

***Geology of the Gillanders Mountain intrusive complex and satellite pluton,
Lake Ainslie-Whycocomagh area, Cape Breton Island, Nova Scotia***

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The Gillanders Mountain intrusive complex consists of two main units: highly deformed and altered diorite and monzogranite, and a relatively undeformed, fresher syenogranite which is in part granophyre. Two new Rb-Sr isochrons indicate that emplacement occurred during two distinct periods of epizonal activity - an early Devonian diorite-monzogranite sequence and an early Carboniferous syenogranite-granophyre subvolcanic series.

The oldest country rocks are metasedimentary rocks, at least in part belonging

to the Hadrynian George River Group, which are unconformably overlain by a sequence of Devonian-Carboniferous volcanic and continental sedimentary rocks (Fisset Brook Formation). These are in turn unconformably overlain by a sequence of Carboniferous cover rocks belonging to the Horton and Windsor Groups. Contact relations with the granitoid rocks are obscure, and where exposed appear to be nonconformities or high-angle faults. Dyke rocks include pink aplite and porphyritic felsite which cut the diorite, and dark green, re-

lately unaltered basalts which cut the syenogranite; these basalts appear to be the youngest intrusive rocks in the area and may be related to Fisset Brook volcanism.

The satellite plutons are composed predominantly of diorite and granodiorite and where exposed are highly fractured to intensely sheared. Barite, fluorite, and minor Cu sulphides are locally associated with

these plutons. Diamond drilling has encountered a subsurface, coarse-grained syenogranite with associated barite which may be Carboniferous in age and related to the main syenogranite body. The Whycomagh Mountain granite porphyry intruded George River Group metasedimentary rocks and has associated copper skarns hosted in calc-silicate rocks derived from George River marbles.