



Journal of Sedimentary Research

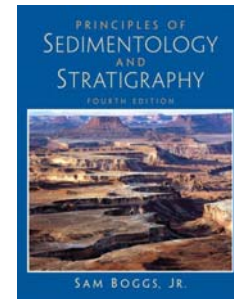
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Principles of Sedimentology and Stratigraphy (4th ed.), by Sam Boggs Jr., 2006. Pearson Prentice Hall - Pearson Education, Inc., Upper Saddle River, NJ 07458, USA; e-mail: enq.orders@pearson.com. Hardbound, xv + 662 pages. Price USD 123.80; GBP 48.99; SFR 118.00. ISBN 0-13-154728-3.



This 4th edition of the textbook by Sam Boggs Jr. is an extended and updated version of the previous one. It is a voluminous work, although it must be mentioned that this is partly due to the ample margins (for notes by students?): with “normal” margins, the book would count over 100 pages less. Can the wide margins be aimed at notes by students, indeed? That is unlikely, as the paper is thin (text and figures from the backside of the pages are annoyingly visible when reading a page) and not very suited for writing. Yet, the book must consider students as the mean readership, considering the contents that hardly anywhere go deep enough to be interesting for professionals, but that provide an almost unequalled overview of earth-science aspects that are—in one way or another—related to sedimentology or stratigraphy. And what is more, many interrelationships between processes and resulting features are made clear.

The book seems primarily aimed at US students. This can be deduced from the focus on US geology, and particularly from the stratigraphic terminology. This makes the book, unfortunately, less suitable for classes outside the US. Why should non-US students be confronted with detailed US chronostratigraphic units and with much less detailed “global” counterparts (which are, moreover, outdated because the new chronostratigraphy introduced by the International Stratigraphic Commission of the International Union of Geological Sciences are neglected, although the new stratigraphy was published long before this book appeared)? And why should US students not follow the international standards, rather than American ones (Appendix C—North American Stratigraphic Code—takes not less than 27 pages!)? It seems to me that the author has given up keeping pace with recent developments. This also becomes clear in his (inconsistent) use of measures and symbols: miles instead of kilometers, the symbol “sec” for second (which should be “s”), and even the horrible American use of the abbreviation “yr” for “year”, where it should be “a” (annum). One might thus get the impression that the author adheres to some kind of (American) “splendid isolation” in the same way that the British politicians did a century ago.

There are more—and more serious—shortcomings that indicate that Sam Boggs (although presenting himself as Sam Boggs, Jr) is, at his age, no longer capable of keeping up with modern time. The book contains, for instance, a very useful series of appendices, one of which (Appendix E) lists “Web Sites Pertaining to Sedimentology and Stratigraphy”. Very useful, indeed. But not if the data are outdated. The appendix mentions, among other data, 9 publishers of sedimentological and stratigraphic journals and publications. One of them is the—to all readers of this book review—well known Society for Sedimentary Geology (SEPM). According to Boggs, our society publishes the “Journal of Sedimentary Petrology”. As there exist only three large international journals on sedimentology, one would expect that the author of a book on this subject would be aware that the journal changed its name into “Journal of Sedimentary Research” already over 10 years ago (1994).

The book contains several of such unfortunate (and unnecessary) shortcomings. The author is a bit sloppy in his use of chronostratigraphic vs. lithostratigraphic terms (but correct use becomes rare everywhere), but there are more shortcomings that seem rather the responsibility of the publisher. Some landscape-size tables (e.g. 6.2 and 12.22) contain texts that are top-down when the book is held in normal position; the unavoidable typos have not all been corrected in the proof phase (even the two but last term in the index has a typo); and too many (of the relatively few) photos have not been reproduced sufficiently clearly. This holds also for some figures that seem to have been reproduced from coloured originals, and that now are vague in some parts. Finally, some illustrations have fairly childish captions; figure 2.5, for instance, reads “Photograph of” Even young authors learn that one should avoid this type of non-information, if only to avoid unduly lengthy captions.

All the above can, however, be considered as relatively marginal remarks. What about the contents? Boggs is neither an inspired nor an inspiring writer. His texts do not really invite to read parts of the book for pleasure. On the other hand, his style is clear, which is possibly the most important for a student textbook. In addition, the structure and contents of the book have some points that are so dearly missed in many other textbooks. For instance, the beginning of the book deals with weathering and soil formation, two aspects that are fundamental for both sedimentology and stratigraphy, but that are rarely found in such detail in other textbooks.

On the other hand, Boggs seems overly focused on siliciclastic sediments. In the first section (Kinds of Sedimentary Rocks) of the Introduction, he distinguishes between siliciclastic, volcanoclastic, chemical/biochemical and carbonaceous sedimentary rocks; non-siliciclastic sediments, for instance calciclastic ones, are not mentioned. It is also shown in the last section (Conclusions) of his first chapter (Origin and Transport of Sedimentary Materials), where he states: “The processes that form sedimentary rocks can be considered to begin with weathering” No attention at all for non-clastic sediments! There are also some other mistakes and omissions. An example of a regrettable mistake is that roundness and sphericity of grains are considered the same (p. 65). Regarding omissions, I think that at least some attention should have been paid to the highly intriguing research by Folk, who found in the past few years that some clays may have a biological origin (being excretion products of microorganisms).

I think that it is highly justifiable that the author has devoted somewhat over 150 pages (roughly a quarter of the space for normal text) to depositional environments. One could question, however, whether the attention paid to the individual environments is logical. Lagoonal systems, for instance, get less space (less than 4 pages) than almost all other systems, although this environment, the coasts of which are commonly densely populated, are threatened by sea-level rise and other processes; better sedimentological insight might help to overcome the problems that the population are faced with.

It is, obviously, always difficult—if not impossible—to write a truly balanced book that satisfies all readers. Boggs has in general, however, done quite well in this respect. The book is subdivided in 5 parts. Part I (Origin and Transport of Sedimentary Materials) comprises the following chapters: (1) Introduction, and (2) Transport and Deposition of Siliciclastic Sediments. Part II (Physical Properties of Sedimentary Rocks) has chapters on (3) Sedimentary Textures, and (4) Sedimentary Structures. Part III (Composition, Classification, and Diagenesis of Sedimentary Rocks) contains chapters on (5) Siliciclastic Sedimentary Rocks, (6) Carbonate Sedimentary Rocks, and (7) Other Chemical/Biochemical and Carbonaceous Sedimentary Rocks. Part IV (Depositional Environments) is devoted to (8) Continental (Terrestrial) Environments, (9) Marginal-Marine Environments, (10) Siliciclastic Marine Environments, and (11) Carbonate and Evaporite Environments. Finally, Part V (Stratigraphy and Basis Analysis) has chapters on (12) Lithostratigraphy, (13) Seismic Sequence and Magnetic Stratigraphy, (14) Biostratigraphy, (15) Chronostratigraphy and Geologic Time, and (16) Basin Analysis, Tectonics and Sedimentation. Then follow 5 Appendices: A (Form and Roundness of Sedimentary Particles), B (Paleothermometry), C (North American Stratigraphic Code), D Nomenclature of Global and North American Chronostratigraphic Units, and E (Web Sites Pertaining to Sedimentology and Stratigraphy). Where the structure of the book as an entity—with 16 chapters in 5 parts—seems well thought over (although some topics are more or less neglected: glaciomarine deposits—

including the enigmatic, astonishingly thick Proterozoic ones—do get only a few lines in the section on terrestrial (!) environments), the choice of the appendices seems a bit haphazard.

In spite of the many shortcomings of the new edition, I am nevertheless of the opinion that the book is a useful tool for mainly undergraduate students. If ever a successor of Boggs would pick up the challenge of preparing a new edition, however, much work has to be done to update the material and to adapt it for use outside North America.

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