
This well-written 69-chapter book discusses laboratory tests from the organ system and disorder approach. This is not a book on how to do laboratory tests. Instead, the book enables the reader to first see how tests should be utilized from the laboratory perspective, and then turns the perspective around so that the reader sees how proper use of laboratory tests aids in the diagnosis and treatment of specific clinical disorders.

The book is divided into two parts. Part I gives a very thoughtful discussion of clinical utilization issues and the emerging role of the clinical laboratory scientist (CLS) as a bridge between the laboratory and the clinician needing laboratory information. Part II takes up a clinical focus and gives an excellent discussion of a wide range of clinical disorders that together cover a great deal of the testing done by clinical laboratories.

The first part of the book is divided into three chapters: Clinical Laboratory Utilization: Rationale; Clinical Laboratory Utilization: Implementation; and Consulting as a Professional Role for the Clinical Laboratory Scientist. The first chapter introduces the reader to the issues surrounding proper utilization of the clinical laboratory and how clinical appropriateness and practice guidelines are replacing standing orders and routine testing. The second chapter explores the value of expanding the role of the CLS to include assisting clinicians in the proper utilization of the laboratory. The third chapter delves into the specifics of how and where a CLS consultant could be utilized and the basic competencies and responsibilities of the CLS consultant.

The remaining 66 chapters are located within the 16 sections that make up Part II of the book. The first 10 sections, composed of 46 chapters, cover disorders of the cardiovascular, pulmonary, renal, gastrointestinal, hepatobiliary, endocrine, reproductive, neurologic, hematologic, and immune systems. Each chapter focuses on a specific clinical problem and includes discussions of etiology and pathophysiology, clinical manifestations, laboratory analyses, treatment, and at least one case study. For example, the section “Cardiovascular Disorders” has four chapters that focus on the clinical issues associated with Myocardial Infarction and Atherosclerotic Heart Disease, Infectious Cardiomyopathy, Hypertensive Disorders, and Heart Failure. The final 20 chapters are contained within six sections covering Tumor Markers, Infectious Diseases, Nutritional and Metabolic Disorders, Toxicology and Drug Monitoring, the Neonate, and Geriatrics. The authors seem to have done a good job in covering those clinical areas from which many of the questions posed to the CLS will arise.

I found this book to be very well written and easy to read and use. It has executed extremely well its approach of starting with understanding the clinical problem or issue and then moving to the laboratory tests most appropriate to answer the clinical questions involved. I believe this book may be one of the best single resources published to date for the CLS who desires to understand how properly utilized laboratory tests fit into the overall scheme of clinical diagnosis and treatment.

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Each new century, pundits bemoan that there is little left to learn about the universe in which we live. As we enter into the next century and millennium, this book is a reminder that such notions have historically been wrong. In 1900, no one foresaw Einstein’s theory of relativity, atomic fusion, DNA, antibiotics, computers, continental drift, aviation, the invasion of space, undersea exploration, and the harnessing of electromagnetic radiation in communications. In 1800, no one forecast the achievements of Darwin and Pasteur or the discovery of the atom, radiation, thermodynamics, and the gene.

Sir John Maddox (he was knighted in 1994) is Editor Emeritus of Nature, a position providing an excellent background for this undertaking. He writes in a plain, relaxed, enjoyable style and first takes the reader through a compact history of science as he sums the discoveries to date. These he groups primarily into two categories: the universe and the origins of life.

Advances in astronomy in the 20th century include Hubble’s documentation of the “red shift” as an “apparent velocity” of stars, suggesting to many astronomers an expanding universe; Gamow’s “big bang” theory of its origin; the detection of a microwave background throughout the universe; and the discovery of quasars, black holes, neutron stars, and the clustering of galaxies. In particle physics, the stable of baryons (protons and neutrons) and hadrons (nuclear matter) has grown as more properties, including spin, “color”, and “charm”, have been invoked for their classification.

Major questions proposed by Maddox for the next century include the amount of missing “dark matter” in space, unification of gravity and quantum mechanics into a “theory of everything” (including the “graviton” and the photon), and whether there are more universes beyond the one we know! A newer, more comprehensive mathematics will be needed to deal with these questions. Clinical chemists will ally more closely with Maddox’s reflections on biology. He credits life as originating 3.8 billion years ago, only 0.7 billion years after the origin of Earth. The universality of life on Earth—how