

## STRATIGRAPHY/STRATIGRAPHIE

PALAEZOIC/PALÉOZOIQUE

This document was produced  
by scanning the original publication.

Ce document est le produit d'une  
numérisation par balayage  
de la publication originale.

1138. AITKEN, J.D., Geol. Surv. Can.:  
Lower Paleozoic stratigraphy, southern Rocky Mountains, Alberta  
and British Columbia, 1972-.
1139. AUSTIN, I.A., MORRE, R.G. and COLWELL, J.A., Acadia Univ. (Geology):  
Time marker beds within the Windsor Group sediments, 1976-79; M.Sc.  
thesis (Austin).  
To ascertain whether discrete time marker planes exist in the Windsor  
Group (Nova Scotia) sediments and if they can be followed across the  
depositional basin regardless of bio-or lithofacies changes, dolo-  
mitization or tectonism.
1140. BOLTON, T.E., Geol. Surv. Can.:  
Ordovician-Silurian biostratigraphy Southampton Island, District of  
Keewatin, 1970-.
1141. BOLTON, T.E., Geol. Surv. Can.:  
Silurian-Ordovician macrobiostratigraphy of Anticosti Island,  
Québec, 1974-.
1142. BOURQUE, P.-A., Univ. Laval (Géologie et Minéralogie):  
Paleogéographie, paleoécologie et paleoenvironnements du Siluro-  
Devonien de Gaspesie, Québec, 1974-80.  
Stratigraphie générale terminée. Les efforts actuels portent sur  
l'étude des ensembles à carbonates, ainsi que le paleoécologie du  
Llandoveryen.
1143. CECILE, M.P., Geol. Surv. Can.:  
Lower Paleozoic basin - to - platform relationships in the Cordillera,  
District of Mackenzie - British Columbia, 1977-.
- See:  
Basin to platform transition, Lower Paleozoic strata of Ware and  
Trutch map area, northeastern British Columbia; Geol. Surv. Can.,  
Paper 79-1A, p. 219-226, 1979.
1144. CHRISTIE, R.L., Geol. Surv. Can.:  
Geological reconnaissance of eastern Devon Island and southeastern  
Ellesmere Island, District of Franklin, 1968-.
1145. DONOHOE, H.V. and WALLACE, P.I., Nova Scotia Dep. Mines:  
Geological - geochemical surveys-sub-project 4.7: Cobequid Highlands,  
1978-79.
1146. EASTWOOD, G.E.P., British Columbia Min. Mines Pet. Res. (Geological):  
Sicker Project, British Columbia, 1978-.  
The Sicker Group of the Duncan and Cowichan Lake areas is host to one  
past-producing mine, the Lenora-Tyee, and to many prospects. It has  
been correlated with rocks in the Buttle Lake area, where certain  
members are hosts to the orebodies of Western Mines. The Lenora-Tyee

## STRATIGRAPHY/STRATIGRAPHIE

orebodies occur along a shear zone that appears to be the axis of a schist belt, and considerable exploration has been conducted along this belt, without finding significant additional mineralization. An alternative hypothesis would have the orebodies remobilized from primary deposits, possibly of Kuroko type. The project therefore aims to determine whether there are facies changes across the belt and whether there is evidence of stratiform mineralization.

1147. FRITZ, W.H., Geol. Surv. Can.:  
Cambrian Biostratigraphy of the Canadian Cordillera, 1965-.
1148. GELDSETZER, H.H.J., Geol. Surv. Can.:  
Carboniferous and Triassic strata of Appalachian region, 1974-.

See:

The Windsor Group in Atlantic Canada - an update; Geol. Surv. Can., Paper 78-1C, p. 43-48, 1978.

1149. GILES, P.S. and BOEHNER, R., Nova Scotia Dep. Mines:  
Geological - geochemical surveys - Sub-project 4.5: carbonate stratigraphy, 1978-79.

Major project activities are directed towards the establishment of a province wide lithostratigraphic framework for the Visean Windsor Group. This framework, with supporting time - stratigraphic data, provides the basis for paleogeographic reconstruction on a regional scale, and permits the study of mineral deposits within a temporal and spatial framework.

The Nova Scotia Department of Mines has initiated a project to establish a comprehensive and complete data file pertaining to salt in Nova Scotia. This file is complete and available for public use. Preparation of a report is in an advanced stage, with publication anticipated in mid-1979. This report includes a complete bibliography of references to salt in Nova Scotia which, together with the data file, will facilitate access by industry and government to all available information pertaining to the salt resources of Nova Scotia.

1150. HOWIE, R.D., Geol. Surv. Can.:  
Compilation of geoscientific data in the Upper Paleozoic basins of southeastern Canada, 1971-.
1151. KNIGHT, I., BOYCE, D. and STOUGE, S.S., Newfoundland Dep. Mines and Energy (Mines):  
Stratigraphy, sedimentation and geological mapping of Cambro-Ordovician platformal rocks of the Great Northern Peninsula, 1976-82.

See:

Platformal sediments on the Great Northern Peninsula - Stratigraphic studies and geological mapping of the northern St. Barbe district; Newfoundland Dep. Mines Energy, Rept. 78-1, p. 140-150, 1978.

Compilation of Cambro-Ordovician stratigraphy being finalized; sedimentations of Upper Camb to Lower Ord. carbonates described; trilobite faunas studies (Boyce); conodont investigation (Stouge); identification of Mississippi-Valley type mineralization within

## STRATIGRAPHY/STRATIGRAPHIE

stratigraphy; and compilation of 1:50,000 maps for Eddies Cove, Big Brook, Flowers Cove, Raleigh and Brig Bay.

1152. LEGAULT, J.A., Univ. Waterloo (Earth Sciences):

Biostratigraphy of the Road River Formation, Richardson Mountains, Yukon, 1977-80.

The Road River Formation from the Yukon and Mackenzie Mountains, Northwest Territories, is reputed to be Cambrian to Mississippian. A study of the palynomorphs to pinpoint the age more accurately has been undertaken. This ties in with graptolite studies and conodont studies, and will allow tie-in with standard biostratigraphical sections.

Samples, mainly charts, from the Peel River and Blackstone River areas (Ashgillian-Ludlovian) have been processed and some have yielded chitinozoa which are related to the genera Angochitina, Lagenochitina, Desmochitina, Eisenackitina, and Rhabdochitina. The acritarchs are rare, and no spores have yet been recovered. There is an abundance of fragments of scolecodonts, graptolites, chitinous tubes in the samples which contain chitinozoa.

Samples from the Bonnet Plume area (Cambrian-Silurian) and others from the Royal Creek area (Devonian) have been processed. Further material from the Rock River section, the Teklit Creek area and from the Lower Peel River Canyon will be added to the collection.

1153. LIBERTY, R.A., Brock Univ. (Geological Sciences):

Ontario-carbonate studies, 1978-.

To clarify stratigraphy, delimit new units within the classification, and clarify details pertinent to mineralization, be it dolomitisation, silicification, or sulphide emplacement.

1154. LORTIE, D.P., MOORE, R.G. and COLWELL, J.A., Acadia Univ. (Geology):

Stratigraphy of Carboniferous sediments in Debert, Colchester County, Nova Scotia, 1977-79; M.Sc. thesis (Lortie).

To outline the basic stratigraphy of the Carboniferous age sedimentary rocks which occur around Debert, Colchester Co., Nova Scotia. The area covers 120 sq. km and is bounded on the north by the Cobequid Mountains and on the south by Triassic sediments. Three major units have been defined on the basis of field mapping; a basal conglomerate unit, a coal bearing unit, and a redbed unit. Preliminary age dating has been given as Westphalian C age for the sediments. Source of the sediments is thought to be from the erosion of the Cobequid Complex. The study will deal with major structural events which affected the sediments since deposition. The structural history is tied to the events which occur along the Cobequid fault system. The final aspect of the study will deal with the coal which is found in the area.

1155. MAYR, U., Geol. Surv. Can.:

Stratigraphy and correlation of lower Paleozoic subsurface, Arctic Islands, 1975-.

## STRATIGRAPHY/STRATIGRAPHIE

See:

Lithofacies interpretation and conodont biostratigraphy of the Blue Fiord Formation in the subsurface of Cameron and Vanier Islands, Canadian Arctic Archipelago; Geol. Surv. Can., Paper 79-1A, p. 233-240, 1979.

1156. MCCABE, H.R., Manitoba Geol. Surv. Br.:  
Ordovician stratigraphy of southwestern Manitoba, 1979-84.  
  
To revise and redefine the subdivision of Ordovician strata in southwestern Manitoba, particularly with respect to the Red River Formation; to determine the detailed distribution of the various rock units in the light of new surface and sub-surface (core hole) data; to define the lithofacies changes in the Ordovician formations; and to integrate subsurface data with the new and previously described outcrop data.
1157. MCCUTCHEON, S.R. and RUITENBERG, A.A., New Brunswick Dep. Nat. Res. (Mineral Res. Br.):  
Geology and mineral deposits Annidale-Nerepis area, New Brunswick, 1973-79.
1158. MCGLYNN, G.M.F., MOORE, R.G. and COLWELL, J.A., Acadia Univ. (Geology):  
Correlation of the carbonate members of the Codroy Group (Mississippian) of southwest Newfoundland to those of the Windsor Group, Windsor, Nova Scotia, 1978-79; M.Sc. thesis (McGlynn).  
  
To provide a detailed description of the carbonate members (and associated fauna) of the Codroy Group (Mississippian) of southwest Newfoundland in order to determine environment of deposition, paleoecology, and the stratigraphic equivalence of these members to the Windsor Group, Windsor, Nova Scotia.
1159. MIAULL, A.D., Geol. Surv. Can.:  
Phanerozoic stratigraphy and sedimentology of Somerset Island and northern Boothia Peninsula, 1975-.
1160. MONGER, J.W.H., Geol. Surv. Can.:  
Upper Paleozoic rocks of western Canada Cordillera, 1972-.
1161. MORROW, D.W., Geol. Surv. Can.:  
Stratigraphy, sedimentology and diagenesis of Paleozoic rocks in the southern Mackenzie Mountains and northern Rocky Mountains, Yukon Territory-British Columbia, 1975-.
1162. NARBONNE, G.M. and DIXON, O.A., Univ. Ottawa (Geology):  
Silurian stratigraphy and depositional environments of south-eastern Somerset Island, Northwest Territories, 1975-80; Ph.D. thesis (Narbonne).

See:

Polarichnus, a new trace fossil from the Siluro-Devonian strata of Arctic Canada; J. Palaeontol., vol. 53, no. 1, p. 133-141, 1979.

## STRATIGRAPHY/STRATIGRAPHIE

A study of the lithological and faunal succession in the Read Bay Formation on southeastern Somerset Island and its correlatives on Cornwallis Island; included are detailed studies of biohermal facies and trace fossils.

1163. NASSICHUK, W.W., Geol. Surv. Can.:  
Stratigraphy and paleontology of Upper Paleozoic rocks on parts of Ellesmere and Axel Heiberg Islands, District of Franklin, 1968-.
1164. NASSICHUK, W.W., Geol. Surv. Can.:  
Carboniferous biostratigraphy in the northern Yukon, British Columbia, and Alaska, 1975-.

1165. NORFORD, B.S., Geol. Surv. Can.:  
Ordovician and Silurian biostratigraphy of British Columbia, Alberta, Manitoba, Yukon, Mackenzie and Franklin, 1961-.

See:

Lower Devonian graptolites in the Road River Formation, northern British Columbia; Geol. Surv. Can., Paper 79-1A, p. 383, 384, 1979.

1166. NORRIS, A.W., Geol. Surv. Can.:  
Devonian biostratigraphy of northern Yukon Territory and adjacent District of Mackenzie, 1970-.

1167. OKULITCH, A.V., Geol. Surv. Can.:  
Stratigraphy and structure of the Mount Ida Group, southern British Columbia, 1972-78.

1168. PACKARD, J.J. and DIXON, O.A., Univ. Ottawa (Geology):  
Read Bay Formation (member C) on eastern Cornwallis Island, Northwest Territories, 1977-80, M.Sc. thesis (Packard).  
A general stratigraphic study of member C of the Read Bay Formation on eastern Cornwallis Island, and detailed study of reefoid coral-stromatoporoid facies and adjacent crinoidal facies in the formation. Sections studies lie between Goodsir Creek and Read Bay on the east coast.

1169. PEDDER, A.E.H., Geol. Surv. Can.:  
Upper Silurian and Devonian biostratigraphy western and northern Canada, 1968-.

See:

Late Silurian and Early Devonian graptolite, brachiopod and coral faunas from northwestern and Arctic Canada; Geol. Assoc. Can., Sp. Paper 17, 1978.

1170. PRETO, V.A. and CARTER, N.C., British Columbia Min. Mines Pet. Res. (Geological):  
Geology and mineral deposits of the Barriere Lakes - Adams Plateau area, British Columbia, 1978-80.

## STRATIGRAPHY/STRATIGRAPHIE

To map area for publication at 1:50,000 scale; to understand setting of deposits; to solve structure, understand relationships with Shuswap metamorphic complex; and to unravel stratigraphy of rocks involved.

1171. RICHARDS, B.C., Geol. Surv. Can.:  
Carboniferous and Permian stratigraphy and sedimentation in the southwestern District of Mackenzie and southeastern Yukon Territory, 1977-.
1172. ROBLESKY, R.F. and KLOVAN, J.E., Univ. Calgary (Geology):  
Late Silurian (late Pridolian) to late Devonian (early Frasnian) stratigraphy and sedimentation, south-central Ellesmere Island, District of Franklin, Arctic Canada, 1977-79; M.Sc. thesis (Roblesky).  
Late Silurian to Upper Devonian (late Pridolian to early Frasnian) sedimentation in the Vendum Fiord region, Ellesmere Island, was controlled by two distinct depositional provinces: the Franklinian Miogeosyncline and the Central Stable Region. The boundary between the two provinces can be expressed as a flexure or marked change in the thickness of the sedimentary column. Facies belts parallel the margin of the miogeosyncline, and facies changes are common across the miogeosyncline - stable region boundary. Total thickness from the top of the Allen Bay - Read Bay Formation (undivided) (late Pridolian) to the top of the Hecla Bay Formation (early Frasnian) ranges from 4064 m in the miogeosyncline, to 879 m in the stable region.  
Sedimentation was continuous in the Franklinian Miogeosyncline throughout the Devonian. The Lower Devonian in the miogeosyncline consists of euxinic black shales, shallow shelf siltstones and sandstones, and shelf and reefal limestones (Devon Island, Eids, Blue Fiord, Mackinson Inlet Formation (new)). The Middle to Upper Devonian in the miogeosyncline consists deltaic-fluvial sandstones and shales (Strathcona Fiord Formation) and fluvial (?) sandstones (Hecla Bay Formation). In the Central Stable Region, Lower Devonian sedimentation was interrupted by the Mid-Paleozoic Epeirogeny, resulting in subaerial erosion and syntectonic deposition of red-bed facies (Vendum Fiord Formation). Upper to Middle Devonian sedimentation in the stable region was continuous, and consists of supratidal dolomites and evaporites (Blue Fiord and Mackinson Inlet Formation), deltaic fluvial sandstones (Strathcona Fiord Formation), and fluvial (?) sandstones (Hecla Bay Formation).
1173. RUITENBERG, A.A., New Brunswick Dep. Nat. Res. (Mineral Res. Br.):  
Dorchester-Hillsborough project, New Brunswick, 1977-79.  
See:  
Geology and mineral deposits of the Dorchester area; New Brunswick Dep. Nat. Res., map report 78-4, 1978.
1174. SANFORD, B.V., Geol. Surv. Can.:  
Lower Paleozoic geology of Eastern Canada, 1975-.

STRATIGRAPHY/STRATIGRAPHIE

1175. SKEVINGTON, D., Memorial Univ. (Geology):

Ordovician and Silurian graptolite biostratigraphy, Armorican Massif (Brittany), France, 1975-79.

Ordovician and Silurian graptolite faunas from selected localities in the Armorican Massif (Brittany, France) have been identified and described. The graptolite biostratigraphy has been integrated, whenever possible, with zonal schemes based on other faunal and floral groups.

1176. SKEVINGTON, D., Memorial Univ. (Geology):

Biostratigraphy of late Ordovician graptolitic argillite, central Newfoundland, 1979-81.

Age-range in terms of graptolite zones of the late Ordovician graptolite black argillite across the Central Fold Belt of Newfoundland; determination of the degree of diachronism (if any) of the upper and lower boundaries of the argillite unit within the fold belt; elucidation of mesoscopic structural characteristics of the fold belt utilizing knowledge of the biostratigraphy and areal distribution of the argillite; and interpretation of changing paleo-environments through the late Ordovician in central Newfoundland.

1177. SKEVINGTON, D. and RYAN, P.D., Memorial Univ. (Geology):

Ordovician and Silurian stratigraphy and structure, Bergen Arcs and Trondheim Nappe, western Norway, 1977-79.

Revision of the late Ordovician and early Silurian stratigraphy and graptolite faunas of selected areas in the Bergen Arcs has been completed. Investigation (involving geological mapping, sedimentology, structure, stratigraphy and graptolite faunas) of an Ordovician volcanic-sedimentary succession in the Trondheim Nappe is nearing completion; a first detailed representative Ordovician biostratigraphy for the Trondheim region has been established.

1178. TELFORD, P.G., Ontario Geol. Surv.:

Paleozoic-Mesozoic stratigraphy of Ontario, 1973-.

1179. THOMPSON, R.I., Geol. Surv. Can.:

Structure and stratigraphy of Paleozoic and lower Mesozoic rocks in Halfway River map area, northeastern British Columbia, 1975-.

1180. THORSTEINSSON, R., Geol. Surv. Can.:

Structure and stratigraphy of western Devon Island and Vandom Fiord map area, Ellesmere Island, District of Franklin, 1976-.

1181. TRETTIN, H.P., Geol. Surv. Can.:

Stratigraphy, structure and carbonate petrography of the Marble Canyon Formation (Permian) in the Marble Range, Cariboo District, British Columbia, 1967-.

STRATIGRAPHY/STRATIGRAPHIE

MESOZOIC/MESOZOIQUE

1182. ASCOLI, P., Geol. Surv. Can.:  
Biostratigraphic zonation (Formaminifera-Ostracoda) of the Mesozoic  
and Cenozoic rocks of the Atlantic Shelf, 1971-.
1183. BALKWILL, H.R., Geol. Surv. Can.:  
Structure and stratigraphy, western Queen Elizabeth Islands, District  
of Franklin, 1976-.
- See:  
K/Ar ages and significance of mafic rocks, Sabine Peninsula,  
Melville Island, District of Franklin; Geol. Surv. Can., Paper  
78-1C, p. 35-38, 1978.
1184. EMBRY, A.F., Geol. Surv. Can.:  
Mesozoic stratigraphy and basin analysis of the Western Queen Elizabeth  
Islands, Arctic Archipelago, 1975-.
1185. EMBRY, A.F., Geol. Surv. Can.:  
Mesozoic stratigraphy and basin analysis of eastern Sverdrup Basin,  
Arctic Archipelago, 1975-.
1186. FEDORUK, R.A. and WILLIAMS, G.D., Univ. Alberta (Geology):  
Uppermost Jurassic and Lower Cretaceous of the West Channel area,  
Mackenzie Delta, Northwest Territories, 1977-79; M.Sc. thesis  
(Fedoruk).  
To provide a synthesis of the depositional and tectonic aspects  
of Mesozoic strata on the west side of the Mackenzie Delta.
1187. CIBSON, D.W., Geol. Surv. Can.:  
Stratigraphic and sedimentological studies of Lower Cretaceous rocks,  
Rocky Mountain Foothills and Front Ranges, Alberta and British  
Columbia, 1975-.
1188. HABIB, A.G.E. and WILLIAMS, G.D., Univ. Alberta (Geology):  
The stratigraphy of the Upper Cretaceous Bearpaw Formation of  
Alberta, 1978-79; M.Sc. thesis (Habib).  
Attention is directed in this study towards the mapping of the Upper  
Cretaceous (late Campanian-early Maestrichtian) Bearpaw Formation of  
Alberta. The study is mainly concentrated on subsurface correlation  
of electric logs that will be followed by minor surface investigation.  
The study is also involved in determining the position and nature of  
stratigraphic boundaries between the Bearpaw Formation and the under-  
lying Belly River Formation and overlying Edmonton Formation. Eight  
preliminary E-W stratigraphic cross-sections were constructed according  
to well log correlations, whereby a spread of one well/five townships  
was used. A detailed study is in progress where one well/section  
(1 mile squared) is used with a minimum of three wells/township (6  
miles squared) in order to follow up closely the changes in contacts  
and lithologic markers, six of which have been traced along two main  
sections; E-W and N-S.

STRATIGRAPHY/STRATIGRAPHIE

1189. HEDINGER, A. and STELCK, C.R., Univ. Alberta (Geology):  
Foraminifera of the Upper Jurassic Husky Formation, Aklavik Range,  
1975-78; M.Sc. thesis (Hedinger).

An extensive arenaceous suite of Foraminifera from the Husky Formation is found to have much in common with the Siberian microfaunas of the Late Jurassic. There is a minor component of calcareous elements of more cosmopolitan appearance. The elements both specifically and generically are discrete dependent on the mesh-size fraction selected with the break-over around the 80 mesh size. This requires a new assessment of ecological interpretations to resolve this anomaly against the analogy of occurrences of modern forms.

1190. JANSA, L.F., Geol. Surv. Can.:  
Reconnaissance field study of the Mesozoic sequences outcropping on the Iberian Peninsula, 1977-.

1191. JELETZKY, J.A., Geol. Surv. Can.:  
Mesozoic and Tertiary rocks of the west coast of Vancouver Island and in Quatsino Sound, British Columbia, 1949-.

1192. JELETZKY, J.A., Geol. Surv. Can.:  
Cretaceous and Jurassic of Richardson Mountains, Porcupine Plains and Eagle Plains, Yukon Territory and District of Mackenzie, 1955-.

1193. JELETZKY, J.A., Geol. Surv. Can.:  
Cretaceous and Upper Jurassic biostratigraphy of Western Cordillera, 1967.

1194. MONGER, J.W.H., Geol. Surv. Can.:  
Stratigraphy of the Takla Group, northwestern British Columbia, 1975-.

See:

Composition of pyroxene phenocrysts from Lower Mesozoic volcanics, north-central British Columbia; Geol. Surv. Can., Paper 78-1C, p. 113-117, 1978.

1195. POULTON, T.P., Geol. Surv. Can.:  
Mesozoic biostratigraphy and Jurassic paleontology of northern Yukon and adjacent District of Mackenzie, 1975-.

See:

Internal correlations and thickness trends, Jurassic Bug Creek Formation, Northeastern Yukon and adjacent Northwest Territories; Geol. Surv. Can., Paper 78-1B, p. 27-30, 1978.

Correlation of the Jurassic Bug Creek Formation in the subsurface of the Mackenzie Delta, District of Mackenzie; Geol. Surv. Can., Paper 78-1C, p. 39-42, 1978.

1196. POULTON, T.P., Geol. Surv. Can.:  
Jurassic biostratigraphy of selected areas of western and Arctic Canada, 1976-.

STRATIGRAPHY/STRATIGRAPHIE

1197. PRICE, L.L., Geol. Surv. Can.:  
Geological observations at shafts of potash mines, Saskatchewan,  
1964-.
1198. STELCK, C.R., ANAN-YORKE, R., HEDINGER, A., KOKE, K. and BREDIN, C.,  
Univ. Alberta (Geology):  
Biostratigraphy of the Middle Cretaceous, 1947-; M.Sc. theses  
(Koke, Bredin).
- New developments in this project have revealed the presence in northeastern British Columbia of the Haplophragmoides gigas Zone and an additional two subzones below the Colorado shale with affinities with the Alaskan suites. Reinterpretations of facies are required as a fauna of tiny Foraminifera has been collected on the finer screens in the Neogastropites beds.

1199. STOTT, D.F., Geol. Surv. Can.:  
Cretaceous stratigraphy, Peace River to 60 degrees, British Columbia,  
1961-.

1200. STOTT, D.F., Geol. Surv. Can.:  
Jurassic and Cretaceous Minnes Group, Alberta and British Columbia,  
1978-.

1201. TEMPELMAN-KLUIT, D., Geol. Surv. Can.:  
Stratigraphy, structure and metallogeny of the northern part of the Intermontane Belt (Whitehorse trough) in the Canadian Cordillera,  
1977-.

See:

Reconnaissance geology Laberge map area, Yukon; Geol. Surv. Can.,  
Paper 78-1A, p. 61-66, 1978.

1202. TIPPER, H.W., Geol. Surv. Can.:  
Biostratigraphic study of Mesozoic rocks in the Intermontane and Insular Belts of the Canadian Cordillera, 1975-.

See:

Jurassic stratigraphy of the Whitesail Lake map area, British Columbia;  
Geol. Surv. Can., Paper 79-1A, p. 31, 32, 1979.

Jurassic biostratigraphy of Skidegate Inlet, Queen Charlotte Islands;  
ibid., p. 396, 1979.

1203. VERMA, H.M., TELFORD, P.G. and NORRIS, G., Ontario Geol. Surv.:  
Geology and economic minerals of the Paleozoic and Mesozoic rocks of the Moose River Basin, Ontario, 1977-80.

See:

Surface and subsurface geology of the Smoky Falls area, James Bay Lowland; Ontario Geol. Surv., Misc. Paper 82, p. 135-138, 1978.

Geological studies east of the Abitibi River in the vicinity of Onakawana, District of Cochrane; Ontario Geol. Surv., OFR 5253, 1978.

## STRATIGRAPHY/STRATIGRAPHIE

Cretaceous stratigraphy and lignite occurrences in the Smoky Falls area, James Bay Lowland; preliminary lithological logs from the 1978 drilling programme; Ontario Geol. Surv., OFR 5255, 1978.

During the fall of 1977, three drill holes, totalling 147 metres were drilled in the area east of Abitibi River, near Onakawana in order to test the geophysical anomalies indicated by an earlier geophysical survey. Cretaceous rocks were encountered in one of the three drill holes. Devonian high was encountered in another. The third hole penetrated only Pleistocene formations. Palynological analyses of samples from the three drill holes enabled better zonation of boundaries.

During the summer of 1978 outcrop reconnaissance surveys were carried out along Adam Creek, a tributary of the Mattagami River. Eight drill holes totalling 1180 metres on a general east-west line along the southern margin of the Moose River Basin were put down. While the drillhole samples await detailed analysis, preliminary results indicate the occurrence of lignite in four of the eight drill holes. A significant result of the field survey was the discovery of lignite outcrops on Adam Creek.

- 1204. WADE, J.A., Geol. Surv. Can.:  
Regional subsurface geology of Mesozoic and Cenozoic rocks of the Atlantic continental margin, 1972-.
- 1205. WILLIAMS, G.L., Geol. Surv. Can.:  
Palynostratigraphy and paleoecology of the Mesozoic and Cenozoic rocks of the Atlantic Continental margin, 1971-.

STRATIGRAPHY/STRATIGRAPHIE

CENOZOIC/CENOZOIQUE

1206. MATHEWS, W.H. and ROUSE, G.E., Univ. British Columbia (Geological Sciences):  
Tertiary stratigraphy of the Quesnel area, British Columbia, 1976-79.
1207. MIALL, A.D., Geol. Surv. Can.:  
Stratigraphy and sedimentology of the Tertiary sediments of the eastern Arctic, 1977-.
1208. PROUDFOOT, D.N., MORAN, S.R. and RUTTER, N.W., Alberta Research Council (Geology Div.), Univ. Alberta (Geology):  
Quaternary geology and stratigraphy of the Medicine Hat-Lethbridge area, Alberta, 1978-80; Ph.D. thesis (Proudfoot).  
To develop a physical stratigraphic framework in the thick complex valley fill sequences of the Lethbridge-Medicine Hat area. Correlation will be based primarily on the till portions of the stratigraphic sequence. Preliminary conclusions from the first summer's field work indicate that three or four individual till sheets can be recognized and correlated between the relatively closely spaced sections in the Medicine Hat area on the basis of their physical and mineralogical properties.
1209. YORATH, C.J., Geol. Surv. Can.:  
Stratigraphy and structure of the Pacific Continental Slope Shelf using manned and unmanned submersibles, 1977-.
1210. YOUNG, F.G., Geol. Surv. Can.:  
Cenozoic geology of the Beaufort - Mackenzie Basin, 1977-.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

ALBERTA/ALBERTA

1211. CURRIE, J.B., Univ. Toronto (Geology):  
Mechanism and development of fractures in sedimentary strata, 1970-.  
Field and laboratory work has been directed at study of fracture development in Upper Cretaceous sandstones and in Mississippian carbonates of the Alberta Basin. Laboratory experiments on strength anisotropy point to significant fracturing effects that may arise during artificial stimulation of fluid reservoirs in the subsurface.
1212. CHARLESWORTH, H.A.K., KILBY, W.E., WRIGHTSON, C.B. and HILL, K.C., Univ. Alberta (Geology):  
Structure and stratigraphy of Luscar and adjacent formations near Mountain Park, Grande Cache and Cadomin, Alberta, 1976-80; M.Sc. theses (Kilby, Wrightson, Hill).  
To develop, modify and apply numerical computer-based techniques to the study of coal bearing and adjacent strata in the Rocky Mountain Foothills of Alberta, and to determine the detailed structure and stratigraphy of the coal bearing and adjacent strata near Mountain Park, Grande Cache and Cadomin, Alberta.
1213. GILL, J.F. and CURRIE, J.B., Univ. Toronto (Geology):  
An investigation of natural fractures in Cardium strata of the Ricinus Field, Alberta, 1977-79; M.A.Sc. thesis (Gill).  
When considering secondary recovery of oil from the Ricinus reservoir through water flooding, a significant consideration relates to the presence and distribution of fracture permeability. The study examines the types and numbers of natural fractures to be expected in the reservoir, the relationship between fracture trends and structural trends in the field, and the relation between fracture incidence and the lithology of Cardium rocks.
1214. LANGENBERG, C.W., Alberta Research Council (Geology Div.):  
Structural analysis of macrosopic structures in the Shield of north-eastern Alberta, 1976-80.  
To design procedures for analysing and displaying macrosopic structures in structurally complex area; to relate smaller scale structures to macrosopic structures; to establish relationships between structural elements and polymetamorphic history; and to obtain a more detailed geologic history.

BRITISH COLUMBIA/COLOMBIE-BRITANNIQUE

1215. BROWN, R.L. and PSUTKA, J.F., Carleton Univ. (Geology):  
Structural investigation of the Shuswap metamorphic core complex, British Columbia, 1972-; M.Sc. thesis (Psutka).

See:

The Selkirk fan structure of the southeastern Canadian Cordillera; Geol. Soc. Am., Bull. vol. 89, p. 548-558, 1978.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

Structural evolution of the southeast Canadian Cordillera: A new hypothesis; Tectonophysics, vol. 48, p. 133-151, 1978.

Stratigraphic correlation and facies changes in the northern Selkirk mountains, southern Canadian Cordillera, Can. J. Earth Sci., vol. 15, p. 1129-1140, 1978.

The eastern flank of Frenchman Cap dome in Shuswap terrane has been mapped on a scale of 1:50,000; a 4 km thick stratigraphic succession has been established that rests conformably on gneissic rocks and is overlain with uncertain contact relationships by Proterozoic rocks of probable Kaza Group. Direct correlation eastward with strata in the Selkirk mountains is not possible due to disruption by a major fault zone along the valley of the Columbia River. Most recent displacement along this shallow northeast dipping zone was normal to oblique slip; the Selkirk terrane has moved northeastward downslope off the Shuswap terrane.

We intend to continue the study of Frenchman cap dome and surrounding area, the Columbia River fault zone, and the western flank of the Selkirk mountains.

1216. CAMPBELL, R.B., Geol. Surv. Can.:  
Geology of the Cariboo Mountains, British Columbia, 1968-.
1217. DANNER, W.R., Univ. British Columbia (Geological Sciences):  
Plate tectonics, stratigraphy and paleontology of the Paleozoic and early Mesozoic of southwestern British Columbia and adjacent parts of Washington State, 1967-80.  
Work continuing on laboratory examination of carbonates and cherts to identify microfossils of Cache Creek Group, Sicker Group and Chilliwack Group. Cache Creek Group divided into western (Cache Creek Group) and Eastern (Harper Ranch Group). Cache Creek is probably an oceanic ridge sequence and Harper Ranch Group is Island Arc sequence.  
A 4th year student under writer's supervision is studying some of the rhodonite deposits on Vancouver Island in the Sicker Formation to see if they form a stratigraphic marker unit.
1218. HOY, T., British Columbia Min. Mines Pet. Res. (Geological):  
Depositional environment and Pb-Zn deposits, Purcell Supergroup, southeastern British Columbia, 1975-.  
To study the structural and stratigraphic controls of Pb-Zn mineralization in the Purcell Supergroup in southeastern British Columbia. Mapping of these rocks on the east side of the Rocky Mountain Trench, in the vicinity of the Estella and Kootenay King deposits, has been completed. Mapping on the west side of the trench, in the vicinity of the Vine and St. Eugene deposits and the Moyine fault, will continue during the 1979 field season.
1219. HOY, T. and MCMILLAN, W.J., British Columbia Min. Mines Pet. Res. (Geological):  
Structure and mineral deposits flanking Frenchman's Cap gneiss dome, southeastern British Columbia, 1978-79.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

Regional mapping along the northwestern margin of Frenchman's Cap dome in southeastern British Columbia has established a stratigraphic succession that can be projected along the northern and western margin of the dome and traced southwards through the Perry River map area. Mapping during the 1979 field season should largely complete regional structural and stratigraphic study of the margin of Frenchman's Cap dome.

1220. OLLERENSHAW, N.C., Geol. Surv. Can.:  
Structural analysis of the Fernie Basin, British Columbia, 1975-.

1221. PARRISH, R.R., ARMSTRONG, R.L., MATHEWS, W.H., CLARKE, G.C.C. and GREENWOOD, H.J., Univ. British Columbia (Geological Sciences):  
Applications of fission track dating to the thermal structure, cooling history, geomorphology and late Cenozoic tectonic history of southern Coast Mountains, British Columbia, 1978-81; Ph.D. thesis (Parrish).

Late Cenozoic uplift, faulting and tilting of the formerly subdued middle Cenozoic land surface is responsible for the rugged topography seen today in the central Coast Mountains of British Columbia. The determination of the late Cenozoic uplift rates and amounts of total uplift since middle Cenozoic time will be studied using the fission track technique on apatite. Four traverses across the Coast Mountains will be studied and the data on their cooling history will be compared to volcanic and sedimentary rocks in the Intermontane zone to facilitate reconstruction of the paleogeography during middle Cenozoic time. Apatite dates, combined with other geologic and geophysical data, will allow the evaluation and computer-assisted construction of thermal models for the Coast Mountains and its cooling history. The technique employed may also reveal present and former thermal domes that may be related to geothermal anomalies.

1222. SIMONY, P.S., GHENT, E.D., MORRISON, M., STRUIK, L. and KNITTER, C., Univ. Calgary (Geology):  
Structure and metamorphism southern Canoe River area, British Columbia, 1973-80; Ph.D. theses (Morrison Struik), M.Sc. thesis (Knitter).

Morrison mapped a portion of the Malton Gneiss. It has an upper boundary of platy gneiss and mylonite separating it from Hadrynian cover. That boundary is complicated by faulting and at least 2 phases of folding. The Gneiss mass consists of two or more sheets of ortho- and paragneiss separated by zones of Hadrynian schist at staurolite-kyanite grade. Tectonic fabric of the Malton Gneiss appears largely the result of post-Hadrynian deformation but that fabric is imprinted on older igneous and gneissic textures.

Struik essentially completed field work in Barkerville-Black Stuart Mountain area. He showed that Guyet conglomerate and Greenbury limestone of Slide Mountain Group are continuous with Black Stuart Formation. Greenbury limestone is Pennsylvanian and the lower portion of Black Stuart Formation is Middle Ordovician. The sub-Guyet-Black Stuart unconformity cuts from Middle Cambrian down to Hadrynian Kaza Group. The stratigraphic and structural data suggest a pre-Ordovician, perhaps pre-late Cambrian uplift and erosion event but do not support a Late Paleozoic Caribooan Orogeny. Tectonism includes 4 phases of faulting of which the earliest produced folded, west-directed thrusts.

## STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

Mapping westward from Soards Creek in Mica Creek area outlined major phase 3 folds. It also strongly suggests that the succession outlined by the Carelton University team overlies the succession outlined by the Calgary University team. An amphibolite-semipelite-pelite unit links the two successions and can be traced south to Rogers Pass. Knitter and Ghent completed a series of temperature and pressure determinations for the upper kyanite and sillimanite zones. These indicate 600°C and 5.6 kilobars near the sillimanite isograd with pressure increasing northward in a manner consistent with the structure.

### 1223. THOMPSON, R.I., Geol. Surv. Can.:

Detailed geological investigation of selected areas within the Foot-hills and Rocky Mountains of the Monkman Pass map area - with emphasis on the structure, 1978-.

### 1224. THORSTAD, L.E., GODWIN, C.I., ARMSTRONG, R.L. and GABRIELSE, H., Univ. British Columbia (Geological Sciences), Geol. Surv. Can.:

The Upper Triassic (?) Kutcho "Formation" of the King Salmon assemblage, 1977-79; M.Sc. thesis (Thorstad).

See:

The Lower Mesozoic King Salmon assemblage - Cry Lake map area, British Columbia; Geol. Surv. Can., Paper 79-1A, p. 21-24, 1979.

The Lower Mesozoic King Salmon assemblage forms a discrete structural belt that spans the width of the Cry Lake map-area. The rocks lie within a thrust sheet; floored by the King Salmon Thrust fault, and are bounded to the north by the Nahlin Fault. A lower division, the Upper Triassic Kutcho "Formation"; a volcano-sedimentary sequence is the major focus of the study. Upper Triassic limestone, correlated with the Sinwa Limestone caps the lower division. An upper unit, a Lower Jurassic greywacke/phyllite sequence, the Inklin Formation, overlies and is gradational with the Kutcho and Sinwa strata. Isoclinal folds with a well developed, axial planar cleavage typify the rocks. Rocks are metamorphosed to lower Greenschist facies. Chemical analyses suggest rocks of the Kutch volcano-sedimentary sequence are calc-alkaline.

## MANITOBA/MANITOBA

### 1225. KEAY, J. and BRISBIN, W.C., Univ. Manitoba (Earth Sciences):

Structural geology of the Eager Lake area, Lynn Lake District, Manitoba, 1977-79; M.Sc. thesis (Keay).

## NEW BRUNSWICK/NOUVEAU-BRUNSWICK

### 1226. GRANT, R.H. and RAST, N., London Univ. (Geology):

Carboniferous structure and stratigraphy of southern New Brunswick, 1970-80; Ph.D. thesis (Grant).

### 1227. RAST, N., GRANT, R.H., PATEL, L., DICKSON, W.L., PARKER, S. and LUTES, G.G., Univ. New Brunswick (Geology):

Caledonian-Appalachian orogenic belt, 1971-80; M.Sc. thesis (Lutes), Ph.D. theses (Grant, Patel, Dickson, Parker).

## STRUCTURAL GEOLOGY/TECTONICS/GEOLOCIE STRUCTURALE/TECTONIQUE

A comprehensive study of the Caledonides and Northern Appalachians concerned with the elucidation of structure, stratigraphy, metamorphism and intrusive activity in the belt. The actual work involves a variety of techniques ranging from intensive field work to petrofabrics and geochemistry. The main locations where active research is at present in progress are: southern New Brunswick geotraverse, central New Brunswick geotraverse, Dalhousie-Bathurst geotraverse, Girvan and Southern Highlands (Scotland).

1228. STRINGER, P., Univ. New Brunswick (Geology):

Relation of cleavage to folding in the Caledonian-Appalachian orogenic belt, 1975-82.

$S_1$  cleavage (pressure solution/crenulation cleavage partly transitional to slaty cleavage) is locally and regionally oblique to the axial surface of  $F_1$  folds in Silurian turbidites of New Brunswick and southwest Scotland. The transected folds are upright, asymmetrical and tight. Individual  $F_1$  minor fold hinges curve within the axial surface, locally facing downwards, and are incongruent with major folds. The angle between cleavage and axial surface is greater in sandstones ( $10^\circ$  to  $25^\circ$ ) than in shales ( $0^\circ$  -  $10^\circ$ ); convergent and divergent cleavage fans are centered obliquely about the axial surface. The oblique cleavage and variably plunging folds formed during folding under lateral compression inclined to the direction of layer parallel shortening and to the fold envelope. The structures are associated with decollement over Ordovician oceanic basement and progressive imbrication of the sedimentary pile during subduction.

Fracture cleavage in folded Triassic red beds in southern New Brunswick, varies from axial planar to oblique to the folds; the cleavage follows a compressive fabric in the rocks. Experimentally induced fractures on uncleaved samples are parallel to the cleavage orientation. The relationship of fracture cleavage to joints in Triassic, Carboniferous and Upper Devonian sandstones is being investigated.

### NEWFOUNDLAND/LABRADOR/TERRE-NEUVE/LABRADOR

1229. CALON, T.J., Memorial Univ. (Geology):

Structural studies of ophiolites and associated rocks, Newfoundland, 1977-80.

Detailed structural analysis, including petrofabric studies, has been started in a section through the White Hills ophiolite and its underlying dynamothermal aureole. In the peridotite emplacement structures are confined to a narrow zone at the base (<100m). Olivine microstructures in this zone, resulting from dynamic recrystallization, are indicative of dislocation creep processes at high strain rates for  $T=0.6T_m$ . A change of deformation mechanism to Coble creep may have occurred, once grain refinement was accomplished in the thrust zone. The emplacement microstructures are overprinted on microfabrics, of probable mantle origin, formed by recovery controlled recrystallization processes operating at high  $T$ /low  $\dot{\varepsilon}$ . In the aureole three fold generations are recognized. The first is related to the emplacement; E-W trending mineral lineations, parallel to  $F_1$  foldaxes, may indicate the transport direction.  $F_2$  and  $F_3$  folds, trending NW-SE, may have formed during stages of backsliding of the ophiolite.  $F_2$  mylonite zones disrupt the metamorphic sequence in the aureole. It is suggested, that the obduction of the ophiolite

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

and the formation of the inverted metamorphic sequence in the aureole can be modelled in terms of a large scale ductile shearzone.

1230. CALON, T.J. and STANDER, E., Memorial Univ. (Geology):  
Structure of the Twillingate pluton and its envelope; 1978-80;  
Ph.D. thesis (Stander).

The Twillingate trondhjemite pluton is situated in Notre Dame Bay (central Newfoundland) on the eastern margin of the Iapetus ocean. It is intruded in metabasic rocks of the Sleepy Cove Group which are interpreted as an island arc sequence. New data on the geochemistry of the pluton suggest that its formation may be related to ophiolite genesis. This project aims at a detailed structural analysis of the pluton and its envelope in order to establish the orogenic history of the terrain. Petrofabric analysis of the deformed granite has shown the existence of two types of quartz c-axis fabrics. The earliest fabric is a crossed girdle pattern with maxima perpendicular to the lineation in the pluton. It is formed by dominant prismatic slip, indicative of relatively high temperature/low strain rate conditions of deformation. The younger fabric is a cleft girdle pattern with its axis perpendicular to the foliation. It is indicative for deformation at lower temperatures or higher strain rates. The first fabric appears to be related to emplacement of the pluton and its envelope against the continental margin. The second fabric may be related to movements on the Lukes Arm fault.

1231. KENNEDY, M.J., BAZINET, J.P. and WU, T.W., Brock Univ. (Geological Sciences):  
Structural development of the axial zone of the Appalachians in Newfoundland and its relationship to adjacent regions, 1976-80;  
M.Sc. theses (Bazinet, Wu).

See:

The geologic setting of the Ming and other sulphide deposits, Consolidated Rambler Mines, northeast Newfoundland; Econ. Geol., vol. 73, p. 192-206, 1978.

Work is continuing on the stratigraphy and structural development of the Ordovician and Silurian rocks of the Botwood Zone. Detritus from the Gander River ultramafic belt and underlying metasedimentary rocks of the Gander Group is ubiquitous in the Ordovician rocks. Acadian deformation of these rocks is locally polyphase and has resulted in the formation of locally downward facing structures. No evidence of Upper Ordovician tectonism has been seen.

1232. WARDLE, R.J., Newfoundland Dep. Mines Energy (Mineral Develop. Div.):  
Regional study of the stratigraphy, tectonics and mineralization of the Labrador trough, western Labrador, 1976-80.

Field work connected with the project is now complete. A final, memoir style report is now in preparation covering the Labrador Trough between lats 54° and 55° N that will be accompanied by 1:100,000 scale regional maps and 1:50,000 detailed maps of the area.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

NORTHWEST TERRITORIES/TERRITOIRES DU NORD-OUEST

1233. BARRETT, K. and BRISBIN, W.C., Univ. Manitoba (Earth Sciences):  
Archean volcanic stratigraphy and structure of the Carr Lake area,  
District of Keewatin, Northwest Territories, 1977-79; M.Sc. thesis  
(Barrett).
1234. FALCONER, R.K.H., Geol. Surv. Can.:  
Study of the structures and origin of Baffin Bay, 1976-.
1235. FYSON, W.K., Univ. Ottawa (Geology):  
Structural patterns in metamorphic rocks, 1970-.
1236. FYSON, W.K. and DILLON-LEITCH, H., Univ. Ottawa (Geology):  
Structure and petrology of the Courageous Lake volcanic belt,  
Slave Province, Northwest Territories, 1978-; M.Sc. thesis (Dillon-  
Leitch).
1237. OKULITCH, A.V., Geol. Surv. Can.:  
Geology of the Penrhyn Fold Belt, Melville Peninsula, District of  
Franklin, 1976-.
1238. PUGH, D.C., Geol. Surv. Can.:  
Northern basin analysis program: Peel River map-area, District of  
Mackenzie and Yukon, 1971-.
1239. WILLIAMS, G.K., Geol. Surv. Can.:  
Northern basin analysis program: Great Bear, Redstone and Great  
Slave map-areas, District of Mackenzie, 1971-.
1240. YOUNG, F.G., Geol. Surv. Can.:  
Northern basin analysis program: Firth River and Horton River map-  
areas, District of Mackenzie and Yukon Territory, 1971-.

NOVA SCOTIA/NOUVELLE-ÉCOSSE

1241. DOYLE, E.M. and BARR, S.M., Acadia Univ. (Geology):  
Geology of the Bear River area, Nova Scotia, 1977-78; M.Sc. thesis  
(Doyle).
- The area of study covers approximately 200 sq. km and stretches from Acadia Valley in the southwest to Clementsport in the northeast. Mapping was completed on a scale of 1:15,840 during the summer of 1978. The rocks have been mapped as Halifax Formation (Ordovician), White Rock Formation (Ordovician-Silurian), and Torbrook Formation (Devonian). These have been intruded by large numbers of mafic igneous sills (at least two types). Petrographic studies and geochemical analyses for major and minor immobile elements are being done to determine the petrogenesis and tectonic settings of these intrusions. Structural data including bedding, cleavage, fold axes, lineations, kink bands, joints and fault orientations have been collected. In the field two cleavages were recognized. The earlier cleavage is interpreted to be a compaction cleavage, whereas the later cleavage is related to folding in the area and is axial planar. Kink bands and joints formed later. Analysis of these structures is continuing.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

1242. KEPPIE, J.D., SMITH, P. and MURPHY, J.B., Nova Scotia Dep. Mines: Geological - geochemical surveys-Sub-project 4.6: structural and metamorphic geology, 1978-79.
1243. STEVENS, G.R., Acadia Univ. (Geology):  
Primary crystallization structures as control of cooling and fabric development in Triassic basalts, Bay of Fundy, Nova Scotia, 1975-79.  
Development of polygonal cell structures ('honeycomb'), nodular structure, and columnar jointing in congealing basalts provides regular planar networks for outward migration of vapor and heat. These in turn result in hydrothermal alteration and silicification of basalt in concentric polygonal zones adjacent to the planar surfaces, chilled selvages, and textural differences in and within these zones. Columnar jointing forms as contraction takes advantage of a regular pre-existing micro-fracture network, generated by shearing forces in the flowing viscous mass. Polygonal cells, which mimic angular pillows, are formed by interference of dilating congelation spheres which grow about randomly distributed centres in a static cooling mass. As distribution of such centers approaches close-packing regularity, the resultant polygonal cells approach dodecahedral shape. These relationships have been demonstrated both in the field and by computer modelling, and physical modelling. Differential weathering of hydrothermally altered zones between congelation spheres, produces nodular (botryoidal) structure.
1244. TRAPASSO, L.S. and STEVENS, G.R., Acadia Univ. (Geology):  
Tectonic and metamorphic history of the Torbrook syncline, Nova Scotia, 1977-79; M.Sc. thesis (Trapasso).  
Lower to Mid-Paleozoic sedimentary rocks in western Nova Scotia have been deformed at least twice, subjected to low grade metamorphism, and have been intruded by numerous mafic sills and dykes and Devonian granitic magmas (Taconic and Acadian imprints are not clearly discriminated). Project will undertake detailed studies of structural elements (cleavages, lineations, fabric, joints), analyze them, and relate to metamorphism, intrusion, and tectonic events. Rocks in study area occupy well-mapped, tightly folded syncline cut by mafic dykes and sills and truncated by intrusive granite. Cordierite in spotted hornfels suggest either post-granitic deformation or cleavage-controlled growth during intrusion. Preliminary study indicates possibility that younger strata were folded on different axes from older and existence of cross folds affecting all units.

ONTARIO/ONTARIO

1245. BORRADAILE, G.J., Lakehead Univ. (Geology):  
Structural geology and metamorphism, Archean rocks, northwestern Ontario, 1978-.

See:

Transected folds - a study illustrated with examples from Canada and Scotland; Geol. Soc. Am. Bull., vol. 89, p. 481-493, 1978.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

To determine P.T conditions of metamorphism in Archean metasediments in Northwestern Ontario; to determine the inter- and intracrustaline deformation mechanisms operating in tectonic deformation of Archean rocks of Northwestern Ontario; and to analyze the total strains associated with tectonic deformation of Archean rocks, the dependence of schistosity - fold relations in a single deformation episode on the total strain state, and the application of these studies to the problems of the Archean metasedimentary terrains in Northwestern Ontario.

1246. BROWN, B.B. and BRISBIN, W.C., Univ. Manitoba (Earth Sciences):  
Structural geology of the central and eastern Lake of the Woods area, Ontario, 1975-79; Ph.D. thesis (Brown).
1247. FYSON, W.K. and CULSHAW, N., Univ. Ottawa (Geology):  
Structural evolution of gneisses, northern part of Harvey-Cardiff arch, Grenville Province, Ontario, 1976-79; Ph.D. thesis (Culshaw).
1248. MORGAN, J. and SCHWERDTNER, W.M., Univ. Toronto (Geology):  
Structural evolution of Finlayson Lake greenstone belt, Atikokan, northwestern Ontario, 1977-80.
1249. POULSEN, K.H., KEHLENBECK, M.M., and BORRADAILE, G.J., Lakehead Univ. (Geology):  
Structural and metamorphic investigations at Rainy Lake, Ontario, 1978-80; M.Sc. thesis (Poulsen).  
Study of an Archean mantled gneiss dome at Rainy Lake has been initiated. Mesoscopic and microscopic fabric data are being analysed to relate dome formation to the polyphase deformational history of the area. The mechanism of dome emplacement is being evaluated in terms of current models of diapirism.
1250. SCHWERDTNER, W.M. and LUMBERS, S.B., Univ. Toronto (Geology), Royal Ontario Mus. (Mineralogy and Geology):  
Structural evolution of western Grenville Province, Ontario, 1978-.  
See:  
Structure and lithology of Muskoka - southern Georgian Bay region; Geol. Assoc. Can./Mineral. Assoc. Can./Geol. Soc. Am., Toronto '78 Field Trips Guidebook, p. 204-212, 1978.
1251. SCHWERDTNER, W.M. and MORGAN, J., Univ. Toronto (Geology):  
Emplacement of Irene-Eltrut Lakes granitoid complex, Wabigoon Subprovince, Ontario, 1974-80; Ph.D. thesis (Morgan).  
See:  
Proc. 1978 Archean Geochemistry Conf., p. 107-126, 1978.
1252. STESKY, R.M. and HALLS, H.C., Univ. Toronto (Erindale College - Earth Planetary Sci.):  
Shock deformation at the Slate Islands, Ontario, 1976-79.

## STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

This project has centred on an analysis of the distribution, orientation, and geometry of shatter cones and on the determination of the elastic properties of selected rocks from the island. From the measurement of cone orientation, the meteorite impact point has been located near the centre of the island group and at a height of about 1.3 km above the present erosional surface. Paleomagnetic measurements have allowed us to make structural corrections for post-shock block stations at a number of shatter cone sites. After correction, the location of the shock centre does not change substantially, but the height decreases to about 1.0 km. This crater depth is comparable to the depth of other terrestrial craters of a similar size, but is less than that of lunar and mercurian craters. The shock centre is about 1.5 km further north than an earlier and more crudely determined position, a result that will affect the estimates of shock wave attenuation for this impact. Compressibility and elastic wave velocity measurements for a few selected rocks from Slate Islands show that these rocks are characterized by a very low crack porosity, less than 0.1%. The dominant crack orientations bear no simple relationship to the local shock direction, but seems to be controlled by mineral fabric. For one case of an elliptic shatter cone found in a foliated rock, the direction of elongation of the cone is within the foliation plane and appears to be in the direction of the minimum compressibility.

1253. STONE, D. and SCHWERDTNER, W.M., Univ. Toronto (Geology):  
The Sydney Lake fault zone, 1976-79; Ph.D. thesis (Stone).

A thorough, field-based study of a major transcurrent fault between the Uchi and English River Subprovinces, Ontario and Manitoba.

1254. STOTT, G.M. and SCHWERDTNER, W.M., Univ. Toronto (Geology):  
Structural analysis of the central part of the Shebandowan greenstone belt, Ontario, 1977-80; Ph.D. thesis (Stott).  
To separate the regional deformation pattern from the local, pluton-induced strain; to establish a definitive relationship between the shape of the main Shebandowan ore body (Inco Mine) and the deformation of the wall rocks.

## QUEBEC/QUEBEC

1255. BOUCHARD, M. and GOULET, N., Québec Min. Richesses Naturelles:  
Structure et stratigraphie région de Rouyn-Val d'Or, Québec, 1978-81; thèse de doctorat (Bouchard).  
Analyse du style tectonique et des patrons d'interférence.

1256. KRETZ, R., Univ. Ottawa (Geology):  
Structure, metamorphism and mineral chemistry of a portion of the Grenville Province near Ottawa, 1955-95.

See:

Distribution of Mg, Fe, and Mn in some calcic pyroxene-hornblende-biotite-garnet gneisses and amphibolites from the Grenville Province; J. Geol. , vol. 68, p. 599-619, 1978.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

A report on the metamorphism and mineral chemistry of marble has been completed for publication. A study of the structure of the marble and gneiss terrain is nearing completion. The study area shows a change in structural trend from North in the Gatineau valley to Northwest in the Coulonge valley. A study of the petrology of diabase dykes is in progress.

1257. ST-JULIEN, P., Univ. Laval (Géologie et Minéralogie):  
Contexte structurale des complexes ophiolitiques des Appalaches du Québec, 1974-80.
1258. VAN DER LEEDEN, J., and FYSON, W.K., Univ. Ottawa (Geology):  
Nature of the Grenville Front in western Québec, 1976-79; Ph.D. thesis (Van der Leeden).
1259. VENNAT, G.V. and BELAND, J., Univ. Montréal (Géologie):  
Style tectonique des groupes d'Honorat et Matapédia dans la zone de Matapédia, Gaspésie, Québec, 1978-79; thèse de maîtrise (Vennat).  
Objectif: établir le style tectonique et les relations stratigraphique des groupes d'Honorat et de Matapédia dans la zone de Matapédia de la Gaspésie Sud. L'Honorat (sous-jacent) est surtout clastique, alors que la Matapédia (sus-jacent) est surtout une série calcaire.

YUKON TERRITORY/TERRITOIRE DE YUKON

1260. CLAGUE, J.J., Geol. Surv. Can.:  
Structural geology-geomorphology, southwest Yukon, 1978-.  
See:  
The Denali fault system in southwest Yukon Territory - a geologic hazard?; Geol. Surv. Can., Paper 79-1A, p. 169-178, 1979.
1261. COOK, D.G., Geol. Surv. Can.:  
Structural studies in the Mackenzie Arc, Franklin Mountains and Colville Hills, Yukon, District of Mackenzie, 1975-.
1262. MORTENSEN, J.K., GODWIN, C.I., and ARMSTRONG, R.L., Univ. British Columbia (Geological Sciences):  
The internal geology and regional structural setting of an Upper Devonian - Mississippian volcanic sedimentary sequence in the Pelly Mountains, Yukon Territory, 1977-78; M.A.Sc. thesis (Mortensen).  
A three-part study is being carried out on a structurally complex sequence of Paleozoic and Lower Mesozoic strata in the Pelly Mountains of Southeastern Yukon Territory. Aspects of the geology of the area that are being investigated in detail are: 1) internal geology and regional structural setting of a tectonic slice of Devono-Mississippian volcanics and sediments in the Seagull Creek-Ketza River area; 2) detailed geology of an exposure of the Devono-Mississippian sequence west of Seagull Creek (the MM deposit); and 3) economic implications of massive Zn-Pb-Ba sulphide deposits hosted within the Devono-Mississippian volcanic pile.  
Field work is completed for the project. Detailed petrologic examinations of the volcanic strata are in progress, as are Rb/Sr and K/Ar geochronometric, major and trace element geochemical, and lead

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

isotope studies. The analytical data will be used for lithologic correlations within the Devono-Mississippian volcanic belt and as a basis for speculations concerning the origin of the volcanics.

1263. NORRIS, D.K., Geol. Surv. Can.:  
Structural geology of northern Yukon Territory and northwestern District of Mackenzie, 1969-.
1264. TEMPELMAN-KLUIT, D., Geol. Surv. Can.:  
Stratigraphy, structure and metallogeny of Pelly Mountains and Yukon Plateau, Yukon Territory, 1973-.

See:

Five occurrences of transported synorogenic clastic rocks in Yukon Territory; Geol. Surv. Can., Paper 79-1A, p. 1-12, 1979.

GENERAL/GENERALITES

1265. HARRIS, I.M., Geol. Surv. Can.:  
Structural and stratigraphic synthesis of the Phanerozoic rocks in Eastern Canada, 1973-.
1266. KING, L.H., Geol. Surv. Can.:  
Bedrock and surficial geology, Grand Banks, 1973-80.
1267. KUMARAPELI, P.S., Concordia Univ. (Geology):  
Tectonic environment of the Ottawa-Boston seismic zone, 1978-81.  
The western part of the Boston-Ottawa seismic zone (Western Québec Zone) extends from the northern part of the Champlain Valley northwestward through Montréal area into the Canadian Shield to form an elliptical epicentral pattern. The seismicity of the area is generally low to moderate but several potentially damaging shocks ( $M>6$ ) with large felt areas have occurred during the last 450 years. In this general region are some highly populated areas and areas where nuclear power industry is concentrated. However, the nature of the lithospheric stresses as well as the relationships between tectonic features and seismicity of the region are poorly understood, although such knowledge is basic to estimating the seismic risk in the area. The immediate aim is to achieve an understanding of the lithospheric stresses in the region. In areas of low to moderate seismicity, measurement of stress by in situ techniques, may be the most valuable method to evaluate the stress distribution. The work can be carried out in three stages: 1) summer 1978: field work for site selections; 2) summer 1979: carry out preliminary stress measurements at 6 selected sites; 3) summer 1980: depending on the success of stage carry out additional stress measurements at other selected sites in the area. Twelve possible sites have been studied during the summer of 1978.

1268. LONCAREVIC, B.D., Geol. Surv. Can.:  
Study of the boundaries of lithospheric plates, 1977-.
1269. NANCE, R.D., St. Francis Xavier Univ. (Geology):  
An investigation of the utility of Gulf Coast salt domes for the storage or disposal of radioactive wastes, 1978-.

STRUCTURAL GEOLOGY/TECTONICS/GEOLOGIE STRUCTURALE/TECTONIQUE

Petrofabric and structural studies of selected Gulf Coast salt domes as part of a multidisciplinary project aimed at evaluating the suitability of Gulf Coast salt domes for the isolation of radioactive wastes.

1270. SONNENFELD, P., Univ. Windsor (Geology):  
The Phanerozoic Tethys, 1977-79.
1271. SOUTHER, J.G., Geol. Surv. Can.:  
Study of the Cenozoic evolution of the western Cordillera, 1977-.
1272. STAUFFER, M.R., Univ. Saskatchewan (Geological Sciences):  
Geometry of deformed rocks, 1965-.  
The latest work to be completed involves making measurements on large clasts in rocks while viewing down their plunge in order to determine the approximate state of strain undergone by the rocks.
1273. WILLIAMS, H., HAWORTH, R. and KEPPIE, J.D., Memorial Univ. (Geology), Bedford Instit. Oceanog., Nova Scotia Dep. Mines:  
Time of deformation, geophysical and metallogenic maps of entire Appalachian Orogen, 1977-.

See:

Tectonic lithofacies map of Appalachian Orogen; Memorial Univ., Map no. 1.

Magnetic anomaly map of Appalachian Orogen is 50% complete (Williams). Gravity (Bougeur anomaly) map of Appalachian Orogen 50% complete (Haworth). Time of deformation map (Canadian Appalachians) 80% complete - ready for final compilation and smoothing (Keppie).

VOLCANOLOGY/VOLCANOLOGIE

1274. AYRES, L.D., Univ. Manitoba (Earth Sciences):  
Volcanic stratigraphy in the Amisk Group at Amisk Lake, Saskatchewan,  
1977-81.
- In the Amisk Group at Missi Island, in the western part of the Flin Flon greenstone belt, there is an upward change from subaqueous mafic volcanism dominated by flows to subaerial felsic to intermediate volcanism dominated by pyroclastic rocks. Two distinct subaerial environments are present: a lower distal environment represented by tuff and an upper proximal environment represented by tuff-breccia.
1275. BARAGAR, W.R.A., Geol. Surv. Can.:  
Volcanology of the Yellowknife Group, District of Mackenzie, 1962-.
1276. BERGER, B. and SHEGEI.SKI, R.J., Lakehead Univ. (Geology):  
Volcanic stratigraphy of Western Lake St. Joseph, Ontario, 1978-80;  
M.Sc. thesis (Berger).
- The Western Lake St. Joseph area exhibits complex folding and faulting. In spite of this structural complexity, detailed mapping has outlined general subdivisions of the volcanic stratigraphy in this area. Preliminary investigation suggests the presence of at least two and possibly three volcanic cycles. A cycle constitutes a mafic base and felsic top and the boundary between cycles is marked by clastic and chemical sedimentation. Petrographic, petrochemical and trace element studies are presently underway and will be used to interpret the stratigraphic and tectonic history of the area.
1277. BERMAN, R.G. and ARMSTRONG, R.L., Univ. British Columbia (Geological Sciences):  
Petrology of the Coquihalla volcanic series, near Hope, British Columbia, 1977-79; M.Sc. thesis (Berman).
- The Coquihalla volcanic series consists of acid to intermediate extrusive and intrusive rocks which have an areal extent of roughly 30 km<sup>2</sup>, near Hope, British Columbia. The volcanic series rests disconformably on the Jurassic-Cretaceous Eagle granodiorite and on Cretaceous Pasayten Group sediments. Distinctive avalanche breccias occur along the southern boundary of the area, where the volcanic basin has been downfaulted against Eagle and Pasayten Group rocks.
- The oldest members of the volcanic stratigraphy are acidic pyroclastic rocks which have an overall thickness of approximately 2000 meters. Later igneous activity produced andesite-dacite domes and dykes, followed by a more mafic, zoned stock which forms Coquihalla Mountain.
- Three K-Ar dates averaging 20.9 my are concordant with a Rb-Sr isochron constructed from rocks representative of the entire stratigraphic sequence. The Coquihalla volcanics are coeval with other calc-alkaline centers in the Pemberton volcanic belt, and their origin can be related to Juan de Fuca plate subduction in the Early Miocene.
- Major and trace element chemistry is being used to quantitatively model the igneous evolution of the volcanic series.

VOLCANOLOGY/VOLCANOLOGIE

1278. CHURCH, B.N. British Columbia Min. Mines Pet. Res. (Geological):  
Tertiary stratigraphy and resources potential in south-central  
British Columbia, 1977-79.

See:

Uranium and Thorium in Tertiary alkaline volcanic rocks in south-central British Columbia; Western Miner, vol. 51, no. 5, p. 33-34, 1978.

Shackanite and related analcrite - bearing lavas in British Columbia; Can. J. Earth Sci., vol. 15, no. 10, p. 1669-1672, 1978.

To further define the regional stratigraphy, structure, history, and resources of the Tertiary rocks of southern British Columbia.

1279. GIBSON, H.L., HUNTER, A.D., MOORE, J.M., Jr., and WATKINSON, D.H., Carleton Univ. (Geology):

Stratigraphy, petrology and alteration of Archean andesite and rhyolite in the Blake River Group, Abitibi belt, Québec, 1977-79; M.Sc. theses (Gibson, Hunter).

Areas around the Aldermac and Norbec Mines, Québec, afford good exposures of andesite and rhyolite flows and pyroclastics, and their hydrothermally altered equivalents. Transitional relations, textural relicts, and minor-element chemistry demonstrate that many flows and breccias, formerly identified as rhyolite, are actually andesites silicified around hydrothermal vents. Cycles of silica and chlorite replacement accompanied volcanic activity; early, altered rocks are included as fragments in later, less altered deposits. Because hydrothermal centres are closely associated with base metal deposition, criteria are being evolved to distinguish primary siliceous rocks from altered varieties, as an exploration guide.

1280. GODWIN, C., CARNE, R., and ANDERSON, M., Univ. British Columbia (Geological Sciences):

Rare earth and trace element contents in barite from the Tom Deposit, MacMillan Pass, Yukon Territory, 1978-79; M.Sc. theses (Carne, Anderson).

A series of located samples at increasing distances from massive ore in the stratiform Tom deposit, Yukon Territory, have been analysed for REE. Other trace element contents are to be determined. Zoning is expected.

1281. MOORE, J.M., Jr., MORTON, R.L. and AYER, J.A., Carleton Univ. (Geology), Ontario Geol. Surv.:

Petrology and stratigraphy of metavolcanic rocks in the Grenville Supergroup, eastern Ontario, 1976-79.

See:

Volcanic stratigraphy and chemistry, Grenville Province, eastern Ontario; Abstracts with Programs, GAC/MAC/GSA Ann. Meeting (Toronto), p. 460, 1978.

## VOLCANOLOGY/VOLCANOLOGIE

In the course of detailed re-mapping of the Clarendon Lake area (NTS 31C/14, northeast  $\frac{1}{4}$ ) new stratigraphy was established for the succession including the Tudor metabasalts and overlying, more siliceous, central volcanic complexes, all inferred to be 1300-1250 Ma in age. Petrographic and chemical data of 150 samples have been compiled and interpreted. The Tudor succession, of olivine tholeiite and tholeiite, has been divided into three sybcycles. It is succeeded conformably by tholeiitic andesite, dacite, and rhyolite in the north of the area, and unconformably by calc-alkali basalt, andesite and dacite in the eastern parts. Three centres of intermediate and silicic volcanism are marked by intrusive and extrusive breccias, and varied subvolcanic intrusions. Volcanogenic metasediments and carbonate rocks separate the siliceous tholeiites from the calc-alkali rocks. Despite regional metamorphism to upper greenschist-low amphibolite facies, chemical trends are coherent for most major and trace elements determined.

1282. STEVENS, G.R. and LIEW, M., Acadia Univ. (Geology):  
Geochemistry and petrology of Triassic tachylite glass, North Mountain,  
Nova Scotia, 1976-79.
1283. THURSTON, P.C. and HODDER, R.W., Univ. Western Ontario (Geology):  
Cyclical volcanism in the Uchi-Confederation Lakes area - physical  
and geochemical aspects, 1976-79; Ph.D. thesis (Thurston).  
A stratigraphic, volcanologic and trace element geochemical study  
of three basalt to rhyolite cycles.
1284. THURSTON, P.C., HODDER, R.W. and FRYER, B.J., Ontario Geol. Surv.,  
Univ. Western Ontario (Geology):  
Cyclical volcanism in the Uchi-Confederation Lakes area - physical  
volcanology and trace element geochemistry, 1975-79; Ph.D. thesis  
(Thurston).
- See:  
Metamorphic and tectonic evolution of the Uchi-English River Subprovince;  
Geol. Surv. Can., Paper 78-10, p. 49-62, 1978.  
Involves deciphering stratigraphy, physical volcanology and trace  
element geochemistry of 3 superposed mafic to felsic volcanic cycles.  
Rare earth and trace element geochemistry is complete. Studies of  
physical processes will be complete by Spring, 1979.
1285. VERPAELST, P. and GELINAS, L., Québec Min. Richesses Naturelles:  
Complexes rhyolitiques de la région de Rouyn-Noranda, Québec, 1977-79.

ORGANIZATIONS REPORTING/ETABLISSEMENTS DECLARANTS

Acadia University, Department of Geology, Wolfville, Nova Scotia B0P 1X0	Brock University, Department of Geological Sciences, St. Catharines, Ontario L2S 3A1
Alberta Research Council, Geology Division, 11315-87 Avenue, Edmonton, Alberta T6G 2C2	Calgary University, Department of Geology, Calgary, Alberta T2N 1N4
Alberta University, Department of Geology, Edmonton, Alberta T6G 2E1	Canada Centre for Mineral and Energy Technology (CANMET), Department of Energy, Mines and Resources, 555 Booth Street, Ottawa, Ontario K1A 0G1
Alberta University, Department of Zoology, Edmonton, Alberta T6G 2E9	Carleton University, Department of Geology, Ottawa, Ontario K1S 5B6
BP Exploration Canada Limited, Geological Services, 333-5th Avenue S.W., Calgary, Alberta T2P 3B6	Concordia University, Department of Geology, 1455 de Maisonneuve Blvd. W., Montréal, Québec H3G 1M8
Brandon University, Department of Geology, Brandon, Manitoba R7A 6A9	Dalhousie University, Department of Geology, Sir James Dunn Building, Halifax, Nova Scotia B3H 3J5
Bristol University, Department of Geology, Bristol, England BS8 1TR	Ecole Polytechnique, Département de Génie Minéral, Campus de l'Université de Montréal, Case postale 6079, Succ. "A", Montréal, Québec H3C 3A7
British Columbia University, Department of Geological Sciences, 2075 Wesbrook Place, Vancouver, British Columbia V6T 1W5	Fisheries-Environment Canada, Canada Centre for Inland Waters (CCIW), 867 Lakeshore Road, P.O. Box 5050, Burlington, Ontario L7R 4A6
British Columbia University, Department of Geophysics and Astronomy, Vancouver, British Columbia V6T 1W5	Fisheries-Environment Canada, Hydrology Research Division, Water Resources Branch, Ottawa, Ontario K1A 0E7
British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Division, Victoria, British Columbia V8V 1X4	

Fisheries-Environment Canada,  
Inland Waters Branch,  
3303-33rd Street N.W.,  
Calgary, Alberta  
T2L 2A7

Geological Survey of Canada,  
Department of Energy, Mines  
and Resources,  
601 Booth Street,  
Ottawa, Ontario  
K1A 0E8

Gulf Canada Resources Inc.,  
Geological Services,  
P.O. Box 130,  
Calgary, Alberta  
T2P 2H7

Indian and Northern Affairs (DIAND),  
P.O. Box 1500,  
Yellowknife, Northwest Territories  
X1A 2P1

Lakehead University,  
Department of Geology,  
Postal Station P,  
Thunder Bay, Ontario  
P7B 5E1

Laurentian University,  
Department of Geology,  
Sudbury, Ontario  
P3E 2C6

Laval University,  
Département de Géologie et Minéralogie,  
Cité universitaire,  
Québec, Québec  
G1K 7P4

Manitoba Department of Mines, Resources  
and Environmental Management,  
Manitoba Geological Services Branch,  
993 Century Street,  
Winnipeg, Manitoba  
R3C 0W8

Manitoba University,  
Department of Earth Sciences,  
Winnipeg, Manitoba  
R3T 2N2

McGill University,  
Department of Geological Sciences,  
3450 University Street,  
Montréal, Québec  
H3A 2A7

McGill University,  
Redpath Museum,  
859 Sherbrook St. W.,  
Montréal, Québec  
H3A 2K6

McMaster University,  
Department of Geography,  
Hamilton, Ontario  
L8S 4K1

McMaster University,  
Department of Geology,  
1280 Main Street,  
Hamilton, Ontario  
L8S 4M1

Memorial University of Newfoundland,  
Department of Geology,  
St. John's, Newfoundland  
A1B 3X5

Université de Montréal,  
Département de Géographie,  
C.P. 6128, Succ. "A",  
Montréal, Québec  
H3C 3J7

Université de Montréal,  
Département de Géologie,  
C.P. 6128, Succ. "A",  
Montréal, Québec  
H3C 3J7

Mount Allison University,  
Department of Geology,  
Sackville, New Brunswick  
E0A 3C0

National Research Council,  
Division of Building Research,  
Ottawa, Ontario  
K1A 0R7

New Brunswick University,  
Department of Geology,  
Box 4400,  
Fredericton, New Brunswick

New Brunswick University,  
Department of Geology,  
Tucker Park,  
P.O. Box 5050,  
Saint John, New Brunswick  
E2L 4L5

New Brunswick Department of Natural Resources,  
Mineral Resources Branch,  
P.O. Box 6000,  
Fredericton, New Brunswick  
E3B 5H1

New Brunswick Department of Natural Resources,  
Mineral Resources Branch,  
P.O. Box 1519,  
Sussex, New Brunswick  
EOE 1P0

Newfoundland Department of Mines and Energy,  
Mineral Development Division,  
P.O. Box 4750,  
St. John's, Newfoundland  
A1C 5T7

Nova Scotia Department of Mines,  
1690 Hollis Street,  
P.O. Box 1087,  
Halifax, Nova Scotia  
B3J 2X1

Ontario Ministry of the Environment,  
Water Resources Branch,  
Suite 100, 135 St. Clair Avenue West,  
Toronto, Ontario  
M4V 1P5

Ontario Ministry of Natural Resources,  
Ontario Geological Survey,  
11th Floor - 77 Grenville Street,  
Toronto, Ontario  
M5S 1B3

Ottawa University,  
Département de Géographie,  
Ottawa, Ontario  
K1N 6N5

Ottawa University,  
Department of Geology,  
Ottawa, Ontario  
K1N 6N5

Polar Continental Shelf Project,  
Department of Energy, Mines & Resources,  
880 Wellington Street,  
Ottawa, Ontario

Université du Québec à Québec,  
Institut National de la Recherche Scientifique (INRS-Pétrole),  
555, boul. Henri IV,  
Ste-Foy, Québec  
G1V 4C7

Ministère des Richesses Naturelles du Québec,  
1620, boul. de l'Entente,  
Québec, Québec  
G1S 4N6

Ministère des Richesses Naturelles du Québec,  
Direction Générale de l'Energie,  
1305, chemin Ste-Foy,  
Québec, Québec  
G1S 4N5

Queen's University,  
Department of Geography,  
Kingston, Ontario  
K7L 3N6

Queen's University,  
Department of Geological Sciences,  
Kingston, Ontario  
K7L 3N6

Royal Military College,  
Department of Civil Engineering,  
Kingston, Ontario

Royal Ontario Museum,  
Department of Invertebrate Palaeontology,  
100 Queen's Park,  
Toronto, Ontario  
M5S 2C6

Royal Ontario Museum,  
Department of Vertebrate Palaeontology,  
100 Queen's Park,  
Toronto, Ontario  
M5S 2C6

St. Francis Xavier University,  
Department of Geology,  
Antigonish, Nova Scotia  
B2G 1C0

Saskatchewan Museum of Natural History,  
Wascana Park,  
Regina, Saskatchewan  
S4P 3V7

Saskatchewan Research Council,  
Geology Division,  
30 Campus Drive,  
Saskatoon, Saskatchewan

Saskatchewan University,  
Department of Geological Sciences,  
Saskatoon, Saskatchewan  
S7N 0X1

Saskatchewan Department of Mineral Resources,  
Saskatchewan Geological Survey,  
1211-1914 Hamilton Street,  
Regina, Saskatchewan  
S4P 4V4

Université de Sherbrooke,  
Département de Géographie,  
Sherbrooke, Québec  
J1K 2R1

Simon Fraser University,  
Department of Physics,  
Barnaby, British Columbia  
V5A 1S6

Toronto University,  
Department of Civil Engineering,  
Toronto, Ontario  
M5S 1A1

Toronto University,  
Department of Geography,  
Sidney Smith Hall,  
100 St. George Street,  
Toronto, Ontario  
M5S 1A1

Toronto University,  
Department of Geology,  
Toronto, Ontario  
M5S 1A7

Toronto University,  
Erindale College,  
Department of Geology,  
3359 Mississauga Road,  
Mississauga, Ontario  
L5L 1C6

Toronto University,  
Scarborough College,  
Department of Geography,  
West Hill, Ontario  
M1C 1A4

Toronto University,  
Scarborough College,  
Department of Geology,  
West Hill, Ontario  
M1C 1A4

Toronto University,  
Department of Physics,  
Toronto, Ontario  
M5S 1A7

Toronto University,  
Department of Zoology,  
Toronto, Ontario  
M5A 1A7

Waterloo University,  
Department of Earth Sciences,  
Waterloo, Ontario  
N2L 3G1

Western Ontario University,  
Department of Geology,  
London, Ontario  
N6A 5B7

Windsor University,  
Department of Geology,  
Windsor, Ontario  
N9B 3P4

LIST OF GRANT AWARDS IN THE EARTH SCIENCE FOR 1978/LISTE DES SUBVENTIONS ATTRIBUEES AUX SCIENCES DE LA TERRE 1978

DEPARTMENT OF ENERGY, MINES AND RESOURCES, RESEARCH AGREEMENTS/MINISTERE DE L'ENERGIE, DES MINES ET DES RESSOURCES, CONVENTIONS DE RECHERCHE

BRITISH COLUMBIA

University of British Columbia

Clowes, R.M. (Geophysics and Astronomy)  
Interpretation of ocean bottom seismometer reflection/  
refraction data on Explorer/Juan de Fuca plates, \$5,900.00

Clowes, R.M. (Geophysics and Astronomy)  
Interpretation of a marine deep seismic sounding survey in  
Winona Basin off Canada's west coast, \$4,000.00

Sinclair, A.J. (Geological Sciences)  
Quantitative approach to metallogeny of the Cordillera of  
British Columbia, \$10,000.00

Slawson, W.F. (Geophysics and Astronomy)  
Radon detection \$4,600.00

Simon Fraser University

Huntley, D.J. (Physics)  
Thermoluminescence dating of ocean sediments \$6,500.00

ALBERTA

University of Alberta

Evans, M.E. (Physics)  
Chemical demagnetization investigations of Canadian Proterozoic  
redbeds, \$6,000.00

Morton, R.D. (Geology)  
Oxygen isotope fractionations and geothermometers among minerals  
of uranium deposits, \$8,000.00

Lambert, R. St J. (Geology)  
Geochronology and origin of the Malton gneiss and related  
complexes, British Columbia, \$3,000.00

Rankin, D. (Physics)  
Magnetotelluric measurements on the Churchill-Superior boundary,  
\$6,000.00

Scarfe, C.M. (Geology)  
The petrology of the Level Mountains volcanic centre, northern  
British Columbia, \$3,000.00

Strausz, O.P. (Hydrocarbon Research Centre)  
The thermal maturation of Alberta oil and bitumen and the role  
of molecular oxygen therein, \$17,000.00

SASKATCHEWAN

University of Saskatchewan

Braun, W.K., Caldwell, W.G.E. (Geological Sciences)  
Biostratigraphy and microfaunas of the Mesozoic rocks  
in western Canada, \$7,000.00

Forester, R.W. (Geological Sciences)  
Oxygen, hydrogen, and carbon isotope study of some uranium  
ore deposits in Saskatchewan, \$5,000.00

King, M.S. (Geological Sciences)  
Thermal conductivity of permafrost materials, \$5,600.00

MANITOBA

University of Manitoba

Green, A.G. (Earth Sciences)  
Interpretation of the 1977 Cooperative Seismic Surveys  
Data, \$7,000.00

Hall, D.H. (Earth Sciences)  
Satellite magnetometer data applied to major structures  
in the Precambrian, \$4,000.00

ONTARIO

Carleton University

Brown, R.L. (Geology)  
Stratigraphy and structural problems in Selkirk/Shuswap  
Terrane, British Columbia, \$7,000.00

Mainwaring, P.R. (Geology)  
Assimilation of country rocks and genesis of the Zenith  
zinc deposit, Schreiber, Ontario, \$1,490.00

Ranalli, G. (Geology)  
Probabilistic seismic risk analysis, \$800.00

Watkinson, D.H. (Geology)  
Ni-Cu-Fe sulfide - carbonate - silicate relationships in  
altered ultramafic rocks and their host volcanic rocks,  
\$1,350.00

Laurentian University

James, R.S. (Geology)  
Gabbro-anorthosite intrusions in the Sudbury area, Ontario,  
\$3,100.00

McMaster University

Clarke, W.B. (Physics)

Development of a new prospecting method for uranium -  
measurements of  $^{3}\text{He}/^{4}\text{He}$ , He, Ne and tritium in groundwater  
and lakes, \$10,000.00

Crocket, J.H. (Geology)

Gold mineralization in Archean greenstone belts: a study of  
genetic relationships using neutron activation analysis,  
\$9,500.00

Ford, D.C. (Geography)

Radiometric dating of molluscs and speleothems, and Pleistocene  
paleoclimates, \$8,500.00

McNutt, R.H. (Geology)

Geochronological studies in the English River gneiss belt and  
Wabigoon greenstone belt, northwestern Ontario, \$5,000.00

Risk, M.J. (Geology)

Stratigraphy and ecology in the Windsor mudflat, \$10,060.00

University of Toronto

Beales, F.W. (Geology)

Paleomagnetic studies of Mississippi Valley type ore deposits,  
\$10,500.00

Dunlop, D.J. (Physics)

Multicomponent magnetizations and metamorphic overprinting in  
the paleomagnetism of Precambrian rocks, \$3,000.00

Edwards, R.N. (Physics)

Geomagnetic variations in the period band 2 sec. to 5 min. and  
the mapping of crustal conductivity anomalies, \$5,000.00

Fawcett, J.J. (Geology)

Petrological and isotopic studies of the Rainy Lake Dome,  
Ontario, \$3,000.00

Gittins, J. (Geology)

Metamorphic petrology of high grade metamorphic rocks in  
the vicinity of Wilson Lake, Labrador, Newfoundland, \$1,000.00

Jopling, A.V. (Geography)

Continuous monitoring of density flows in a lacustrine environment,  
\$8,500.00

Kimberley, M.M. (Geology)

Trace element contents of Huronian and Archean pyrites, Elliot  
Lake area, Ontario, \$5,500.00

- Ludvigsen, R. (Geology)  
Ordovician trilobite biostratigraphy of western Canada,  
\$4,000.00
- Naldrett, A.J. (Geology)  
Platinum group elements and other trace elements in magmatic  
Ni-Cu sulfide ores associated with different host rocks,  
\$11,500.00
- Norris, G. (Geology)  
Jurassic-Cretaceous palynostratigraphy of western and Arctic  
Canada: a comparative study with European stratotypes, \$2,000.00
- Ritchie, J.C. (Botany)  
Studies on Quaternary marine benthic ostracodes from the Canadian  
Arctic Archipelago and Beaufort Sea area of the Arctic Ocean,  
\$5,500.00
- Roegiers, J.C. (Civil Engineering)  
Validity of the 'Equivalent Medium Analogy' as applied to  
fractured rock, \$16,461.00
- Schwerdtner, W.M. (Geology)  
Internal structure and emplacement of Irene-Eltrut Lakes  
Granitoid Complex, Ontario, \$5,000.00
- Strangway, D.W. (Geology)  
Applications of audiofrequency magnetotellurics, \$19,400.00
- West, G.F. (Physics)  
Interpretation of Manitoba Project Refraction Data, \$3,600.00
- Westgate, J.A. (Geology)  
Fission-track dating of late Cenozoic bentonites and  
pyroclastic deposits in the Yukon Territory and adjacent  
areas of Alaska, \$6,500.00
- University of Waterloo
- Barnes, C.R. (Earth Sciences)  
Ordovician conodont biostratigraphy of Devon Island, Northwest  
Territories, \$8,000.00
- Legault, J.A. (Earth Sciences)  
Palynological investigation of the Road River and Besa River  
formations, northwestern Canada, \$5,000.00
- Macqueen, R.W. (Earth Sciences)  
Geology of Devonian radioactive and metal-bearing shales,  
Pine Point region, District of Mackenzie, \$2,500.00
- Reardon, E.J. (Earth Sciences)  
Precipitation and dissolution of manganese oxyhydroxides on  
stream sediment and their relation to mineral exploration,  
\$7,000.00

Roberts, R.G. (Earth Sciences)

A study of the volcanic and structural setting of gold deposits associated with volcanic and volcanic-sedimentary rocks in Canadian Precambrian Shield, \$5,900.00

University of Western Ontario

Palmer, H.C. (Geophysics)

Verification of a geomagnetic excursion as recorded Maumee Silts, \$5,000.00

University of Windsor

Gravenor, C.P. (Science and Mathematics)

Paleomagnetism of the Meadowcliffe and Southwold Tills in southern Ontario, \$3,500.00

York University

Cannon, W.H. (Physics)

Tidal displacement fields and the triggering of earthquakes, \$3,000.00

QUEBEC

Ecole Polytechnique

David, M. (Génie minéral)

Automatisation des calculs géostatistiques de ressources minérales, avec référence spéciale aux problèmes de l'uranium, \$15,000.00

David, M.W.D. (Génie minéral)

Classification automatique des portions économiques des gisements uranifères, \$6,000.00

Gagné, J.M. (Génie physique)

Séparation isotopique de l'uranium: méthodes spectroscopiques et lasers, \$20,000.00

Gélinas, L. (Génie minéral)

Etude des complexes rhyolitiques de la région de Rouyn-Noranda, Québec, \$7,000.00

Trzcienski, W.E., Jr. (Mineral Engineering)

Petrology and tectonics of the Cambro-Ordovician sequence in the Quebec Appalachians, \$2,000.00

McGill University

Bird, J.B. (Geography)

Periglacial geomorphic processes in east Baffin Island, \$3,300.00

Doig, R. (Geological Sciences)

Uranium deposits associated with granitic rocks, Grenville Province, Canada, \$6,000.00

Francis, D.M. (Geological Sciences)

The evolution and mineral potential of the Cape Smith Fold Belt, Québec, \$6,000.00

Jensen, A.G. (Mining and Metallurgical Engineering)

VLF (wave-tilt, Radiohm) and Lf applications to near horizontal multilayer and simple discontinuous geological structures, \$14,000.00

Université de Montréal

Gray, J.T. (Géographie)

Permafrost studies in the forest tundra ecotone in the Labrador trough on the southwest coast of Ungava Bay, \$4,500.00

Hubert, C. (Géologie)

Analyse stratigraphique intégrée des roches, \$7,000.00

Mamet, B.L. (Géologie)

Upper Paleozoic microfacies (foraminifers and algae), \$9,000.00

Institut National de la Recherche Scientifique

Achab, A. (INRS-Pétrole)

Etude palynologique du Paléozoïque inférieur de l'Est du Canada et des îles de l'Arctique, \$5,200.00

Université du Québec à Chicoutimi

Dimroth, E. (Sciences de la Terre)

Volcanologie physique et sédimentologie d'un bassin volcanosédimentaire Archéen, \$10,000.00

Université du Québec à Montréal

de Boutray, B. (Sciences de la Terre)

Cartographie des dépôts meubles sur la côte ouest de la Baie d'Ungava, Québec, \$6,700.00

Goulet, N. (Sciences de la Terre)

Etude tectonique de certaines zones critiques situées dans les roches volcaniques et volcanoclastites de la région de Rouyn-Noranda, Québec, \$7,000.00

Prichonnet, G.P. (Sciences de la Terre)

Cartographie des dépôts meubles dans la région de St-Hyacinthe, Granby, Sutton; Province de Québec (feuilles au 1/50,000 31 H/10, 31 H/7 et 31 H/2), \$7,400.00

NEW BRUNSWICK

New Brunswick Research and Productivity Council

Abbott, D.

The evaluation of New Brunswick shale for the production of pottery, \$7,500.00

University of New Brunswick

Burke, K.B.S. (Geology)

Development of a vibrator source for shallow seismic exploration, \$7,500.00

Krakiwsky, E.J. (Surveying Engineering)

Mathematical models and estimation procedures in inertial geodesy, \$12,000.00

Rast, N. (Geology)

The structure of the metamorphic aureole of the Skiff Lake plutonic part of the Pokiok Monzonite and its mineralogy, \$2,900.00

Wein, R.W. (Geology)

Interactions between elements as they effect plant-soil heavy metal relationships in the Arctic, \$6,000.00

NOVA SCOTIA

Acadia University

Stevens, G.R. (Geology)

Burial diagenesis and origin of clay minerals in Mesozoic-Tertiary strata on the Newfoundland continental shelf, \$8,000.00

Tugwell, S.M. (Economics)

Nova Scotia gypsum - a preliminary economic assessment, \$14,000.00

Dalhousie University

Beaumont, C. (Oceanography)

Rheology of the lithosphere in Canada from the correlation of Bouguer gravity and topography as a function of age, \$4,850.00

Beaumont, C. (Oceanography)

A comparison observed and theoretical Holocene apparent sea level variation in Atlantic Canada, \$9,500.00

Hall, J.M. (Geology)

Continental margin and ocean crust geological investigations through the further development of the Bedford Institute shipborne electric drill, \$10,000.00

Huntley, D.A. (Oceanography)

Direct measurements of coastal waves and currents, southern Gulf of St. Lawrence, \$5,000.00

Ogden, J.G. III (Biology)

Pollen and radiocarbon stratigraphy of late Quaternary environments in the Parrsboro, Nova Scotia area, \$5,000.00

Pielou, E.C. (Biology)

Interpretation of the geographic and depth distribution of recent Foraminifera (II), \$5,000.00

Piper, W.J.W. (Geology)

Geology of coastal bays in Labrador and Nova Scotia, \$13,500.00

Nova Scotia Technical College

Brown, J.D. (Civil Engineering)

Preliminary investigation: geotechnical properties of deep sea sediments, \$2,000.00

NEWFOUNDLAND

Memorial University

Dunsiger, A.D. (Engineering and Applied Sciences)

Ocean sediment properties using acoustic sensing, \$6,000.00

King, A.F. (Geology)

Precambrian stratigraphy, sedimentology and paleontology of the Avalon Zone, eastern Newfoundland, \$7,000.00

Murthy, G.S. (Physics)

Paleomagnetic investigations of Precambrian and younger rock units from the Island of Newfoundland and their bearing on the interpretation of Newfoundland geologic structure, \$8,600.00

Skevington, D. (Geology)

Biostratigraphy of late Ordovician graptolitic argillite, west-central Newfoundland, \$5,000.00

Stewart, I.C.F. (Physics)

Seismotectonic studies of Newfoundland, \$1,050.00

Williams, H. (Geology)

Geology of the Stephenville map-area (12B), Newfoundland, \$12,000.00

DEPARTMENT OF FISHERIES AND ENVIRONMENT CANADA, WATER RESOURCES RESEARCH SUPPORT PROGRAM, RESEARCH AGREEMENTS/MINISTÈRE DES PECHE ET ENVIRONNEMENT CANADA, PROGRAMME DE SUBVENTION A LA RECHERCHE SUR LES RESSOURCES EN EAU, CONVENTIONS DE RECHERCHE

University of British Columbia

Clarke, G.K.C. (Geophysics and Astronomy)

Glacier beds: their relationship to ice dynamics, glacier hydrology and erosion, \$12,500.00

University of Victoria

Geesey, G.G. (Biochemistry and Microbiology)

The distribution of heavy metals among constituents of the Lower Fraser sediments, \$17,000.00

University of Alberta

Gill, D. (Geography)

Potential environment modification of the Slave River Delta by upstream river development, \$13,000.00

University of Saskatchewan

Gray, D.M. (Hydrology)

Hydrology of the Prairie environment, \$75,000.00

University of Guelph

Kay, B.D. (Land Resource Science)

Development of a model to describe subsurface transport of solutes as a consequence of freezing conditions, \$13,500.00

McMaster University

Crocket, J.H. (Geology)

Geochemical pathway studies of arsenic, selenium and palladium in freshwater system by neutron activation analysis, \$8,000.00

Emery, J.J. (Civil Engineering and Engineering Mechanics)

Finite element simulation of glacier flow, \$11,000.00

Kramer, J.R. (Geology)

Geochemical factors and terrain response to environmental contaminants, \$20,000.00

Woo, M-K (Geography)

Hydrology of nival-regime basins in the vicinity of Resolute, Cornwallis Island, Northwest Territories, \$8,000.00

Queen's University

Patterson, R.J. (Geological Sciences)

- I. Reversibility of attenuation processes in unconsolidated materials, at a proposed landfall site.
- II. Geochemical controls on the mobility of radioactive components in the groundwater flow system of Chalk River, Ontario, \$6,900.00 (plus AECL funding \$11,806.00)

University of Waterloo

Cherry, J.A. (Earth Sciences)

Groundwater flux as a mechanism for contaminant migration into surface waters, \$11,000.00

University of New Brunswick

Lajtai, E.Z. (Geology)

Identification, description and environmental significance of prehistoric and postglacial flood features, Saint John and Nashwaak Rivers, Fredericton area, New Brunswick, \$10,000.00