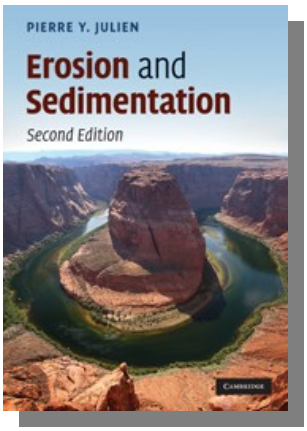

Erosion and sedimentation (2nd ed.), by Pierre Y. Julien, 2010. Cambridge University Press (www.cambridge.org). xvii + 371 pages. Hardback: price US$ 140.00, £ 80.00; ISBN 978-0-521-83038-6. Paperback: price US$ 60.00, £ 35.00; ISBN 978-0-521-53737-7. E-book: price US$ 48.00; ISBN 978-0-511-71803-8.

This is a warning for all sedimentologists! The title of this book and the beautiful front cover (a photo of the famous Horseshoe Bend in the Colorado River near Page, Arizona), promise an interesting book. Well, it may be interesting (I'll come back to that), but certainly not for the great majority of sedimentologists. How disappointed will they be when they browse through the contents! And what a shame that so many of those readers who might be interested in the contents of this book will probably never read it!

The reason for this warning is that this is not a book for sedimentologists or erosion-interested physical geographers, but rather a book for engineers. Not really surprising, because the author is Professor of Civil and Environmental Engineering at Colorado State University. This focus on engineering aspects is expressed perfectly in many places, as on page 46, where the author provides a formula regarding processes along a streamline for a homogeneous rotational incompressible fluid. Why fluid? Do streams on earth (except for some very exceptional cases) consists of anything else than water? And has any sedimentologist ever seen a homogeneous fluid? There are always inhomogeneities, for instance in the form of sedimentary particles, air bubbles, etc.

After reading the book, I came to the conclusion that the book has little to offer for the 'normal' sedimentologist, who may even miss some things. The 7-page subject index does not, for instance, contain the lemma 'Stokes', while Stoke's Law is very important for practical sedimentology. And if anything theoretical is known among sedimentologists regarding both sedimentation and erosion, it is the Hjulström diagram; but this diagram is not present. The work by Hjulström is not referred to, and his name is not even included in the index! Perhaps Hjulström was too practical ...

One should not conclude, however, that the book is of insufficient quality. There is just too large a discrepancy between the title and the expected contents. And I must admit that I think the contents interesting in some places, even though I will probably not profit from it scientifically: it is too mathematical for the type of sedimentology that I practice. Formulas are not the problem: they form an essential part of most earth-science textbooks nowadays and I have even been consulted by a publisher how to improve a book on mathematical modeling (Yang, 2008) for a second edition. While not being afraid of formulas, I think, however, that a book should be more than mere fomulas.

As this is a mathematics-oriented book, I feel that it is not inappropriate to give some numbers. The book contains over 275 numbered formulas, which often consist of 'subformulas' (e.g. 10.20a, 10.20b, 10.20c,10.20d). In addition, there are 30 tables and over 100 figures, both also often consisting of 'subtables' and 'subfigures', respectively. And this is only *without* the sections (clearly indicated by a grayish background) that contain examples, exercises, problems and case studies. These sections, which take jointly over 100 pages, also contain numerous formulas, figures and table-like data. Furthermore, there is a 3-page list of symbols, two

appendices ('Einstein's sediment transport method' and 'Useful mathematical relationships') that take jointly 15 pages and that are also full of formulas and tables. Taking into account that the book contains a list of contents, a preface, an introductory chapter, a bibliography and an index, you might wonder whether some space is still available for 'normal' text. Good question! Well, there is some text, but very little, indeed: I estimate it as some 70 pages, less than 20% of the book. This implies, in my opinion, that the book may be useful for checking calculations, but not for learning about practical and applicable aspects of erosion and sedimentation.

This does not, as I mentioned above, imply that the book is of no use at all. Although probably too theoretical for academics who work with practical sedimentological features, it may be helpful for engineering geologists who have to calculate erosion rates, for instance near bridges, or sedimentation rates, for instance in reservoir lakes. They may think this book helpful, as it gives a quite good overview (though not complete, as mentioned above) of the various theoretical aspects of sedimentation and erosion. This is reflected in the contents, which comprise, after an introduction, chapters on 'Physical properties and dimensional analysis', 'Mechanics of sediment-laden flows', 'Particle motion in viscid fluids', 'Particle motion in Newtonian fluids', 'Turbulent velocity profiles', 'Incipient motion', 'Bedforms', 'Bedload', 'Suspended load', 'Total load', and 'Reservoir sedimentation'.

This seems a quite well balanced overview, but it provides little useful information for sedimentologists, particularly field geologists. Even in Chapter 8 (Bedforms) no single bedform is depicted. The author should have given this second edition of his 1995 book another title, thus avoiding great disappointment among sedimentologists, while distinctly increasing the chance to attract the only group of potentially interested readers: engineers.

And, finally, I think that the price of the book needs attention from the publisher, certainly in a time when money becomes ever less available: an extra amount of US$ 80.00 just for a hard cover (instead of a paperback) edition seems outrageous.

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