Large Mafic Intrusions in Devono-Carboniferous Granites Along the Cobequid Fault

G. Pe Piper, St. Marys University, Halifax, Nova Scotia B3H 3C3
David J.W. Piper, Atlantic Geoscience Centre, P.O. Box 1006 Dartmouth, Nova Scotia B2Y 4A2

The Cobequid Fault was an active transform fault between the Meguma and Avalon terranes of Nova Scotia in the Devono-Carboniferous. Granite plutons

of probable Carboniferous age that are truncated by the western part of the Cobequid Fault have very abundant diabase sills and small diorite intrusions close to the fault. These mafic rocks become rare only a few kilometres north of the fault. Further east, granite plutons contain abundant mafic dykes of probable Carboniferous age. These mafic rocks largely predate final strikeslip motion on the Cobequid Fault, and are geochemically distinct from the younger Triassic volcanic rocks in the area. Some of the mafic rocks are alkaline in character, while others are olivine tholeiites. These mafic rocks were tapped from deep levels of the lithosphere by the Cobequid transform fault. They thus provide evidence for a gabbroic magma beneath the major Devono-Carboniferous plutons of the Avalon terrane.