BOOK REVIEW

Fine-Grained Turbidite Systems

AAPG Memoir 72 & SEPM Special Publication No. 68

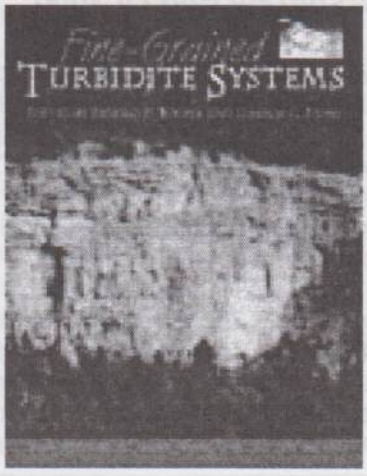
The aim of the book is to promote the fine-grained turbidite systems since it was thought that there is a lack of a comprehensive text on fine-grained turbidite systems, combined with confusion on the exact nomenclature of several terms. It was started with the field trip to the Pennsylvanian Jackfork Formation in Arkansas in conjunction with the AAPG/SEPM Annual Convention in 1997.

An excellent review of the system is well summarized in the first two opening chapters where comparison with coarse-grained system is tabulated and clearly illustrated. Twenty-six case studies were then presented, ranging from Palaeozoic cases (70%), Tertiary (15%) to modern studies (15%).

This compilation of papers is the first joint publication between two major G&G societies, SEPM – the sedimentary geology organization and AAPG – the petroleum association. As a result, the book came out with authors from academia, industry, research centre and joined papers of both academia and industry.

The editors are Arnold H. Bouma and Charles G. Stone. Bouma has the McCord Endowed Professorship at Louisiana State University. His interest is in marine sediments specifically to the fine-grained turbidite systems. Bouma is a member of many professional societies, holds a number of positions and presently President of SEPM. Whereas Charles is a geologist with Arkansas Geological Commission (1957–present).
Bouma's influence can explicitly be intuited. Besides the overview and general papers, he was also involved in another five paper as the co-author and several others as the reviewers.

The papers were built mostly from outcrop studies (70%) besides seismic-based with well integration (13%), one paper on open-hole logs, one paper on laboratory experiment, and three modern studies with single-channel seismic, sediment sampling, shallow cores, and side-scan sonar.
The study area mostly are from Karoo basin - South Africa (9 cases) and the rest was coming from the Brushy Canyon -West Texas (3 papers), 2 from the Gulf of Mexico, and 4 from the outcrop studies around Arkansas.



Editors: Arnold H Bouma & Charles G. Stone
Price: $103 ($74 for AAPG/ SEPM Member)

Overall there are two excellent summary and approximately 10 good papers. The rest is ordinary to mediocre articles. Beside the summary of the mud-rich turbidite systems and some interesting case studies, several excellent papers to be noted are Peakall et al which compared alluvial versus submarine channels, Scott et al which discussed the tectonic influences in sub-basins and its sedimentation, and Armentrout et al which exposed the application of sequence stratigraphy and 3D seismic visualization for revealing depositional system evolution.

Important Chapters:

- Chapter 2: Fine-Grained, Mud-Rich Turbidite Systems: Model and Comparison with Coarse-Grained Sand-Rich Systems
- Chapter 4: Sea Floor Morphology and Sediment Paths of the Northern Gulf of Mexico Deepwater
- Chapter 7: A Process Model for the Evolution of Submarine Fan Channels: Implications for Sedimentary Architecture
- Chapter 10: A Mississippi-Sourced Middle Miocene (M4), Fine-Grained Abyssal Plain Fan Complex, Northeastern Gulf of Mexico
- Chapter 13: Contrasting Styles of Basin-Floor Fan and Slope Fan Deposition: Mount Messenger Formation, New Zealand
- Chapter 26: Turbidity Current Sediment Waves in Subsurface Sequences

FHS – Dec 00