

A Progress Report on the Geology of the Eastern Cobequid Highlands

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The oldest rocks in the eastern Cobequid Highlands belong to the Late Precambrian Bass River and Mount Thom complexes. They consist of ortho- and paragneisses overlain by a sequence of orthoquartzites, marble and muscovite-biotite schists. The contact between these sequences is a ductile shear zone which obscures the original relationships. This sequence is unconformably overlain by a Late Precambrian mafic volcanics and turbidites which may be a correlative of the Jeffers Group and displays within-plate alkalic-tholeiitic affinities. Two phases of Late Precambrian deformation are recognised: an early phase involving sinistral transtension and a later phase of dextral transpression. It is tentatively suggested that this may represent

the opening and closure of a back-arc basin. Late Precambrian intrusions include granite gneiss (which is probably syn-tectonic with at least part of the deformation in the Bass River Complex) granite and appinitic gabbro and diorite which appear to be post-tectonic with respect to late Precambrian deformation.

Late Ordovician-Silurian rocks consist of fossiliferous siliciclastics, similar to the Arisaig Group. Late Devonian-Carboniferous rocks are dominated by bimodal volcanics and are intruded by granite, diorite and gabbro of Devonian and Carboniferous age (see Turner *et al.*). The entire area was deformed locally by thrusts and isoclinal folds subsequent to the deposition of Tournaisian strata, but synchronous or prior to the Namurian.