and mid-brain, disorders of the hypothalamus, Kleine-Levin syndrome, Prader-Willi syndrome, diffuse organic neurologic disorders, and rare disorders such as African sleeping sickness. The author also lucidly describes the disease processes of common disorders such as Parkinson's disease, and how the disease impacts sleep. This aspect of the book would be highly useful to a respiratory therapist to provide optimal care of patients with secondary sleep disorders that arise from neurologic diseases and other medical disorders. This section also includes a nice description of how sleep can influence respiratory conditions, including asthma, chronic bronchitis, chronic obstructive pulmonary disease, cystic fibrosis, and parenchymal lung diseases.

The book is very well organized from a topical standpoint, though sometimes the subheadings and the subsubheadings are difficult to distinguish from each other. The subsubheadings are in italics, which I think readers will find helpful, especially in the chapter on motor disorders, where it is not always clear whether clinical features are specific for one disease or many. The references are up to date into 2005. An example is in the first chapter's review of the classification of sleep disorders, which was released in April of 2005. The index is carefully cross-indexed, which makes it very easy to find a diagnosis or symptom and find the appropriate material in the text.

In conclusion, **Sleep Medicine: A Guide to Sleep and Its Disorders** is an up-to-date, easy-to-read, well-organized text that examines sleep and wake mechanisms and frequent presenting symptoms of sleep disorders. It will serve as a reference for respiratory therapists, especially when patients with different sleep disorders come to the laboratory for evaluation. Although it does not focus on the technical aspects of sleep medicine, it does provide an easy-to-understand introduction to the spectrum of sleep disorders.

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Cystic Fibrosis in the 21st Century. Andrew Bush, Eric WFW Alton, Jane C Davies, Uta Griesenbach, Adam Jaffe, editors. *Progress in Respiratory Research*, volume 34, CT Bolliger, series editor. Basel, Switzerland: S Karger. 2006. Hard cover, illustrated, 329 pages, $180.

This is an imperiously named textbook, considering that the 21st Century was only 4 years old when these chapters were written. But once you get past that hyperbole and into the book, you will find it beautifully written and well organized. Many of the world's experts have been brought together to produce this superb reference.

There are 40 short and well-referenced chapters, which cover all aspects of the science and clinical care of the patient with cystic fibrosis. Each chapter provides a concise and up-to-date review. However, only Chapter 38 has direct clinical relevance to the practice of respiratory care. That chapter is a "must-read" for all respiratory therapists who care for patients with cystic fibrosis.

The book is well illustrated and comprehensive. The first half of the book will be a hard slog for readers who are not basic scientists. Unfortunately, some of the clinical chapters are not quite as up to date or accurate as is the basic-science half of the book. As an example, Chapter 23, on lung transplantation, has a number of inaccuracies in its explanation of the pathogenesis of cystic fibrosis lung disease This book best serves as a reference text. The research directions are stated clearly, and for the most part the clinical recommendations are sound and evidence-based. This book is an outstanding reference for scientists and will be of interest to physicians who care for patients with cystic fibrosis, but it will be of passing interest for respiratory therapists who primarily provide clinical care for persons with cystic fibrosis.

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Lung Surfactant Function and Disorder. Kaushik Nag, editor. *Lung Biology in Health and Disease*, volume 201, Claude Lenfant, executive editor. Boca Raton, Florida: Taylor & Francis. 2005. Hard cover, illustrated, 493 pages, $199.95.

Volume 201 of the *Lung Biology in Health and Disease* series is devoted to lung surfactant function and disorder. It covers all major areas of research about lung surfactant, including chemistry, biochemistry, physics, genetics, computer science, physiology, and medicine. The book has 19 chapters and 3 parts. Each chapter is written by several well-known investigators, and the authors hail from many parts of the world.

Part 1 consists of chapters on the composition, structure, and function of lung surfactant. Surfactant phospholipids composition in children changes both with postnatal development and with disease. The first part of Chapter 1 describes surfactant phospholipids molecular species in adult lungs, and during fetal and postnatal development. The last part of this chapter discusses modification of surfactant phospholipids molecular species in various lung diseases. Chapter 2 discusses surfactant composition, synthesis, and secretion. This chapter emphasizes how temperature regulates the biophysical properties of surfactant and discusses in detail the factors that regulate secretion of surfactant, such as ventilation, phorbol esters, vasopressin, lipoproteins, and adrenergic and cholinergic agonists. Both Chapters 1 and 2 are valuable for learning the basics of surfactant.

The next 2 chapters are dedicated to hydrophilic surfactant proteins, surfactant proteins A and D. The discussion covers detailed structure, tissue distribution, and function of these proteins in the context of other structurally related proteins such as mannose-binding lectin and the first component of complement C1q. There is specific emphasis on various domains of these proteins, which, after binding to surfactant and microbial membranes and alveolar and inflammatory cells, perform different functions, ranging from protection against alveolar collapse to innate host defense. Several receptors and/or binding proteins for surfactant proteins A and D are also discussed.

Chapter 5 addresses the importance of hydrophobic surfactant proteins B and C: their evolutionary origin, biological and clinical importance, and structure-function relationships. All 3 chapters on surfactant pro-

teins are focused and well-written, although they could be shortened by combining the receptor sections of Chapters 3 and 4, as both these proteins share several receptors.

Part 2 has 9 chapters, the first 5 of which are devoted to the biophysics and molecular mechanisms of surfactant, with emphasis on biochemical and biophysical analysis of surfactant with modern technology. There is a description of computer-simulation methods to study lipid monolayers. These chapters will be valuable for biochemistry and biophysics researchers. However, the legends of some of the figures in these chapters are too brief, and abbreviations in the figures are not defined in the figure legends, which makes it difficult to get the message from the figure without reading the related chapter text.

The next 4 chapters of Part 2 focus on the synthesis, structure, and function of surfactant proteins B and C, studied using transgenic and gene-targeted mice. These very informative chapters describe the role of surfactant proteins B and C in the structure and function relationship of pulmonary surfactant. However, the reason these chapters are included in Part 2 is not clear to me. At least some of these chapters (eg, Chapters 13 and 14) could have provided better flow in the subject matter if included after Chapter 5 in Part 1, which discusses the biological and clinical importance of surfactant proteins B and C, after addressing structural and functional properties of surfactant proteins A and D in previous chapters. I also found several aspects of the figures in this section inadequately described in their legends.

The third and last part of this book is made up of 5 chapters devoted to various conditions associated with surfactant dysfunction. The first 3 of these chapters describe the role of lung surfactant in acute lung injury (ALI), asthma, allergy, and inflammatory lung diseases. Chapter 15 focuses on ALI and is very well written, except that on page 364, the alterations in the metabolism and functions of pulmonary surfactant recovered from patients with ALI are not presented with clarity. The changes in various parameters during ALI presented in the table on page 364 are correlated with the schematic in Figure 15.2, the legend for which lacks adequate details. Chapter 16 focuses on surfactant alterations in asthma and modulation of various immune-cell functions in allergic inflammation. The chapter also suggests therapeutic use of surfactant in asthma. This chapter is informative and will be valuable for both physicians and researchers.

The next chapter addresses the use of surfactant in inflammatory lung disease. The writing and editing of this chapter were poor. For example, the last line of the introduction indicates that the role of surfactant in allergic lung disease is reviewed in Chapter 9, but Chapter 9 addresses surfactant molecular perspectives from computer simulation studies; the role of surfactant in asthma and allergy is covered in Chapter 16. This mistake was repeated on line 1 of page 415. Also, on page 407 it incorrectly states that Chapters 5 and 15 review the role of surfactant proteins A and D in agglutination and presentation of bacterial, fungal, or viral antigens, and in the control of the immune-defense system; those chapters actually address structure-function relationships of surfactant proteins B and C and the physiological importance of surfactant dysfunction in ALI. Furthermore, page 412 describes a study that investigated effects of surfactant therapy on oxygenation in "infants" age 1 month to 13 *years*. Presumably the authors meant "infants and children."

Chapter 18 discusses alterations in lung-surfactant function caused by reactive oxygen species. This chapter is well-organized. It describes the sources of reactive oxygen species in the lung, the enzymatic and non-enzymatic antioxidant defense mechanisms in the lung, the biochemical and biophysical changes caused by reactive oxygen species in surfactant, and the pathological processes associated with these changes. The writing style is friendly, and I think this chapter will be valuable to both researchers and physicians interested in lung physiology and pathology.

The final chapter is directed mainly toward physicians, but researchers can equally benefit from it. It focuses on surfactant therapy in various disease conditions, such as the neonatal and adult respiratory distress syndromes. The chapter stresses the mechanism of action and toxicity of herbal oil surfactants, which in developing countries may be a treatment of choice for neonatal respiratory distress syndrome. The chapter also addresses interactions of surfactant with environmental pollutants, the status of surfactant in pulmonary tuberculosis, and improved delivery of surfactant preparations to the lung.

In summary, the book is comprehensive and covers all major areas of surfactant study, but some of the chapters are poorly edited, and the overall organization of some chapters is loose. For example, not all the chapters include summaries and descriptions of future research directions. The problems with organization and editing overshadow some of the text's good points.

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