

**The hidden record of Silurian and Devonian stratigraphy  
in the Cobequid Mountains, northern Nova Scotia**

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Hidden in the gorges of the Cobequid Mountains are important sections of the Silurian and Devonian systems in the Avalon composite terrane. Few researchers have studied these rocks. These sections, well exposed in southerly flowing streams, show the entire section of the Silurian and the Lower Devonian. The best sections are in the central area on the Portapique, Bass and Economy rivers. On the Portapique River 2.9 km of strata are exposed from the Rockland Brook Fault in the south to the covered interval at the contact with the Fountain Lake Group. Fossiliferous strata record ages

from Late Llandoveryan to Pridolian. More than 700 m of strata lie below the oldest fossil horizon offering the possibility of continuous deposition from the Ashgillian. Above the last Pridolian fossil horizon, 1.1 km of red mudstone and quartz wacke (Portapique River Formation) lie conformably on top of the grey quartz wackes and mudstones (Wilson Brook Formation). The red strata probably range upward into the Gedinnian similar to the Knoydart Formation at Arisaig. On the Economy River, Early Llandoveryan (A2) fossils have been found. Other fossiliferous Silurian inliers are found east and west of the

central part of the Cobequids. Between the Economy and Portapique rivers the Middle Devonian aged Murphy Brook Formation crops out in a syncline. It rests with apparent unconformity on the Wilson Brook Formation without the intervening Portapique River Formation. Flora from the Murphy Brook are the "classic" *Psilophyton* flora similar to that found in the Trout River Formation in the Katahdin region of Maine.

Conglomerates contain clasts of granite and volcanic rocks but the source area is not known. With further study, these three units can help clarify the distribution of Silurian and Devonian lithofacies in the Avalon composite terrane and shed additional understanding about the nature and timing of the Acadian orogeny.