

## Meguma Terrane in southern Cape Breton Island?

S.M. Barr, C.E. White

*Department of Geology, Acadia University, Wolfville, Nova Scotia B0P 1X0, Canada*  
and

M. Graves

*Cuesta Research Limited, 154 Victoria Road, Dartmouth, Nova Scotia B3A 1V8, Canada*

Fault-bounded slivers of variably deformed to mylonitic amphibolite, garnet schist, and granite occur on Isle Madame, Petit-de-Grat Island, and Green Island in southernmost Cape Breton Island. Although the amphibolite on Green Island was previously recognized, the outcrops on the other islands were considered to be mainly volcanic rocks and were included in the late Precambrian Fourchu Group of southeastern Cape Breton Island. New mapping and petrographic work show that these outcrops are mainly amphibolite-facies rocks that commonly display mylonitic textures with highly variable foliations and stretching lineations trending east or west with moderate plunges. Like the amphibolites on Green Island, they are characterized by a distinctive pleochroic blue-green amphibole; some layers also contain abundant garnet and/or muscovite, and muscovite-bearing granitic

sheets and dykes. They are similar to some amphibolitic and gneissic units preserved in faulted slivers in the Melrose area, south of the Minas Geofracture in the Meguma Terrane, suggesting an affinity between the Isle Madame area and the Meguma Terrane. This interpretation is also supported by a published Devonian  $^{40}\text{Ar}/^{39}\text{Ar}$  (hornblende) date from amphibolite on Green Island. Devonian-Carboniferous(?) granite on Petit-de-Grat Island and Isle Madame has within-plate (A-type) characteristics. The metamorphic and granite rocks are also similar to mylonitic metasedimentary rocks and granites exposed farther north along the Strait of Canso at Porcupine Mountain. Interpretation of the Isle Madame-Strait of Canso area places constraints on tectonic models correlating Cape Breton Island and the remainder of the northern Appalachian Orogen.