heredity 1. The Chromosome Theory of Inheritance 10. Physical Basis of Heredity 2. The Nucleus and the Chromosome 11. Physical Basis of Heredity 3. Cell Division (Mitosis and Meiosis) 12. The Cell Division Cycle: Molecular Basis 13. Linkage and Crossing Over in Diploid Organisms (Higher Eukaryotes) 14. Tetrad Analysis, Mitotic Recombination and Gene Conversion in Haploid Organisms (Fungi and Single Celled Algae) 15. Genetics of Sexuality and Recombination in Bacteria and Viruses 16. Molecular Basis of Division of Bacterial Cells and Eukaryotic Organelles (Including Sporulation in Bacteria) 17. Molecular Basis of Homologous Recombination (HR) 18. Molecular Basis of Site-Specific Recombination (Gene Targeting) 19. Recombination and Resolution of Gene Structure (A Modified Concept of Allelomorphism) 20. Accessory Genetic Elements: Plasmids, Transposons and Retroelements 21. Sex-Linked, Sex-Influenced and Sex-Limited Traits (Including Sex-Biased Inheritance) 22. Genetics of Sex Determination, Sex Differentiation and Dosage Compensation 23. Maternal Effects and Cytoplasmic Inheritance 24. Structural Changes In Chromosomes 25. Numerical Changes in Chromosomes 26. Mutations: 1. Morphological Level (Including Lethal Mutations) 27. Mutations: 2. Biochemical Level (Biochemical and Microbial Genetics) 28. Mutations: 3. Molecular Mechanism and Use m Functional Genomics 29. Human Genetics and Genomics 30. Chemistry of the Gene 1. Nucleic Acids and Their Structure 31. Chemistry of the Gene 2. Synthesis, Modification and Repair of DNA 32. Organization of Genetic Material 1. Genome Size, C- Value Paradox and Repetitive DNA Sequences 33. Organisation of Genetic Material 2. Packaging of DNA as Nucleosomes ID Eukaryotes 34. Organization of Genetic Material 3. Mitochondrial and Chloroplast Genomes 35. Organization of Genetic Material 4. Split Genes, Overlapping Genes, Pseudogenes, Retrogenes and Cryptic Genes 36. The Genetic Code 37. Expression of Gene and Protein Synthesis 1. Transcription in Prokaryotes and Eukaryotes 38. Expression of Gene and Protein Synthesis: 2. RNA Processing 39. Expression of Gene and Protein Synthesis: 3. Protein Structure and Molecular Machines for Translation of mRNA (Ribosome, tRNA and aaRS) 40. Expression of Gene and Protein Synthesis: 4. Translation of mRNA III Prokaryotes and Eukaryotes 41. Protein Modification, Folding, Translocation and Degradation 42. Regulation of Gene Expression 1. Operon Circuits in Bacteria and Other Prokaryotes 43. Regulation of Gene Expression 2. Regulation Cascades in Bacteriophages 44. Regulation of Gene Expression 3. A Variety of Mechanisms m Eukaryotes 45. Regulation of Gene Expression 4. Chromatin Remodeling and Cellular Memory 46. Cell Receptors and Signal Transduction 47. Genes in Development 48. Behavioural Genetics 49. Epigenetics and Epigenomics 50. Genetic Engineering and Biotechnology 1. Recombinant DNA, Molecular Probes, Gene Libraries, PCR (Cloning and Amplification of DNA) and DNA Chips 51. Genetic Engineering and Biotechnology 2. Restriction Maps and Molecular Marker Maps 52. Genetic Engineering and Biotechnology 3. Isolation, Sequencing and Synthesis of Genes 53. Genetic Engineering and Biotechnology 4. Gene Transfer Methods and Transgenic Organisms 54. Genetic Engineering and Biotechnology 5. Hybridoma and Monoclonal Antibodies 55. Multigene Families In Eukaryotes 56. Genomics and Proteomics (Animals, Plants and Microbes) 57. Genetics of Cancer: Proto-oncogenes, Oncogenes A Comprehensive Text For Undergraduate And Postgraduate Medical Students And Students Of Genetics, This Book Deals With The Principles Of Human Genetics, And Discusses The Mechanism Of Inheritance At The Molecular And Genetic Level. It Also Examines The Latest Conceptual And Technological Developments In The Field Of Genetics. CYTOLOGY 1. Cell Theory and The Cell 2. Techniques for Cell Study 3. Cell Wall and Extracellular Matrix 4. Structure of Cell Membrane (Including Plasma Membrane) 5. Functions of Cell Membrane 6. Intracellular Compartments I. Nucleus, Nucleolus and Chromosomes 7. Intracellular Compartments 2. The Mitochondrion 8. Intracellular Compartments 3. The Plastids 9. Intracellular Compartments 3. Endoplasmic Reticulum (ER), Ribosome, 10. Cytoskeleton 11. Cell Division 12. Molecular Basis of Cell Cycle GENETICS 1. Genetics : An Overview 2. Mendels' Laws of Inheritance 3. Lethality and Interaction of Genes 4. Quantitative Inheritance 5. Multiple Alleles (Based on Classical Concept of Allelomorphism) 6. Physical Basis of Heredity (Chromosome Theory of Heredity) 7. Linkage and Crossing Over 8. Sex Linked, Sex Influenced and Sex Limited Traits 9. Sex Determination, Sex Differentiation, Dosage Compensation and Genetic Imprinting 10. Maternal Effects, Cytoplasmic Inheritance and Organellar Genetics 11. Structural Changes in Chromosomes 12. Numerical Changes in Chromosomes 13. Mutations I. Morphological Level (Including Lethal Mutations) 14. Mutations 2. Biochemical Mutations (Biochemical and Microbial Genetics) 15. Fine Structure of Gene A New Concept of Allelomorphism 16. Cell Division, Sexuality and Recombination in Bacteria and Viruses 17. Plasmids, IS Elements, Transposons and Retroelements 18. Human Genetics MOLECULAR BIOLOGY 19. Structure and Synthesis of Nucleic Acids 20. Structure and Synthesis of Proteins 2l. Regulation of Protein Synthesis 22. Genetic Code, Overlaping Genes and Split Genes 23. Recombinant DNA, PCR and DNA Chips / Microarrays 24.

Synthesis, Isolation and Sequencing of Genes. Begins with molecular characterization of the human genome (rather than the conventional descriptions of Mendelian inheritance, pedigree analysis, and chromosome abnormalities), and maintains this emphasis on understanding human genetics in molecular terms throughout. Suitable as a text for biology "This book traces the development of genetics in medicine from the first descriptions of inherited diseases more than 300 years ago to the new applications resulting from mapping and sequencing the human genome. It follows both the scientific and the medical advances, focusing especially on those of the past 50 years, which have seen the field of medical genetics emerge as one of the foremost and most rapidly changing medical specialties, now influencing the whole of medicine. It also examines the ethical challenges faced by those working in the field, and describes some of the past disasters that have resulted from these being ignored, notably the abuses of eugenics and the catastrophic destruction of genetics in Soviet Russia. This is the first book of its kind; it is clearly and simply written, and will be valuable to all those who have an interest or concern in the development of medical genetics, as well as those actually working in the field. Historians and social scientists will likewise find this book an important foundation for future detailed studies, which are urgently needed."--BOOK JACKET. Gives full coverage of genetics, including the step-by-step problem-solving approach pioneered by the author. The book is suitable for students who have a limited background in biology and chemistry, or for briefer courses where there is little time to cover advanced topics. This text was conceived as a tool to address the problems encountered by an endocrinologist when sureveying the wealth of information available from the past two decades of genetic research. The ability to pinpoint genetic defects responsible for a specific endocrine disorder opens the possibility of faster and simpler diagnosis, improved understanding of disease mechanisms, and development of new treatment modalities. However, the abundance of information attained may be so overwhelming that the practicing physician may be unable to apply this knowledge to the daily routine of clinical practice. Annotation Trainee and practicing rheumatologists The study of disease genetics arguably began in rheumatology, with the description of the hereditary basis of alkaptonuria by Garrod in 1902, and the introduction of the concept of in-born errors of metabolism. A large proportion of the diseases seen by rheumatologists have genetic influences. The dissection of the genetic basis of rheumatic diseases has moved rapidly over the past 15 years. Increasingly, rheumatologists are being asked the question "How likely is it that my children will develop the disease I have?', and about the utility of genetic testing for those diseases. This book is not a hefty tome full of genetics jargon, but a quick reference source for doctors written to help answer those questions. Presents clinical, biochemical, and genetic information concerning those metabolic anomalies grouped under inborn errors of metabolism. Forty years ago, three medical researchers--Oswald Avery, Colin MacLeod, and Maclyn McCarty--made the discovery that DNA is the genetic material. With this finding was born the modern era of molecular biology and genetics. The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the United States Federal Government. The present book is covered in 3 parts comprising 27 chapters. The first part covers "Mendelian or classical genetics" in 11 chapters dealing with introduction to genetics, sources of genetic variation, heredity and environment, Mendelism, Chromosomal theory of inheritance, Exceptions to Mendelism [Multiple alleles, gene expression (action) on phenotypic level, Linkage of genes and crossing over], Sex determination and sex controlled inheritance. The second part covers "Molecular genetics" in 14 chapters which includes genetics, genetic material (DNA) and its molecular structure, changes in its structure (mutation), and replication of DNA; Gene expression at molecular level (transcription and translation), Regulation of gene expression in prokaryotes and eukaryotes, Gene manipulation techniques and applications. The last part covers "Genetic Statistics" which includes 2 chapters on the probability and Chi-square testing of discrete variable. This book on "Genetics" has been written to fulfill the hope and requirement of post-graduate students, teachers and of those intend to appear and pass the competitive examinations on All India basis like SRF, NET and ARS conducted by ASRB (ICAR), UGC and UPSC. Recognizing genes - Mapping and tracking genes - Human inherited disease ___ This curriculum guide describes how an introductory college molecular biology course can be taught through inquiry using the BSCS "5E" Inquiry method of learning science. It is intended to frame a course that makes use of the textbook Molecular Biology: Concepts for Inquiry and the companion student workbook Molecular Biology Concepts for Inquiry: The Exploration Workbook. This curriculum is appropriate for college courses and high school courses taught at the college level. This guide provides a detailed curricular plan for how inquiry experiences might be used effectively in a molecular biology course that aims to maximize conceptual understanding and the application of logic. A combination of experiments*, class activities and discussions of textbook readings are used in lieu of most direct lecture. All of the pages from the student workbook are replicated here and are accompanied by answers and pedagogical suggestions for how these inquiry experiences might be guided by the teacher. Each lesson includes pedagogical commentary, roles of stages of inquiry, a list of concepts taught, relevant student misconceptions, estimated timing, materials, answer keys, and related workbook pages with at-a-glance marginal notations describing the stage of inquiry and the role of the teacher. Although this guide was written primarily for teachers it was formatted with the intention that students learning molecular biology on their own could also use this book as an answer key, with answers separate from workbook pages. Free Kindle Matchbook with paperback purchase! CLASSROOM ACTIVITIES: Students explore evidence through logic to construct an understanding of concepts and eliminate misconceptions. Students elaborate on their understanding by applying it to new situations. These activities are intended to be conducted in a classroom where an instructor periodically guides student thinking in small groups and leads class discussions of key concepts following activities. Answer keys are included. Inquiry activities include: introductory biochemistry, how proteins contribute to modes of inheritance, the structure and function of fluorescent proteins, the conceptual basis of PCR, the function of restriction enzymes and their use in engineering, the design of the mutagenesis of fluorescent proteins through Gibson assembly, analysis of an iGEM device, the design of a Golden Gate assembly of gene parts, epigenetic inheritance in imprinted diseases, analysis of the genetics of cancer (childhood vs. adu Suggested wet lab experiment protocols are provided at https: //hackettmolecularbiology.blogspot.com/. The roles of these experiments in the overall inquiry strategy are described in this guide. CLASSROOM DISCUSSION QUESTIONS: These open-ended questions serve as the basis for class discussions following Molecular Biology: Concepts for Inquiry textbook reading assignments. Answer keys are included. Readings and discussions substitute for most direct lecture in explaining concepts and they are accompanied by publicly available online self-assessment reading comprehension quizzes. The author will share quizzes with instructors for their own editing and distribution. d104book image slides are also available to instructors upon request by contacting the author at https: //hackettmolecularbiology.blogspot.com/. UNIT SELF-ASSESSMENTS: Questions and answer keys. APPENDICES AND REFERENCE MATERIALS: Essential concepts and workbook appendices. Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, Concepts of Biology is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand.We also strive to show the interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of Concepts of Biology is that instructors can customize the book, adapting it to the approach that works best in their classroom. Concepts of Biology also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts. Molecular biology is one of the fastest growing areas of medical research and now impinges on almost every medical discipline. This work provides an up-to-date overview of developments in molecular genetics as they relate to orthopedic practice. Mendelism. Sex chromosomes and sex linkage; probability. The vehicles of inheritance. Life cycles and reproduction. The chemical basis of heredity. Linkage, crossing over, and chromosome mapping. Variations in genome structure. Mutation. Gene structure. Gene function. Extrachromosomal and epigenetic systems. The role of genes in development. Genes in populations. Quantitative inheritance. Genetics and man. Knowledge about hereditary phenomena has been important for long time. Civilization itself became possible when nomadic tribes learned to domesticate plants and animals. Long before biology existed as a scientific discipline, people selected grains with higher yields and greater vigor and animals with better fur or meat. They puzzled about the inheritance of desirable and undesirable traits in human population. Despite this, the actual basis of inheritance was obscure until discovery of Mendel s laws. With the wealth of genetic knowledge we now make generalization about DNA, genes, phenotypes and genotypes as though these concepts were self evident. A working knowledge of principles of genetics is essential for making informed decisions on many scientific, political and personal levels. Genetics Genetics Fifty years ago, James D. Watson, then just twentyfour, helped launch the greatest ongoing scientific quest of our time. Now, with unique authority and sweeping vision, he gives us the first full account of the genetic revolution—from Mendel’s garden to the double helix to the sequencing of the human genome and beyond. Watson’s lively, panoramic narrative begins with the fanciful speculations of the ancients as to why “like begets like” before skipping ahead to 1866, when an Austrian monk named Gregor Mendel first deduced the basic laws of inheritance. But genetics as we recognize it today—with its capacity, both thrilling and sobering, to manipulate the very essence of living things—came into being only with the rise of molecular investigations culminating in the breakthrough discovery of the structure of DNA, for which Watson shared a Nobel prize in 1962. In the DNA molecule’s graceful curves was the key to a whole new science. Having shown that the secret of life is chemical, modern genetics has set mankind off on a journey unimaginable just a few decades ago. Watson provides the general reader with clear explanations of molecular processes and emerging technologies. He shows us how DNA continues to alter our understanding of human origins, and of our identities as groups and as individuals. And with the insight of one who has remained close to every advance in research since the double helix, he reveals how genetics has unleashed a wealth of possibilities to alter the human condition—from genetically modified foods to genetically modified babies—and transformed itself from a domain of pure research into one of big business as well. It is a sometimes topsy-turvy world full of great minds and great egos, driven by ambitions to improve the human condition as well as to improve investment portfolios, a world vividly captured in these pages. Facing a future of choices and social and ethical implications of which we dare not remain uninformed, we could have no better guide than James Watson, who leads us with the same bravura storytelling that made The Double Helix one of the most successful books on science ever published. Infused with a scientist’s awe at nature’s marvels and a humanist’s profound sympathies, DNA is destined to become the classic telling of the defining scientific saga of our age. Biological Sciences Patterns of Inheritance Concepts of Biology Genetics is the study of heredity. Johann Gregor Mendel set the framework for genetics long before chromosomes or genes had been identified, at a time when meiosis was not well understood. Mendel selected a simple biological system and conducted methodical, quantitative analyses using large sample sizes. Because of Mendel's work, the fundamental principles of heredity were revealed. We now know that genes, carried on chromosomes, are the basic functional units of heredity with the ability to be replicated, expressed, or mutated. Today, the postulates put forth by Mendel form the basis of classical, or Mendelian, genetics. Not all genes are transmitted from parents to offspring according to Mendelian genetics, but Mendel's experiments serve as an excellent starting point for thinking about inheritance. Chapter Outline: Mendel's Experiments Laws of Inheritance Extensions of the Laws of Inheritance The Open Courses Library introduces you to the best Open Source Courses. Drawing on startling new evidence from the mapping of the genome, an explosive new account of the genetic basis of race and its role in the human story Fewer ideas have been more toxic or harmful than the idea of the biological reality of race, and with it the idea that humans of different races are biologically different from one another. For this understandable reason, the idea has been banished from polite academic conversation. Arguing that race is more than just a social construct can get a scholar run out of town, or at least off campus, on a rail. Human evolution, the consensus view insists, ended in prehistory. Inconveniently, as Nicholas Wade argues in A Troublesome Inheritance, the consensus view cannot be right. And in fact, we know that populations have changed in the past few thousand years—to be lactose tolerant, for example, and to survive at high altitudes. Race is not a bright-line distinction; by definition it means that the more human populations are kept apart, the more they evolve their own distinct traits under the selective pressure known as Darwinian evolution. For many thousands of years, most human populations stayed where they were and grew

distinct, not just in outward appearance but in deeper senses as well. Wade, the longtime journalist covering genetic advances for The New York Times, draws widely on the work of scientists who have made crucial breakthroughs in establishing the reality of recent human evolution. The most provocative claims in this book involve the genetic basis of human social habits. What we might call middle-class social traits—thrift, docility, nonviolence—have been slowly but surely inculcated genetically within agrarian societies, Wade argues. These “values” obviously had a strong cultural component, but Wade points to evidence that agrarian societies evolved away from hunter-gatherer societies in some crucial respects. Also controversial are his findings regarding the genetic basis of traits we associate with intelligence, such as literacy and numeracy, in certain ethnic populations, including the Chinese and Ashkenazi Jews. Wade believes deeply in the fundamental equality of all human peoples. He also believes that science is best served by pursuing the truth without fear, and if his mission to arrive at a coherent summa of what the new genetic science does and does not tell us about race and human history leads straight into a minefield, then so be it. This will not be the last word on the subject, but it will begin a powerful and overdue conversation. This is the first integrated and comprehensive textbook to explain the principles of evolutionary biology from a medical perspective and to focus on how medicine and public health might utilise evolutionary biology.