Principles of Sedimentary Basin Analysis
(third, updated and enlarged edition)

by Andrew D. Miall, 2000; Springer-Verlag, Tiergartenstrasse 17, D-69121 Heidelberg, Germany; 616 pages, hardbound; DM 149.00, US$ 79.95; ISBN 3-540-65790-8.

The first edition of this book by Miall immediately became a classic; a second edition was soon needed. Now there is a third edition, probably eagerly awaited by many geologists who want to keep up with new developments in basin analysis, but who are unable (or unwilling?) to read all of the new literature. Miall as a 'ghost-reader'! Some of the readers who look for the newest references may be a bit disappointed: the long reference lists after each chapter hardly reflect all the reading that Miall must have done since the second edition was published. Miall apparently decided (and I think that this is justified) that about 70 pages of references in the 9 chapters are more than sufficient. The true value of his book is in the syntheses that are reflected in the various chapters.

The book is split up in two parts. The first deals with the stratigraphy and sedimentology of sedimentary basins, the second part with global controls of sedimentary basin development. It is particularly this second part that has been updated, but in the first part, chapter 6 has been entirely re-written. Chapter 6 is about sequence stratigraphy, one of the most important facets of modern sedimentology and stratigraphy.

The emphasis of the book is on stratigraphic correlation (chapter 3), facies analysis (chapter 4), sequence stratigraphy (chapter 6), and sedimentation and plate tectonics (chapter 9). In combination with the somewhat less detailed chapters 1 (introduction), 2 (stratigraphic–sedimentologic database), 5 (basin-mapping methods), 7 (tectonism and sedimentation: principles and models) and 8 (regional and global stratigraphic cycles), the book provides an almost complete overview of basin research. It is interesting that, as a rule, sufficient attention is given to now-abandoned hypotheses, such as the development of geosynclines. Such overviews will help young researchers understand older literature much more easily. Some older ideas are neglected, however, such as the original idea about sequences as the vertical successions due to logical, gradual and natural facies shifts (as already mentioned in the famous Law of Facies by Walther).

On the whole, however, it is difficult to find shortcomings. The book is pleasant reading, also because Miall frequently writes in a very personal way ("However, I disagree with [X] and [Y] (1995) regarding the use of the term ..."). This personal flavor makes the huge amount of data, the sometimes complex hypotheses, and the often also complex terminology more than bearable. It should be noticed in this context that one need not always agree with Miall's definitions (I disagree with several of them, for instance with the definition of olisthostromes, p. 45). Such different opinions do not lead to confusion, however, because one of the strong points of the book is that Miall provides clear definitions of a wide variety of processes, structures, developments, etc. Finding the definitions is easy with the help of the 12-page subject index.

Is it possible to read a 600-page book and remember what is in it? In this case, yes. A short (3-page) chapter (10: conclusions) summarizes Miall's main viewpoints on the previous chapters. All these together make the book a valuable, if not essential, resource. There are, obviously, also some shortcomings, for instance typographical errors, particularly in the reference lists. But who can prepare 70 (printed) pages of references on

a word processor without errors? And who can do the proofreading of such pages without overlooking some errors? Miall and the proofreaders could have made their task easier, however, if one reference list would have been composed at the end of the book. Now, many of the works referred to occur again and again in the reference lists of the individual chapters. This requires more printing than necessary (and thus increases the price), and makes also the search for specific references more complex for the reader who does not remember in which chapter a specific publication was mentioned. Such shortcomings should be considered negligible, however, in comparison to the fine work that Miall has done. Considering the wealth of information, the book is relatively cheap, and really a must for all earth scientists involved in basin analysis.

A.J. (Tom) van Loon
Geocom
P.O. Box 336
NL-6862 WC Oosterbeek, The Netherlands
tom.van.loon@wxs.nl