Siluro-Devonian tectonostratigraphic relationships, western margin of Elmtree Inlier, northern New Brunswick

J.A. Walker, S. Gower
New Brunswick Department of Natural Resources and Energy, P.O. Box 50, Bathurst, New Brunswick E2A 3Z1, Canada
and
S. Leblanc
Department of Geology, Acadia University, Wolfville, Nova Scotia B0P 1X0, Canada

Silurian Chaleurs Group rocks occur in the vicinity of Jacquet River to the west of the Ordovician Elmtree Inlier. The oldest Chaleurs Group rocks are conglomerates and limestones (probably Middle Silurian) that are overlain by mafic and felsic volcanic rocks. These volcanic rocks were previously assigned to the Early Devonian Dalhousie Group. The boundary between the Chaleurs and Dalhousie groups is tentatively drawn at the top of a unit containing mafic volcanics and redbeds, which underlie the first fossiliferous Lower Devonian siltstones. This is compatible with the definition of the type Chaleurs Group in the Gaspé.

Folding and deposition probably occurred simultaneously because folds in older parts of the Chaleurs Group appear to be overstepped by younger strata. The area is also transected by several easterly to northeasterly trending faults all of which show dextral offset. The time of movement along these faults seems to become younger from north to south; faults in the north are overstepped by Upper Silurian units whereas faults in the south cut Lower Devonian strata.

Overthrusting of the Deveraux oceanic fragment, exposed within the Elmtree Inlier, in the Late Ordovician to Early Silurian was responsible for the syndepositional deformation in the Chaleurs Group rocks. Thus, Silurian volcanism occurred in a compressional regime although pyroxene compositions from samples taken in the mafic volcanic belt suggest a tensional tectonic environment.