The History of Tropical Neurology: Nutritional Disorders. By George W. Bruyn and Charles M. Poser. Canton, Massachusetts: Science History Publications, 2003, 144 pp. $24.95.

The authors state in the preface that tropical neurological disorders are not diseases of particular latitudes, but of particular deprivations. These diseases occur in the tropics because war, famine, poverty and oppression occur in the tropics. They point out that neurological diseases common in the tropics today were once common everywhere. However, this opening view does not serve as a platform for an incisive political history of nutritional disorders. This slim book is not overtly political, nor does it even take an historical approach. Rather, the prefatory remark seems intended to justify the book’s unfortunate eclecticism. The text reads more like a series of brief biographical sketches of physician-scientists, interspersed with asides from the authors. These asides vary from their opinions on whether Eijkman ought to have won the 1929 Nobel Prize to possible etiologies for poorly understood conditions to flickering insights into the intellectual history of these diseases. This melange is collected around six neurological disorders related to improper nutrition: beriberi, burning feet, endemic cretinism, tropical ataxic neuropathy, neuro-lathyrism, and pellagra.

Readers searching for coherent narratives or explanatory frameworks will remain frustrated. Paragraphs leap between centuries and continents. The story the authors are most interested in telling is the elucidation of the etiologies of these diseases by the Western world in the late 19th and early 20th centuries. However, detours into contemporary Japanese medicine are not uncommon, nor are glimpses of ancient China, India, and Greece, World War Two POW camps, and a host of other times and places.

Sustaining the jetlagged reader is the substantial science. The excellent bibliographies attest to the enormous amounts of research the authors conducted on the scientific histories of these diseases. While some familiarity with these diseases is a prerequisite, the authors provide thorough summaries of research findings. Their chapters function best as comprehensive review articles. They also highlight where questions remain, indicating further areas where more research is needed.

Unfortunately, the well-researched scientific history is presented in a disorganized fashion, obscuring the development of the scientific ideas. When turning from description to explanation, the historical analysis is largely empty; occasional sentences merely suggest the fertile possibilities of a history of tropical neurology. The authors assert, in various chapters (albeit somewhat inconsistently), that the dominance of the Koch-Pasteur germ theory substantially delayed the discovery of the vitamin theory. While plausible, much more could, and should, be said about the particulars of this problem. Similarly, the authors briefly note the importance of the military interests in investigating these diseases. Again, much more could be said. The true fruits of their historical research are some of their anecdotes. For example, a pivotal moment in discovering the dietary link to beriberi was when Eijkman’s military cook refused to serve polished military rice to ‘civilian hens’.

A review of this book would not be complete without noting the ubiquitous portraits graceing almost every page. The authors’ respect for the physician-scientist is best seen not from the text but from the hundreds of photo and drawings they included. The book resembles a Who’s Who of Scientists of Nutritional Disorders, from Paracelsus to Ben Osuntokun (whose work was important in linking the cassava plant to tropical ataxic neuropathy).
Credit must be given, though, for merely writing the book, since it is in an area of research where little is known and very little is written. Given this book’s weaknesses as a scholarly work, this book still would serve well as light reading for physicians interested in knowing a bit more about neurological diseases in the tropics, or, with its wide pages and numerous illustrations, as a nice coffee table book, as well as a starting point for a more complete historical study.

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Lab Math: A Handbook of Measurements, Calculations, and Other Quantitative Skills for Use at the Bench. By Dany Spencer Adams. Cold Spring Harbor, New York: Cold Spring Harbor Laboratory Press; 2003, 275 pp. $49.00.

Like other manuals in the Cold Spring Harbor Laboratory (CSHL) series, notably At the Bench: A Laboratory Navigator, Lab Math by Dany Spencer Adams continues the tradition of excellence in presentation and organization.

Presentation-wise, I love the spiral binding: it makes flipping through pages casual and easy to reference with post-its. On a bookshelf, its mid-range size makes the text easy to store and spot. Hopefully forthcoming books in the CSHL series will follow this presentation design because it’s well thought out and user friendly.

In terms of organization, Adams starts by assuming the reader has no or little research experience. Adams begins with a numbingly detailed chapter, “Measuring, Counting, and Otherwise Quantifying,” that explains how to use a balance, pipette, and hemocytometer. Perhaps this chapter would be better used as a supplement to a quick demonstration given by a fellow lab member. Thereafter, the the material gets more interesting. What’s remarkable about Adams’ writing is that, despite the plug-and-chug nature of some of the equations listed, the author does a splendid job of explaining the physical consequence of each term in equations such as the Beer-Lambert law. He explains how the terms matter in an experiment without going into physical chemical minutiae.

Adams covers the mathematical equations concerning the trinity of DNA, RNA, and Protein, with lean explanations. From estimating DNA melting temperature to determining molecular weight using gel filtration chromatography, Adams provides a thorough review for the molecular biologist. And for the techniques that I don’t regularly use such as FRET for proteins, I came away with a greater appreciation.

The seventh chapter, “Statistics and Reports,” covers rudimentary statistical concepts such as confidence limits and t-tests. By the chapter’s end, I felt statistics in a book titled Lab Math had received a cursory treatment. The chapter needs beefing up, particularly in the areas of statistical applications and misuses. Finally, Chapter Eight is a romp through interesting factoids. Did you know that “yotta” is 10 to the 24th power and “yocto” is 10 to the -24th power?

In sum, “Lab Math” is a great reference tool that deserves a place in the bookshelf of the beginning molecular biologist.

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Immunology: A Short Course, Fifth Edition. By Richard Coico, Geoffrey Sunshine, and Eli Benjamin. Hoboken, New Jersey: Wiley-Liss; 2003, 361 pp. $49.95.

When I picked up Immunology: A Short Course, I was a little skeptical. Not because the subject is immunology, a topic which I find fascinating, but because immunology is an incredibly complex, difficult subject to understand, let alone teach. As a student of immunology, I was