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Book review

The Neoproterozoic Timanide Orogen of Eastern Baltica. In: Gee, D.G., Pease, V. (Eds.), 2004. Geological Society Memoir No. 30, London, 255 pp., hardback, £90/$162, ISBN: 1-86239-172-6.

The research that comprises this book emanates from an unintended extension of EUROPROBE research on the Urals. As investigations followed the Urals northward into the high Arctic, hints of an older, vaguely known orogen began to surface. The compilation of papers that comprise this book was intended to provide the most up-to-date information about this orogen, the Neoproterozoic Timanide Orogen. In this, it succeeds. The volume is presented in the style of high-quality international journals, and all papers, many from non-native English speakers are well written. This is the main strength of the book. It is a definitive collection of difficult to access Russian data spiced with modern interpretations by Russian and western authors. Consequently, many of the papers are very descriptive: a pleasure to see in these days where interpretation usually comes to the fore. The focus of the book is heavily weighted towards stratigraphy and any structural geologist attracted to the book is bound to learn a thing or two. For example, Roberts et al., in the first article, devote an extra half page to lay out their criteria for defining submarine turbidite systems.

The book progresses logically from pre-Timanide basin formation to Timanide deformation, metamorphism and magmatism to post-Timanide sedimentation and ending with some regional comparisons. The first 3 papers help resolve some debate on whether pre-Timanian basins were rift or passive margin foreland basins. In the next set of papers, magmatism and metamorphism are conveyed as snippets of information focussing on geochronology and geochemistry but fail to provide a good overview of the orogen in these terms with the exception of the excellent contributions by Pease et al. and Remizov and Pease which identify the sources of most of the Timanian tectonic elements and ascribes their generation and current configuration to ocean-continent collision. The contribution by Gladny et al., which documents in great detail zircons that have survived eclogite facies metamorphism will be of particular interest to geochronologists. Siedlecka et al. provide the best summary of large scale changes in the geometry of the orogen over time. Gee and Tebenkov provide an interesting analysis of Svalbard that simplifies a previously considered complex structural history. The magmatic history of NE Svalbard is treated in considerable detail with isotopic techniques near the end of the book concluding that this part of the island is not part of the Timanides. Considering this point, it would have been nice to see a similar treatment of Timanian magmatism instead of the teasing glimpses offered by Larianov et al. and Pease et al. This brings out the main failing of this book.

It does not provide an organized and comprehensive overview of the Timanide orogen to introduce researchers new to the region. This could have been accomplished with a fold-out reference map at the beginning of the book that each paper could refer to for simple location purposes, which incidentally would take advantage of the underutilized A4 format of the book. Instead, the reader is often lost in vague overview maps beginning each paper. A summary time-space plot of Timanides as well as a few orogen-scale cross sections and tectonic cartoons would have made this a more complete reference for those wishing to step into the Timanides and provide a basis for future work to test.

Figure quality is variable with excellent field photographs offset by poor maps and stratigraphic columns with overly thick lines, unclear geological boundaries and complex, confusing fill patterns.

The faults in presentation of this book are made up for in shear volume of data. I counted over 40 isotopic ages and twice as many references published only in Russian in one article alone. This data comes at a cost of over $150, but 50% GSL and 40% GSA discounts make the book a more attractive buy for Society members. There is not much revolutionary offered in the field of structural geology as most of the orogen is depicted as a surprisingly simple low-grade fold and thrust belt. In northern areas where the Timanides and Caledonides intersect, things get more interesting and considerable attention is paid to tracing the extensions (or lack thereof) of these two orogens into the Barents Sea region. Delineation of these boundaries is of first order importance to plate reconstructions making the book timely to geologists involved in the reconstruction of Rodinia (IGCP 440). This book represents an excellent compilation of data for sedimentologists and geochronologists. For anyone researching the high Arctic of Europe, it is essential.

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