Essentials of Gross Anatomy - 2003

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Preface

> If you yourself are the author/teacher, and your presentation is after all largely self-explanatory . . . you should dispense with introductions and get on with the job.*

I am giving myself dispensation to write a preface to this book because it is characterized by features that are not self-explanatory. The title "Essentials of Gross Anatomy" begs the question of how I decided which facts were essential. Then there arises the second question of why I chose to present such "essentials" in the manner that I did, rather than in some other way.

This book is directed to students of the health sciences who must either learn the essentials of gross anatomy for the first time or refresh their flagging knowledge of essentials previously mastered. But how can anyone determine which facts are **essential** for a particular discipline? Personally, I am unable to choose a universal criterion for essentiality, nor would I know how to make operational any choice that was forced upon me. Rather, my concept of anatomical information essential for health practitioners has been guided by a conversation I had with a professor of surgery about a week after I arrived at Stony Brook to assume directorship of the gross anatomy course. This professor telephoned me to ask that a cadaver be set aside for use by first-year residents in his program. I asked if it was his plan that these persons practice surgical procedures on the cadaver. No, he said, he wanted the residents to review **basic** gross anatomy because their knowledge of the subject was not sufficient for them to carry on intelligent discussions about the procedures he

*This epigraph is taken from the Author's Introduction to *The Friday Book*, by John Barth, who further advises against epigraphs, prefaces, and, it goes without saying, footnotes.

wished to teach. I think we can all agree that one has failed to learn the essential facts of any subject if he or she cannot carry on an intelligent discussion with those attempting to teach yet more.

My goal in selecting material for this text, as it is in determining the content of my course, is to provide the information necessary for carrying on an intelligent discussion about human gross anatomy. The most important discussions my students have are with clinical professors who require them to know enough anatomy that they can be taught the complexities of disease and treatment. When I have done my job well, I receive visits from former students to tell me that they were complimented on the adequacy of their responses to questions posed by some clinical professor during a case presentation. When I have failed, both my students and I are embarrassed. I don't like to be embarrassed, and, I trust, neither do the readers of this book.

I find that most students can accept the view that the ability to carry on an intelligent discussion about human anatomy requires a knowledge of the names of all the major vessels, nerves, and muscles, an understanding of how organs get their blood supply and innervation, and an awareness of the movements produced or stopped by different muscles of the body. However, some of you may not appreciate that among the facts most used by clinicians are those dealing with the relationships of one structure to another. Such information is difficult to master, but I have not shirked my responsibility to include it in this text. I should add that one cannot overemphasize the value of dissection as an aid to learning relationships. This is not because dissection enables one to **see** things; atlases and prosections can fulfill that purpose. Rather dissection is so important because it forces the student to **look for** things. Learning the structure of the human body is like taking up residence in an unfamiliar city. It's nice to have a map, or even to be driven around by a friend, but you can never appreciate the city's organization until you have made repeated (often unsuccessful) attempts to find your own way.

Now I come to the question of why I chose to present the "essential" facts in one manner and not another. First, to satisfy the goal that the text should be appropriate both for an introductory course in gross anatomy and for review of previously learned material, I have chosen an organization that combines features of both the **systematic** and the **regional** approaches to the subject. The study of anatomy by systems is particularly well-suited for review. The study by regions is most frequently recommended for the uninitiated. However, even a person learning gross anatomy for the first time will find it necessary to review before examinations. One of the most frequent complaints I hear from students who have used a text organized totally by regions is that the material is so chopped-up that, at the end, they cannot piece together all the information they need to appreciate the grander pattern of blood supply or innervation to major portions of the body. By imposing a partly systematic organization on this text, I have done such "piecing together" for you. The negative consequence of my approach is that a first

reading of this book may involve some skipping about between subsections in order to cover all the topics relevant to a localized region of the body. I believe any extra effort required initially is more than compensated for by the increased value of the chosen organization for quick but meaningful review.

There are other aspects of my presentation that deserve explanation. One is that I was determined to write as I might lecture. That is, I prefer to tell an interesting story using complete sentences, some of which just promote the flow of ideas. Another is that I have tried more often to draw verbal pictures than to provide detailed illustrations. I believe that anatomy is as much a verbal as a visual science. (Others must agree, for advanced students are almost always asked to describe, not sketch, a certain region.) My own understanding of anatomy is not at all based on any skill at keeping complex three-dimensional images in my mind. Rather, I have memorized certain verbal descriptions and from them can recreate at will a simple mental sketch. As you read each of my descriptions of the path of a nerve or a vessel, try to picture this path on your own person. I have attempted to write in a way that will make this as easy as possible.

Having stated my view about the verbal nature of gross anatomy, I must acknowledge that some written descriptions are far more readily understood when the reader can refer to appropriate illustrations. There are numerous pictures in this text, but probably not enough to meet the student's total needs. I recommend that beginning students who use this book as their primary text keep an atlas handy in order to supplement those drawings I do provide with many others that are more elegant and comprehensive.

Finally, although the subject of gross anatomy requires substantial memorization, there do exist approaches that can ease this task. First, facts can be memorized most readily if they are interesting. For an audience of health practitioners, such interest is generated by pointing out how these facts are related to the symptomatology of specific diseases, to diagnostic techniques, or to treatment procedures. Whenever I knew about such matters and felt that they were particularly related to anatomical knowledge, I included them in the text. Second, there are patterns in the way the body is organized; numerous specific anatomical facts can be deduced if one understands just a few of these patterns. Because such patterns derive from developmental and evolutionary processes, I have allotted space in the text for describing some of these processes. You must not view sections on development or evolution as additional burdensome information to be memorized. I can promise you that any effort made to grasp underlying organizational patterns will yield a more lasting ability to deduce anatomy.

Staying faithless (or is it faithful?) to Barth's spirit, I would like to delay getting on with the job just long enough to acknowledge persons who have helped in the creation of this book. My perspective on the subject of gross anatomy is so closely tied to those of my professors that they deserve substantial credit for whatever is good in the text. At the University of Chicago, Dr.

Ronald Singer helped me to learn most of what I know about gross anatomy and instilled in me a love of the discipline. Dr. Charles Oxnard, now at the University of Western Australia, continuously inspired me to look beyond the facts to see the pattern. A special note of gratitude should be offered to Dr. Maynard Dewey, chairman of the department in which I have resided for the past 14 years. While Dr. Dewey's research expertise would earn him a classification as a cell biologist, his appreciation and knowledge of gross anatomy have made Stony Brook a most pleasant environment in which to work. Of course, I want to acknowledge my close colleagues with whom I share teaching chores. Believe it or not, we often have animated discussions about human gross anatomy; from these discussions, I have learned much. Particularly worthy of mention are (in alphabetical order) Mr. George Boykin and Drs. Norman Creel, John Fleagle, William Jungers, David Krause, Susan Larson, and Randall Susman. No book of this size could be created without expert secretarial assistance, for which Joan Kelly earns more thanks than would fill the pages of this book. Finally, Luci Betti is to be given all the credit for being able to convert most of my dreadful sketches into genuinely artistic renderings.

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