epidemiologists and to think about mechanisms of action related to colorectal carcinoma. Chapter 5 continues to explore the theory of carcinogenesis for colorectal cancer in humans. Of note to the oncologist is an interesting discussion of drug sensitivity for a disease that has been refractory to chemotherapeutic agents.

Chapter 6 examines the role of oncogenes and tumor suppressor genes involved in colorectal carcinoma which leads to the inevitable application of this knowledge for diagnosis and screening considered in Chapter 7. The clinician may be disappointed by the brevity of the review for early diagnosis and treatment in this chapter, but the information presented is certainly worthwhile for a quick, concise picture. The last chapter leaves us to ponder the role of the molecular biologist and the knowledge gained through scientific research.

Colorectal Cancer: A Scientific Perspective is recommended as a concise, informative, and practical review which will further the understanding for those with a clinical or research focus on colorectal cancer.

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TUBERCULOSIS: A COMPREHENSIVE INTERNATIONAL APPROACH. Edited by Lee B. Reichman and Earl S. Hershfield. New York, Marcel Dekker, Inc., 1993. 792 pp., illus., $195.00.

This book, which has a publication date of 1993, is especially timely as there has been a renewed interest in tuberculosis in the medical as well as the lay community. Between the immediate post World War II period and the early 1980's, reports about tuberculosis in the United States and other industrialized countries generally contained good news. There were new, effective drugs, greater understanding of the epidemiology of tuberculosis, and a logarithmically declining incidence of new cases. Since the mid-1980's, however, there has been an increase in the incidence of new cases: tuberculosis in patients with AIDS, tuberculosis in the homeless, and tuberculosis resistant to many and even all anti-tuberculosis antimicrobial agents. In the past two years, along with a resurgence of tuberculosis, there has been an increase in medical review articles on the subject, discussions of tuberculosis in the popular press, and renewed research efforts. This up-to-date book is noteworthy for covering all of these important issues and, in addition, for providing an excellent background on the history and biology of tuberculosis.

This is a multi-authored text with thirty-two chapters and fifty contributors, most of whom are well-known as authorities in their particular area. In the first part of the book, seven chapters of background include reviews of the history, epidemiology, bacteriology, and pathogenesis of tuberculosis. Following this are eight chapters on practical aspects of tuberculosis, such as skin testing and other diagnostic methods, and various aspects of the management of cases. The third section may be of greatest interest to those who already have a good background and experience in tuberculosis treatment because the focus is on special issues, such as tuberculosis in children, drug resistance, tuberculosis in those with AIDS, in the elderly, in the homeless, in the inner city, in correction facilities, and in other special populations. In the last section of the book, six chapters deal with tuberculosis control in the U.S. and in the rest of the world. These chapters are written by experienced teachers and investigators and the quality is good. Many chapters that deal with management have recommendations clearly listed. There are many tables and diagrams, some which include data from key studies, but many are interpretive and are included to pro-
vide concise information such as the recommended treatment schedules, sample forms for registering patient data, approaches to analyzing noncompliance in treatment programs, usefulness of different methods of identification of *Mycobacterium tuberculosis* from clinical specimens, hypotheses on the spread of tuberculosis, and many others. The number of references vary from some chapters with 1–2 pages of references to chapters with 10 or more pages of references. Most of the references are from the 1980's or before, but there are a small number of references with 1991 and 1992 dates.

This text is highly recommended for clinicians who require considerable practical information about tuberculosis. It is not the ultimate text for those seeking information on the history or pathogenesis of tuberculosis; whole books are available on these and other related subjects. Specialists in pulmonary medicine or infectious diseases, or libraries used by primary care and specialist clinicians will find this a text that includes all the practical information about tuberculosis they need. Those who have only occasional need for information about tuberculosis may be put off by the price, listed as $195. This circumstance is unfortunate because these individuals would also benefit from the information about the changing epidemiology and the international face of this disease, material which is usually lacking in general medical texts.

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**ANIMAL CELL CULTURE: A PRACTICAL APPROACH.** Edited by R. Ian Freshney. New York, Oxford University Press, 1993. 329 pp.

Since the publication of the first edition of this book in 1986, the wealth of information concerning the *in vitro* culture of animal cells has grown not only with the measured march of micro evolution, but has made larger leaps in the development of particular new species of techniques and approaches. The newest volume from this accomplished culturist reflects this growth with widespread updating and substantial revision of several chapters. Many may know Freshney by his widely read *Culture of Animal Cells: A Manual of Basic Technique*. This book, in its most recent, 1987 incarnation, is a detailed, step-by-step guide to cell culture from designing and equipping a tissue culture lab to acquisition, maintenance, and characterization of primary cultures and cell lines. Detailed experimental protocols are the rule. In contrast, and despite the similar title, *Animal Cell Culture: A Practical Approach* forgoes the detail of basic techniques for a sophisticated and complete analysis of theories of cell culture with an additional emphasis on methods of cell analysis. In the chapter "Introduction to basic principles" he assumes that the technical aspects of cell culture are known to the reader and focuses instead on considerations of choice of culture system. Readers interested in conceptual details and protocols introduced here are referred throughout to specific subsequent chapters, increasing the usefulness of the book as a reference tool.

The following chapter covers the state-of-the-art growth of cells in serum-free, chemically defined media. The importance of eliminating variables introduced by inconsistent serum stocks, as well the economic advantage of avoiding serum, are discussed. Protocols and tables inform the user's choice of proven media components and concentrations for specific cell types. Particularly commendable is the author's discussion of current thinking on the rationale for each requirement.

Scale-up of culture systems is the subject of chapter three. Industrial laboratories will find the comparison of various culture systems for large scale culture exhaustive. "Small