

DATING BARROW'S METAMORPHISM FROM HIS TYPE SECTION IN SCOTLAND

(1)OLIVER, G. J. H. and (2)BOWRING, S. A. (1)St Andrews University, Scotland; (2)Massachchuesetts Inst of Technology, USA

We review the published radiometric age dates from George Barrow's type section in the Scottish Dalradian where regional metamorphic zones were first recognised in 1912. Barrovian Zones are now recognised all around the World. We present new monazite and zircon data from schist, migmatite and granite and show that the Barrovian episode of regional tecto-metamorphism in the Grampian Terrane lasted a mere 13 Ma starting with the collision of the Midland Valley island arc terrane with the Laurentian passive margin at 478 ± 8 Ma and finishing with exhumation of high grade metamorphic detritus at 465 ± 2.5 Ma. This age is contemporaneous with tecto-metamorphism in the near by Buchan Zones. We speculate on the significance of heat in-put from a magmatic arc on the type and distribution of regional metamorphism in active margins