

### Stratigraphic relationships in the Big Bald Mountain area, southern Bathurst Mining Camp

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Recent mapping on 1:20 000 scale has permitted clarification of stratigraphic relationships in the complexly deformed rocks of the Big Bald Mountain area. Although the area has been dissected by a series of low-angle thrust faults (often steepened by later deformation) and high-angle, strike-slip faults, the stratigraphic succession within each fault slice can be interpreted with a high degree of confidence by comparison with established stratigraphic sections in the northeastern part of the Bathurst Mining Camp. Missing sections at various locations within the Big Bald Mountain area suggests the presence of major shear zones that can be further delineated on the basis of high strain indicators.

The stratigraphic succession in the Big Bald Mountain area differs on opposite sides of the Moose Lake-Mountain Brook shear zone. North of the fault zone, the felsic volcanic sequence of the Middle Ordovician Tetagouche Group is divided into the Nepisiguit Falls (quartz-feldspar crystal tuff, tuffite, ironstone) and Flat Landing Brook (aphyric flows, fragmental rocks) formations, whereas south of the fault, it is divided into the Clearwater Stream (plagioclase-rich crystal

tuff) and Sevogle River (alkali-feldspar-phyric flows) formations. Mafic volcanic rocks intercalated with ferromanganiferous shales of the Boucher Brook Formation comprise the upper part of the Tetagouche Group in both areas. Subvolcanic intrusions of trachytic composition are commonly associated with the mafic volcanic rocks.

Sedimentary rocks assigned to the Cambrian-Lower Ordovician Miramichi Group occur only to the south of the Moose Lake-Mountain Brook shear zone. From oldest to youngest, these include the Chain of Rocks Formation (thick-bedded quartzite), Knights Brook Formation (medium-bedded pyritiferous quartzite, feldspathic wacke, and shale), and the Patrick Brook Formation (interlaminated shale and siltstone).

The Miramichi Group is intruded by an abundance of generally plagioclase-phyric sills referred to as the Squirrel Falls Felsite. A large coarse grained pluton, the Mullin Stream Lake Granite, was emplaced into the lower part of the Miramichi Group at 458 Ma. Small composite plutons of fine grained alkali-feldspar-phyric granite and associated gabbro of the

**Stony Brook Complex** are abundant in the upper part of the **Miramichi Group** and overlying felsic sequence of the **Tetagouche Group** to the south of the **Moose Lake-Mountain Brook** shear zone. Locally, apophyses from these plutons have risen to the stratigraphic level of the **Boucher Brook Formation**. High level plutons emplaced into the felsic vol-

canic sequence to the north of the **Moose Lake-Mountain Brook** shear zone, such as the **South Little River Granite**, contain quartz phenocrysts in contrast to those further south. Dykes of weakly deformed red felsite appear to represent the latest stage of Ordovician igneous activity.