

and expanding the objectives of the book, is combative, controversial, and editorializing. It was astonishing to read that, in the experience of that chapter's author, "40–50% of malignant mesotheliomas are spontaneous neoplasms with no definable etiologic linkage to asbestos" (p. 737). Many in the community will, as do I, respectfully disagree.

In addition to the usual introductory chapter on lung anatomy, this book has a useful, brief summary of chest radiology and explanations of common surgical techniques and biopsy procedures. Many specific items include useful illustrations of the associated radiologic findings and the gross appearance of specimens.

The illustrations were, for me, the most appealing part of the book, as they should be, in view of the book's practical emphasis. In multi-author books, some heterogeneity is difficult to avoid, but in general the chapters are lavishly illustrated. Many of the items depicted are rare and images are not easily found. Their availability here will be an invaluable resource to pathologists, pulmonologists, residents, and even medical students. I suspect, however, that neither the printed images nor the digital reproductions in the accompanying CD do full justice to the original micrographs. In addition to trying it out myself, I lent the CD to a photograph technician and to 3 residents of my department. One of us reported that it was easy to use, another one gave up in frustration, and three had some difficulties but easily overcame them to view the contents. This is not unlike the experience with other digital media on the market. The CD should be more user-friendly in future editions.

All the chapters are followed by a fair number of key references that will suffice to start a good literature search. The book is well printed, with pleasant and clear fonts, and the index—a crucial element of a consultation book—is good and lived up to my expectations almost every time I tried it.

In short, this is a good book that is needed and will be helpful to many. In my opinion, its outstanding collection of histologic, gross, and radiologic illustrations of common, uncommon, and very uncommon conditions and tumors is its greatest asset.

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**Thurlbeck's Pathology of the Lung**, 3rd edition. Andrew M Churg MD PhD, Jeffrey L Myers MD, Henry D Tazelaar MD, and Joanne L Wright MD. New York: Thieme Medical Publishers. 2005. Hard cover, illustrated, 1157 pages, \$249.95.

With the large number of excellent textbooks that currently address pulmonary pathology, one could question whether another text in this field is necessary. In the case of **Thurlbeck's Pathology of the Lung**, the answer is clearly and enthusiastically *yes*.

This is the third edition of this now classic text, and, in my opinion, the best. The back cover refers to the text as the "bible" of pulmonary pathology, and this at first might appear to some to be an audacious claim. Yet, if by "bible" one means a source of truth that can be turned to repeatedly for new insights, then this metaphor is wholly appropriate. As a practicing pulmonary pathologist, my bookshelf includes virtually all of the currently available texts of lung pathology. Most of them are collecting dust and taking up space. But when I need to locate a useful fact or reference, I reach for **Thurlbeck's**.

It has been some time now since this book's original author, "Whitey" Thurlbeck, passed. But the current editors continue to produce a text as authoritative as his was. The list of contributing authors is a veritable "Who's Who" of pulmonary pathology. Each contributor is an internationally recognized expert in his or her field. The result is that each chapter is filled with a wealth of evidence-based information, and written in the voice and from the perspective of an established expert.

Within its thousand-plus pages, certain chapters deserve special mention. De Paape's chapter devoted to developmental disorders summarizes a subject that can be challenging for the pathologist who primarily encounters adult disorders. The text includes chapters on lung anatomy co-authored by Kuhn and Wright. Wright has improved on Thurlbeck's chapter on quantitative anatomy, a subject of special interest to Thurlbeck. The chapters on basic lung structure ought to be required reading for training in pulmonary pathology; I highly recommend it, for its content and clarity, to both practicing pulmonologists and thoracic surgeons. Churg's chapter on how to handle biopsy specimens and Wright's chapter on "special techniques" are excellent contributions on

subjects with which the general surgical pathologist should be acquainted.

As a pathologist with specific expertise in the pathology of pulmonary infection, I found the chapters by Procup and Tazelaar of particular interest. The chapter on tuberculosis and other mycobacterial infections may be the best presentation I have seen in a pathology textbook on this important subject. The chapters on fungal, protozoal, and helminthic diseases, by Sobonya and Fraser, are also expertly presented.

A particularly outstanding contribution is the chapter on interstitial lung diseases, by Myers. Whereas this is a subject that at times appears to be continuously in flux, Myers concisely summarizes the state of the art with respect to the categorization of interstitial lung disease and succeeds in dispelling the confusion that at times seems to pervade the field.

Hogg's chapter on pulmonary edema synthesizes the pathophysiology with the morphologic changes that accompany changes in alveolar-capillary permeability. An outstanding chapter by Churg and Green reflects 2 lifetimes of investigation of occupational lung disease.

The aforementioned chapters are merely a sampling of the consistently high-quality presentations in this text. Others, including the chapters on vasculitis and pulmonary hemorrhage, by Youssef, and the detailed reviews of benign and malignant pulmonary neoplasia, by Cagle and Tazelaar, are as noteworthy. Elsewhere, Cagle nicely explicates and illustrates the specific issues encountered in lung-transplant pathology. Finally, the text is capped off by Churg's approach to the disorders of the pleura and by a must-read chapter on pulmonary cytopathology by Amy.

Reading this enthusiastic review, the reader may rightfully ask whether this text has any deficits. Unfortunately, the answer is yes. The one glaring problem that is certain to cause some disappointment is that the (copious) illustrations are all in black-and-white. The emphasis on morphologic images in the practice and training of diagnostic surgical pathology may mean that some readers who look to this text for assistance in establishing a diagnosis may find the black-and-white reproductions inadequate, especially since some of the recent competing lung pathology texts include beautiful color illustrations. For this reason, this text may appeal more to pathologists who have already established expertise in

lung pathology, and who are not so much seeking assistance in diagnosis as deepening their knowledge of lung disease. From this perspective, the text is an unqualified success. At this stage in my career, I, for one, increasingly find myself far less interested in texts that abound with color images. However, recognizing that black-and-white may not grip the imagination of many readers, it is unfortunate that the publisher of this otherwise beautiful text did not opt to enhance its beauty with color images. Yet, having admitted this substantial flaw, if I had only one text to recommend to others, or to pore over for my own delight, **Thurlbeck's Pathology of the Lung** would be the one.

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**Air Pollutants and the Respiratory Tract**, 2nd edition. W Michael Foster and Daniel L Costa, editors. *Lung Biology in Health and Disease*, volume 204, Claude Lenfant, executive editor. Boca Raton, Florida: Informa/Taylor and Francis. 2005. Hard cover, illustrated, 447 pages, \$199.95.

The health effect of air pollutants is increasingly recognized as an important medical issue that primary-care and specialty physicians should become more cognizant of when evaluating patients with cardiovascular and respiratory complaints. **Air Pollutants and the Respiratory Tract** is an excellent compilation that elegantly summarizes current scientific understanding of the health effects of air pollutants. The book is designed to support the editors' paradigm that epidemiologic and basic research has adequately determined the toxic effects of air pollutants on the heart and lungs. International experts were selected to comprehensively address specific research subjects to support the editors' hypothesis.

This comprehensive review is divided into 12 chapters. The first chapter summarizes what we have learned from epidemiologic studies about the effects of air pollution on health. The authors review several studies that present mortality data associated with air pollution. They also review economic issues pertaining to the relationship between respiratory disease and air pollution, in the context of increased hospitalizations, emergency-room visits, and respiratory exacerbations that require in-

creased medication. There is also discussion of susceptible subpopulations at risk from air pollution.

Chapter 2 discusses particulate dosimetry in the context of respiratory anatomy and physiology, which is intended to give a better understanding of exposure dose-response relationships. The basic structure of the respiratory tract is reviewed in the context of how particles are deposited in the large, medium, and small airways. The authors review how demographic features such as age and gender affect particle deposition, and they also discuss particle clearance.

Chapter 3 reviews the bioavailability of particle-associated air pollutants and its relationship to cardiopulmonary injury. Useful tables summarize biochemical composition of air pollutants in various cities throughout the world and help explain particle-associated lung injury. There is extensive information on particulate matter, metals, and organic compounds, and discussion of the mechanisms of particulate-matter-injury to the respiratory tract and cardiovascular system.

Chapter 4 addresses genetic susceptibility to air-pollution-induced cardiopulmonary disease. Classic genetic models are discussed and pulmonary and cardiovascular studies are presented to support these models, including several studies of genetically modified mice.

Chapter 5 addresses how air pollutants interact with airway epithelial surfaces and emphasizes the importance of the epithelium as the first-line defense against the external environment. Here the authors discuss the primary function of epithelial cells in the "United Airways" (nasal passages, nasal pharynx, larynx, tracheal-bronchial tree, and lower respiratory tract) and how they interface with the environment. The authors cite several studies that used animal models to study how air pollutants affect the respiratory epithelium in both normal and disease states.

Chapter 6 addresses disease irritant agonists and air pollutants and reviews neurologic mechanisms that may mediate respiratory and cardiovascular responses to air pollutants. The authors discuss general characteristics of sensory nerves in the upper and lower respiratory tract, mechanisms of sensory-nerve activation, and the role of the central and autonomic nervous system. They further elaborate on how airway and cardiovascular responses are initiated by stimulation of airway mucosal sensory nerves.

Specific examples of irritant stimuli—such as ozone, sulfur dioxide, and nitrogen oxide—that affect sensory nerves in the respiratory tract are discussed in detail. The authors conclude that, in animal models, C fibers protect the respiratory system from injury by air pollutants, but more work is required to determine if this is true in humans.

Chapter 7 addresses the role of signal transduction and subsequent cytokine expression in particulate-matter-induced airway remodeling. Again, this chapter focuses mainly on particulate matter, which significantly increases morbidity and mortality in patients with pulmonary and cardiovascular disease. The authors discuss in great detail the complex mechanisms of cytokine signaling in the airways in response to particulate-matter exposure, and they emphasize the complexity of this response.

Chapter 8 describes the health effects of chronic exposure to oxidant air pollutants. Here the authors discuss in great detail the sources and distribution of these air toxins and the health effects of specific oxidant air pollutants, such as ozone and constituents of particulate matter, such as transition metals, organic compounds, and nitrogen dioxide. The chapter also reviews epidemiologic studies of their effects on several disease states, including asthma, cancer, and cardiovascular disease.

Chapter 9 addresses pulmonary toxicity of occupational exposures to fibers and nanoparticles such as silica, asbestos fibers, and insoluble particles. Numerous animal studies of lung injury by these inciting agents are reviewed to support the authors' assertions.

Chapter 10 addresses the important issue of biological airborne pollutants, which include viruses, bacteria, fungal spores, and plant materials. The author clearly defines what constitutes a bioaerosol and describes from where they emanate and how they are disseminated. Hypersensitivity disease states associated with bioaerosol exposure are reviewed in thorough detail.

Chapter 11 discusses the health effects of emissions from combustion of coal, petroleum products, (eg, diesel, fuel oil, gasoline), vegetation and biomass (eg, wood smoke, forest fires, agricultural burning), cooking emissions, and tobacco smoke.

Finally, Chapter 12 discusses air pollution in the context of public health safety and provides compelling reasons to implement regulations to improve outdoor air