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Preface

Andrew Miall: A short overview of a lifetime's contribution to sedimentary endeavour

This special issue of *Sedimentary Geology* was commissioned by Elsevier Science Publishers, to mark the seminal contribution which Andrew Miall has made to sedimentary geology, not just within this important global publication platform, but indeed on the global scale. Octavian Catuneanu (University of Alberta), one of Andrew's ex-PhD students was invited to lead the volume, and long-time friend and research collaborator Pat Eriksson (Pretoria, South Africa; PhD thesis examined by Andrew in 1983) to join him in a most rewarding task. We are indebted to Charlene Miall, and to Nick Eyles, for their advice and for the photographs included here (Figs. 1 and 2).

Andrew Miall was born in Brighton, England in 1944 and obtained his BSc degree from the University of London in 1965. Later that year he emigrated to Canada, joining the graduate research programme in Arctic geology at the University of Ottawa, and was awarded his PhD in 1969. After three years of employment by several companies in Calgary, Andrew joined the Geological Survey of Canada. There he worked in the Arctic Islands section, on regional geology and hydrocarbon prospects. In 1979 he joined the Geology Department of the University of Toronto, where he has been ever since. His early work on the Arctic Islands of Canada was followed by largely fluvial projects in the Colorado Plateau of Arizona, Utah, New Mexico and Colorado. He has long been Professor of Geology at Toronto, and was Acting Chairman in 1986, and Associate Chairman from 1986 to 1990, and again from 1995 to 1998. He was installed as the first incumbent of the Gordon Stollery Chair in Basin Analysis and Petroleum Geology in 2001. Andrew has supervised, to date, 11 PhD students and 6 Master's students, with another 2 and 3, respectively, currently busy with their theses.

In 1992, Andrew was awarded a DSc degree from the University of London, UK, in recognition of his lifetime body of work up to that point. The University of Pretoria, South Africa, awarded him an Honorary DSc in 2001. Other awards include: Tracks Award of the Canadian Society of Petroleum Geologists (1977, 1979, 1980); Past President's Medal of the Geological Association of Canada (1983); Outstanding Paper Award of the Journal of Sedimentary Petrology (1991); Distinguished Fellow of the Geological Association of Canada (1995); Fellow of the Academy of Sciences, Royal Society of Canada (1995); two Dean's Awards from the University of Toronto (1996, 1997); and the Grover E. Murray Distinguished Educator Award of the American Association of Petroleum Geologists (2003). Learned or professional society memberships include the Canadian Society of Petroleum Geologists, Geological Association of Canada, International Association of Sedimentologists, Society of Economic Paleontologists and Mineralogists and the American Association of Petroleum Geologists. He was the Canadian representative on NATO's "Committee on the Challenges of Modern Society" from 2000 to 2004, and was recently elected vice-president of the Academy of Science within the Royal Society of Canada, and has been programme chair for three recent RSC Symposia. He has chaired and convened numerous other conferences and sessions thereof.

Andrew has always been a specialist sedimentologist, particularly interested in sandstones and their reservoir properties for oil and gas. He has become renowned around the world for his studies of fluvial sediments, their architecture and sequence stratigraphy, through his publications (including three much utilised books and a large number of influential papers), his consulting, his lecture tours and his short courses, and

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Fig. 1. A world-famous geologist on some world-famous outcrops: (a) Andrew Miall (r) and Nick Eyles at the world famous Carboniferous coal and reptile-bearing deposits at Joggins in the Bay of Fundy, Nova Scotia, Canada. (b) Andrew standing on the global stratotype boundary between the Cambrian and Ordovician at Green Point, in western Newfoundland. Charlene is in the background dutifully preparing to act as a "scale". (c) Andrew (r) with students, standing on the Burgess Shale in British Columbia.

particularly for introducing a number of most important concepts. He initiated and chaired the First International Symposium on Fluvial Sedimentology in 1977 in Calgary (and edited the 1978 book published from the papers presented there, which has been reprinted since); subsequent 4-yearly conferences represent the foremost global forum on the subject and have been held in: Keele (UK; 1981), Fort Collins (Colorado; 1985), Sitges (Spain; 1989), Brisbane (1993); Cape Town (South Africa; 1997); Nebraska (2001); and in Holland last year. He is also very well recognised for a series of critical papers on the concepts and application of sequence stratigraphy.

Professor Miall is acknowledged throughout the world as one of a very few pre-eminent experts in the analysis of fluvial deposits, both modern and ancient and has published several books/monographs on the subject; almost all researchers within this field make use

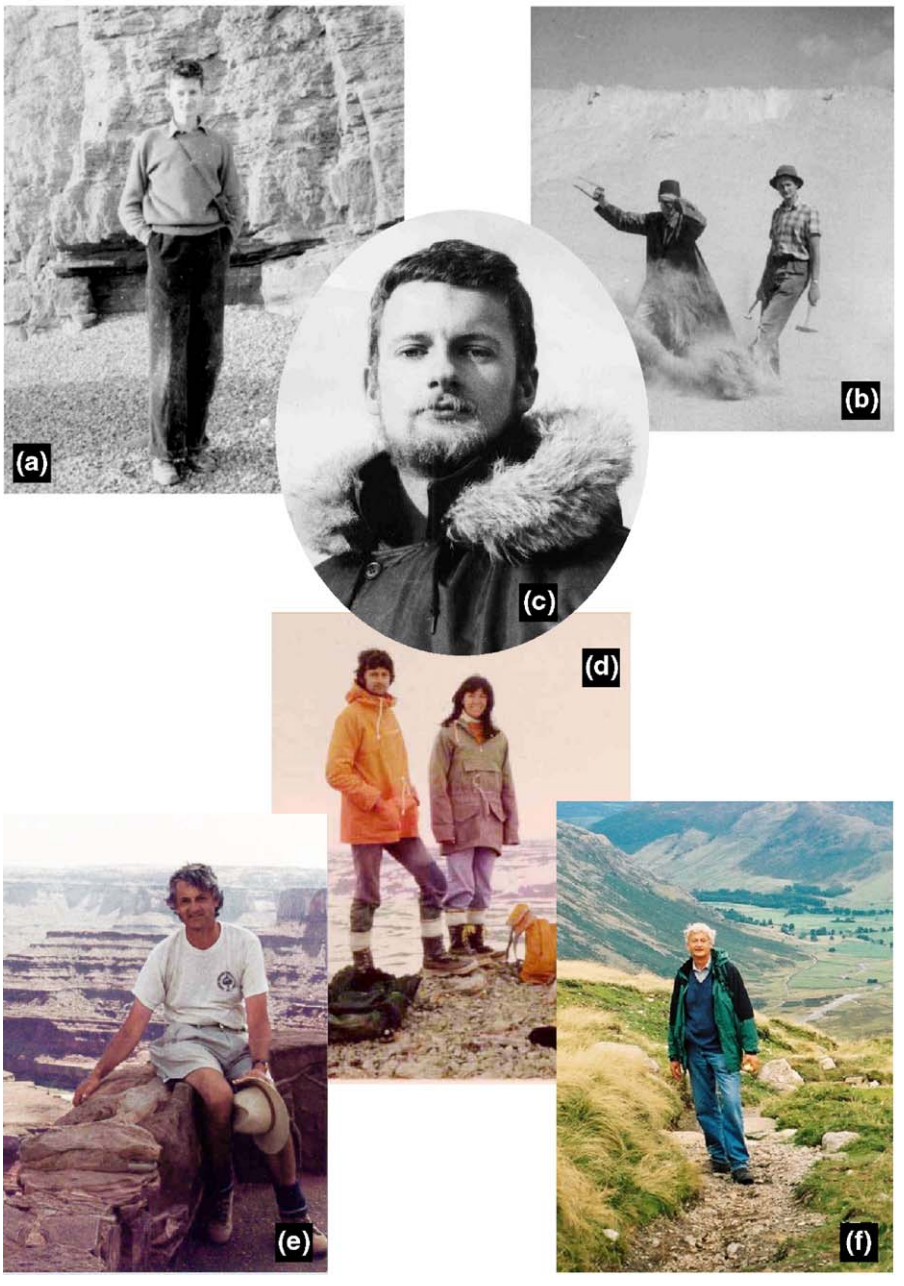

Fig. 2. The different ages of man and the different stages in the development of a scientist: (a) Andrew the undergraduate student at Hastings, Sussex, UK, Summer, 1962. (*Mmm…..perhaps sequence stratigraphy would be quite a good name for that idea….*) (b) Andrew, the undergraduate, and his brother David in Sussex, UK doing fieldwork, July, 1964. (*If only my genie was better behaved, and there weren't so much damned sand, this would be much less confusing….*) (c) Andrew in the Arctic, Summer, 1968. *(Captain Scott could handle all that walking — I should be able to solve these few facies.*) (d) Andrew and Charlene on Somerset Island in the Canadian Arctic, July, 1976. (*Now, with a bit more snow, I could easily figure out the architecture.*) (e) Andrew above the White Rim Trail, Canyonlands, Utah, Summer, 1998. (*Yeah, I've got it now, I always knew it was just a retro-arc flexural foreland basin, anyways.*) (f) Andrew Miall in the Lake District, UK, in 2003. (*Walking out facies contacts can be fun.…*).

of his standard facies and codes, of his two- and three-dimensional models, of his architectural elements and their codes and of his many models of fluvial basin development. The international fluvial conferences begun by Miall are a fitting mark of his achievements in international research within this field. With N. Eyles and C. Eyles, he developed a systematic lithofacies classification of glacial deposits, to complement his

fluvial contributions and co-convened a Geological Society of America Penrose Conference on Glacial Facies in 1987 at Toronto. His work on the Palaeoproterozoic glacial Gowganda Formation recognising the deep marine origin of mass flow deposits was a key conceptual breakthrough in the study of ancient glacial deposits. Andrew's widely used, book *"The geology of fluvial deposits: sedimentary facies, basin analysis and petroleum geology"* (April 1996) is a benchmark publication. A second book, even more widely used and of much broader compass, is Miall's *"Principles of sedimentary basin analysis"* (1984 — first edition; 1999 — third edition; a fourth is presently being adapted to include sedimentary environments), which has sold more than 10,000 copies worldwide. A third book, *"The geology of stratigraphic sequences"*, published in 1997, examines the extremely important concepts of stratigraphic cycles and their relationship to cyclic mechanisms, tectonics and sea level changes. In particular, he has questioned the basis of the global-eustasy paradigm, as well as the global cycle chart. Andrew Miall has played a pivotal role in refining many of these concepts and greatly broadening their application to case studies and individual economic deposits.

Behind every man (great or small), stands a woman… quite literally in Andrew's case because Charlene, his wife, has the distinction of having visited nearly every one of his field sites from the Arctic to Australia; she appears as the "scale" in many of his photographs! Charlene has proven to be an intellectual collaborator as well as a life-partner. She holds a professorship in the Department of Sociology at McMaster University, and together they have published a series of papers on the social construction of the earth sciences. This has considerably broadened the appeal of the combined Miall contribution to intelligent reading and thought globally.

Andrew Miall has contributed to many other aspects of sedimentological and broader geological science also. He has served as subeditor of a number of high-class journals and was editor of *Geoscience Canada* for eight years (1982–1989), and has been one of three editors-in-chief of *Sedimentary Geology* from 1987 till his retirement from that position in 2005. Prior to that, he served this journal as an associate editor from 1984 to 1987. This special issue of *Sedimentary Geology* is, in the first place, a token of appreciation for that sterling service to the global sedimentological community. He was an editorial board member of *Basin Research* from 1987 to 1999. Miall's refereed journal papers, numbering currently 72 and mostly in the best international publications, include at least 10 papers which are constantly cited in global literature. In addition he has contributed 28 chapters to major international books devoted to sedimentology, fluvial deposits, basin analysis and petroleum geology. He has edited another 4 books as sole editor. Many other papers, Canadian Geological Survey publications, papers in proceedings-type volumes as well as those in many journal special issues, complement these contributions. He has done numerous book reviews, non-refereed papers, as well as short-notes type papers and discussions/replies to discussions. He has also edited many research papers.

Professor Miall's status as an internationally recognised expert is further underlined by invitations for well over 50 keynote or invited addresses, given worldwide, as well as invitations to give lecture tours in Canada (1975 and 1983–1984), the USA (1986–1987; 1995), Japan (1990), Australia (1992) and South Africa (1979). His USA lecture tour in 1986–1987 was as the *"Distinguished Lecturer for the American Association of Petroleum Geologists"*. He has consulted worldwide to many companies on petroleum exploration and also presented a very large number of courses to these companies.

This very abbreviated description of the bare bones of a lifetime spent in the service of his chosen science does no justice to Andrew Miall, the person. All colleagues and former students talk of having learnt from Andrew the importance of critical thought and of examining the key assumptions behind many concepts that are so often readily taken for granted. He has given to so many young and inexperienced graduate students the confidence to make their own imprint on the discipline. What also distinguishes Andrew in his role as a world-class educator and a scientist of international stature, is his approachability, his modesty and his willingness to assist any colleague, no matter how young or inexperienced he or she may be. One of us (PGE) first met Andrew in 1979 in South Africa, through the auspices of my Master's advisor, Dave Hobday, and I was privileged later, during my PhD field work, to show Andrew and Charlene some of my upper Karoo (Late Triassic) aeolian exposures in the Drakensberg Mountains. On that occasion, I was able, through pure luck, to stop Charlene from sitting on a boulder anointed with a small berg adder; this is my one claim to fame and, many colleagues would agree, my most meaningful contribution to international geoscience. The other editor of this volume (OC) was fortunate to be recruited by Andrew as a PhD student in 1992. This marked a significant milestone in Octavian's career. Working with Andrew was not only a great opportunity but also a privilege and a source of inspiration. The only downside of knowing Andrew from close range is the

feeling that no matter how hard one works, it is just impossible to match his incredible success and productivity! Andrew's work in sedimentology, basin analysis and sequence stratigraphy inspired Octavian to follow a similar career path.

As one of the three editors-in-chief of *Sedimentary Geology*, Andrew Miall has always been not only a tower of strength in maintaining standards and guiding international sedimentary research, but he has also been most supportive as a mentor and adviser to inexperienced colleagues writing papers or guest-editing special issues. This is the true mark of a first-rate scientist and sets them apart from those of lesser status. Despite having left the editorship of *Sedimentary Geology*, we look forward to further guidance and critical scientific insights from Andrew Miall; his life of service to the sedimentary community is by no means complete.

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