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***Confined Turbidite Systems*, edited by S.A. Lomas & P. Joseph, 2004. Geological Society, London, Special Publications 222. The Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath BA1 3JN, United Kingdom; 336 pages, hardbound; price GBP 85.00. ISBN 1-86239-149-1.**

In their introductory paper to the 222nd volume of the highly acclaimed Special Publications of the Geological Society of London (GSL222), editors Simon Lomas and Philippe Joseph characterise *'Confined turbidite systems'* as "those deepwater clastic depositional systems whose development has been fundamentally constrained by pronounced basin-floor topography". They contrast the term *confinement* with *containment* and *ponding* by defining that confinement "describes situations where sediment gravity flows and their deposits are appreciably affected by the presence of significant basin-floor topography, but without the connotation of complete containment", whereas ponding and containment are referred to enclosed depressions in which flows and deposits are trapped. This is a useful classification, although the term 'turbidite' in the book title is somewhat out of place, because turbidity currents are not the only process transporting clastic material into confined deepwater basins. In my opinion, 'Confined deepwater systems' would have been a more appropriate title.

After reading the introduction, I had the impression that the scientific papers in GSL222 would discuss the basin-scale effects of topography on the distribution of sediment gravity flows and their deposits, thus on the shape and internal organisation of entire submarine fans. I was wrong. In several contributions, the effects of confinement are relatively minor, and the editors' definition of confined systems appears to include individual architectural elements within fan systems, such as slope canyons, submarine channels and lobes (e.g., compensation cycles *sensu* Mutti & Sonnino, 1981: IAS 2nd Eur. Mtng Abstr., p.120-123). Strictly speaking, such intra-fan scale topography has a significant confining effect on sediment gravity flows, but it should be classified separately, because such confinement is primarily governed by internal fan building processes, not by external basin topographical control. In fact, the broad system scales covered by the book imply that all deepwater systems are confined systems, even those on passive continental margins, where the effect of basin topography is generally considered to be small.

Having said that, the quality of the science in GSL222 is generally very high. The content is variably pitched at postgraduate and professional levels. Geoscientists interested in depositional processes and sedimentary architecture, from an academic or industrial point of view, will all find enough information to justify a browse through the book, and many will want to have a copy on their bookshelf. The information is skewed towards outcrop case studies (8 papers in total), but there are also two overview papers, one experimental paper, two papers on modern basins and two mathematical modelling papers. The overview papers cover key controls on turbidite systems properties (by Bouma), in which, strangely enough, the effect of basin topography is underrepresented, and a description of two end member confined systems, i.e. silled sub-basins and connected tortuous corridors (by Smith), whose distinction at present seems possible only with 3-D seismic imagery.

Particularly impressive are the studies of modern systems by Gervais et al. (Golo System, Eastern Corsica) and Babonneau et al. (Zaire fan valley, West Africa). Both papers provide detailed descriptions and interpretations of bathymetric, acoustic and shallow seismic data, and, amongst other subjects, discuss the evolution of channel-levee complexes within incised valleys/canyons (so-called 'confined levees'). Gervais et al. further propose a fascinating model for linked submarine channel and lobe progradation and retrogradation. Some interpretations are rather speculative, but that is not a problem; instead it should stimulate further marine geological research. The experimental paper by Al Ja'Aidi et al. gives a systematic account of the effect of flow volume, flow density and grain size on the transport efficiency of turbidity currents, and the morphology of their deposits. The study compares confined and unconfined laboratory flows and fans, and proposes dimensionless geometrical parameters that may be useful for upscaling to natural submarine fans, but such an exercise remains to be done. Of the mathematical modelling papers, the paper by Felletti is worth mentioning. He uses Hurst statistics as a predictive tool for facies clustering within the confined Tertiary Piedmont Basin (NW Italy). There is considerable overlap in Hurst statistics for different sub-environments within that basin, thus limiting the applicability. Yet, there is certainly scope to extend Felletti's exciting work to other confined systems, and so establish a convenient tool for differentiating sedimentary successions in confined and unconfined settings.

Any collection of scientific papers contains case studies that are of regional interest only. GSL222 is no exception. Yet, a number of outcrop cases have potential to attract a wider readership than is customary for this type of publication. Hodgson & Haughton discuss the effects of shallow syndepositional faulting on sediment gravity flow behaviour and depositional architecture in the Tabernas-Sorbas Basin (SE Spain), building upon earlier work in the same basin by the second author. Superb exposure of the Pab Sandstone (Pakistan) and continuous shelf-to-basin deposits of the Central Tertiary Basin (Spitsbergen) permitted Eschard et al. and Crabaugh & Steel to conduct detailed sedimentological studies of the architecture of these deepwater systems. Of broad interest is the comparison of sand-rich basin-floor fans, mud-rich slope fans and sand-rich delta-fed slope fans in the Pab Sandstone. The possibility to trace architectural elements and facies from incised shelf via shelf-edge deltas, slope channels and prograding slope wedges to basin-floor fans in the example from Spitsbergen is unsurpassed, and of great benefit to less well exposed systems. The conglomeratic fan feeder system in the Adana Basin (south-central Turkey), described by Satur et al., is well exposed as well. The strength of this paper lies in the systematic description of changes in bedding style along the length of the feeder channels. However, Satur et al.'s explanation of part of the architectural changes in terms of changing slope gradients and associated transitions from supercritical to subcritical flow and *vice versa* is capable of improvement.

For those who know the Special Publications of the Geological Society of London, it will come as no surprise that the print quality, in fact the whole appearance of the book, is excellent. Some food for thought though; the quality of the colour photographs is significantly better than that of the grey-scale photographs. Moreover, there are a few editorial slip-ups. The captions of Figs. 7 and 8 on pages 218 and 219 (Smith) have been switched, and the interpretations of flow-aligned and flow-transverse gravel clast orientation on pages 247 and 250 (Satur et al.) appear to have been reversed. The same authors erroneously classify a hydraulic fall as a hydraulic jump. By no means should these comments deter deepwater geologists from freeing time to read GSL222, and also other researchers whose interest in (confined) deepwater systems is less deeply rooted should find this time well spent. I enjoyed reading up on the subject, and I am happy to give the book my full recommendation.

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