NATIONAL ADVISORY COMMITTEE ON RESEARCH IN THE GEOLOGICAL SCIENCES

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CURRENT RESEARCH IN THE GEOLOGICAL SCIENCES IN CANADA 1967-68

Compiled by J. F. Henderson

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J.F. Henderson

GEOLOGICAL SURVEY OF CANADA ' PAPER 68-54

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CONTENTS

	Page
Introduction	v
Use of the compilation	v
Areal geology	1
Alberta	1
British Columbia	1
Manitoba	4
New Brunswick	6
Newfoundland and Labrador	7
Nova Scotia	8
Northwest Territories	8
Ontario	11
Quebec	16
Saskatchewan	19
Yukon Territory	20
Data storage and retrieval	22
Engineering geology	26
Geochemistry	31
Geochronology	56
Geomorphology and glaciology	61
Geophysics	65
Electrical	65
Gravity	66
Heat Flow	73
Magnetic	74
Radioactivity	78
Seismic	79
General problems	84
Mineral Deposits	89
Base metals	89
Ferrous metals	98
Radioactive deposits	99
Other metals	100
Industrial minerals	104
Petroleum	108
Coal and peat	110
General problems	111
Mineralogy	123
Specific minerals	123
General problems	127
Palaeontology	135
Petrology and petrography	149
British Columbia	149
Manitoba	150
New Brunswick	150
Newfoundland and Labrador	150
Nova Scotia	152
Northwest Territories	152
Ontario	153
Quebec	156
Saskatchewan	160
Yukon Territory	161
General problems	161

Page

Pleistocene and groundwater 171
Alberta 171
British Columbia 177
Manitoba 178
New Brunswick 180
Newfoundland and Labrador 181
Nova Scotia 181
Northwest Territories 181
Ontario 182
Prince Edward Island 188
Quebec 188
Saskatchewan 191
Yukon Territory 192
General problems 193
Sedimentology 202
Stratigraphy and palaeontology 220
Precambrian 220
Cambrian to Silurian 221
Devonian to Permian 225
Mesozoic 231
Cenozoic 236
General problems 237
Structural geology 241
Alberta 241
British Columbia 242
Manitoba 243
Newfoundland and Labrador 245
Nova Scotia 245
Northwest Territories 246
Ontario 247
Quebec 250
Saskatchewan 252
General problems 253

CURRENT RESEARCH IN THE GEOLOGICAL SCIENCES IN CANADA, JUNE, 1967 - MAY, 1968

INTRODUCTION

The research projects listed in this compilation have been obtained from the universities, federal and provincial departments of mines, and other non-industrial institutions carrying on research in the geological sciences in Canada. With the exception of a few projects, the bibliography does not include research by mining and oil company geologists. The survey was made between September 1967 and April 1968 and records research in progress from about June 1967 to May 1968.

The compilation is useful in enabling research workers to see who are working in similar fields and on similar problems. It indicates lines of geological research receiving the greatest attention and, by inference, those being neglected. It also serves to record the large number of research projects undertaken as graduate theses in our universities, of which the results are available only in manuscript form in university libraries.

Success in assembling project titles for a compilation such as this depends on the response of institutions and research workers. Acknowledgment is made in particular to those who assembled and forwarded the data on the research projects in the institutions under their direction. However, in spite of general excellent cooperation, many projects on which no information was received are not included. So that succeeding compilations may be more complete, any reader doing research projects or knowing of projects that have been omitted, is requested to send information on them to the Secretary, National Advisory Committee on Research in the Geological Sciences, 601 Booth Street, Ottawa.

Use of the Compilation

In this compilation, projects are grouped under main headings that cover the different branches of the geological sciences. The reader can thus find out readily the research in progress in any field in which he is interested. Many projects that seem to fall equally well under more than one heading are repeated under these headings. An author index lists after each author the numbers of projects, as listed in the bibliography, on which he is currently engaged. Thus by reference to the author index, the fields of research and projects of any worker may be found.

AREAL GEOLOGY

Alberta

1. CARRIGY, M.A., GREEN, R., MELLON, G.B., RESEARCH COUNCIL OF ALBERTA-
ALBERTA BEDROCK MAPPING, ALBERTA, 1962-69.
TO COMPLETE A GEOLOGICAL MAP OF NORTHERN ALBERTA, NORTH OF 56 DEGREES, ON A SCALE OF 1-500,000, AND COMPILATION OF A GEOLOGICAL MAP OF ALBERTA, SCALE 1-1,250,000.

2. GODFREY, J.D., RESEARCH COUNCIL OF ALBERTA-
PRECAMBRIAN GEOLOGY OF NORTHEASTERN ALBERTA.
SYNTHESIZING OF DATA DEALING WITH THE PETROGRAPHIC, CHEMICAL, AND PHYSICAL PROPERTIES OF PRECAMBRIAN ROCKS OF NORTHEASTERN ALBERTA.

3. LEECH, G.B., GEOL. SURV. CANADA-
KANANASKIS LAKES (WEST HALF), BRITISH COLUMBIA AND ALBERTA, 1963-.
SEE CRETACEOUS STRATA IN THE WEST FACE OF THE ROCKY MOUNTAINS, GEOL. SURV. CAN., PAPER 67-1, PP. 72, 73, 1967.

4. OLLERENSHAW, N.C., GEOL. SURV. CANADA-
STRUCTURE AND STRATIGRAPHY OF THE LAKE MINNEWANKA AND WILDCAT HILLS (WEST HALF) MAP-AREAS, SOUTHERN FOOTHILLS OF ALBERTA, 1966-68.

5. PRICE, R.A., MOUNTJOY, E.W., GEOL. SURV. CANADA-
OPERATION BOW-ATHABASCA - A RECONNAISSANCE STUDY OF THE BEDROCK GEOLOGY ACROSS THE ROCKY MOUNTAINS IN THE REGION BETWEEN MOUNT ASSINIBOINE AND MOUNT ROBSON, ALBERTA AND BRITISH COLUMBIA, 1965-69.
THE PROJECT IS CONCERNED WITH THOSE ASPECTS OF THE PHYSICAL STRATIGRAPHY, GEOLOGIC STRUCTURE, AND IGNEOUS AND METAMORPHIC PETROLOGY OF THIS REGION THAT BEAR ON THE TECTONIC EVOLUTION OF THE CANADIAN ROCKIES.
SEE GEOL. SURV. CAN., PAPER 67-1A, PP. 106-112, 1967.

British Columbia

6. CAMPBELL, R.B., GEOL. SURV. CANADA-
MCBRIDE MAP-AREA, BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1965-.
SEE GEOL. SURV. CAN., PAPER 67-1, P. 53, 1967.

AREAL GEOLOGY

7. CARR, J.M., ELLIOTT, T.M., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
BRENDA LAKE AREA NEAR PERCHLAND, BRITISH COLUMBIA, 1966-67.
GEOLOGICAL MAPPING OF A PART OF THE OKANAGAN BATHOLITH CONTAINING THE BRENDA COPPER-MOLYBDENUM DEPOSIT. SEE B.C. MINISTER OF MINES ANNUAL REPT. 1966.

8. COATES, J., GEOL. SURV. CANADA-
MANNING PARK, BRITISH COLUMBIA, 1 INCH TO 1 MILE, 1964-.
SEE GEOL. SURV. CAN., PAPER 67-1, P. 36, 1967.

9. FYLES, J.T., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
THE JORDAN RIVER AREA, BRITISH COLUMBIA, 1967-68.
STUDY OF THE STRUCTURE AND LEAD-ZINC MINERALIZATION IN ROCKS OF THE SHUSWAP METAMORPHIC COMPLEX. PART OF THE CORDILLERAN STRUCTURE PROJECT.

10. GABRIELSE, H., BLUSSON, S.L., HANFIELD, R.C., UPITIS, U., GEOL. SURV. CANADA-
OPERATION SELWYN - WRIGLEY AND WATSON LAKES, JENNINGS RIVER, SEKWI MOUNTAINS, NAHANNI AND FRANCES LAKE AREAS, NORTHWEST TERRITORIES, AND BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1965-.
SEE GEOL. SURV. CAN., PAPER 67-1, P. 44, 1967.

11. GROVE, E.W., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
GEOLOGY AND MINERAL DEPOSITS OF THE STEWART-LONG LAKE AREA, NORTHWESTERN BRITISH COLUMBIA, 1964-66.
EMPHASIS ON LITHOLOGY OF THE HAZELTON AND BOWSER GROUPS, THE RELATIONSHIP OF MINERAL DEPOSITS, THE DISTRIBUTION OF PLUTONS OF THE COAST CRYSTALLINE BELT, SPECIAL TRACE ELEMENT RELATIONSHIPS WITHIN AND BETWEEN MINERAL DEPOSITS. SEE B.C. REPT. OF THE MINISTER OF MINES, ANNUAL REPT. 1964-66.
GEOLOGY AND MINERAL DEPOSITS OF THE ANYOX AREA, BRITISH COLUMBIA, 1964-.
SPECIAL EMPHASIS ON STRUCTURAL RELATIONSHIPS, STUDY OF TRACE ELEMENT DISPERSION, MINERALIZATION, VARIATIONS WITHIN THE COAST CRYSTALLINE BELT. SEE GRANBY BAY AREA, B.C. REPT. OF THE MINISTER OF MINES, PP. 57-61, 1965.
GEOLOGY OF THE UNUK-BOWSER-BEAR RIVER PORTION OF THE STEWART COMPLEX, NORTHWESTERN BRITISH COLUMBIA, 1964-67.
STRUCTURE AND LITHOLOGY OF THE TAKLA-HAZELTON-

AREAL GEOLOGY

BOWSER ASSEMBLAGES, DISTRIBUTION AND COMPOSITION OF THE COAST CRYSTALLINE BELT PLUTONS, SPECIAL EMPHASIS ON THE METAMORPHIC ZONES AND DISTRIBUTION OF MINERAL DEPOSITS.

12. KIRKHAM, R.V., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
GEOLOGY AND MINERAL DEPOSITS OF THE HUDSON BAY RANGE, SMITHERS, BRITISH COLUMBIA, 1963-68, PH.D. THESIS.
SEE GLACIAL GULCH MOLYBDENUM DEPOSIT, MINISTER OF MINES, B.C., ANN. REPT. 1966, PP. 86-90.

13. LEECH, G.B., GEOL. SURV. CANADA-
KANANASKIS LAKES (WEST HALF), BRITISH COLUMBIA AND ALBERTA, 1963-.
SEE CRETACEOUS STRATA IN THE WEST FACE OF THE ROCKY MOUNTAINS, GEOL. SURV. CAN., PAPER 67-1, PP. 72, 73, 1967.

14. MONGER, J.W.R., GEOL. SURV. CANADA-
GREENWOOD MAP-AREA, BRITISH COLUMBIA, 1 INCH TO 1 MILE, 1965-67.

15. MULLER, J.E., GEOL. SURV. CANADA-
VANCOUVER ISLAND, 1 INCH TO 4 MILES, 1963-.
GEOLOGICAL MAPPING OF VANCOUVER ISLAND INCLUDING PARTS OF ALBERNI, VANCOUVER, BUTTE INLET AND ALERT BAY.

16. PRICE, R.A., MOUNTJOY, E.W., GEOL. SURV. CANADA-
OPERATION BOW-ATHABASCA - A RECONNAISSANCE STUDY OF THE BEDROCK GEOLOGY ACROSS THE ROCKY MOUNTAINS IN THE REGION BETWEEN MOUNT ASSINIBOINE AND MOUNT ROBSON, ALBERTA AND BRITISH COLUMBIA, 1965-69.
THE PROJECT IS CONCERNED WITH THOSE ASPECTS OF THE PHYSICAL STRATIGRAPHY, GEOLOGIC STRUCTURE, AND IGNEOUS AND METAMORPHIC PETROLOGY OF THIS REGION THAT BEAR ON THE TECTONIC EVOLUTION OF THE CANADIAN ROCKIES.
SEE GEOL. SURV. CAN., PAPER 67-1A, PP. 106-112, 1967.

17. REESOR, J.E., BLATTNER, P., FROESE, E., GEOL. SURV. CANADA-
THOR-ODIN GNEISS DOME, WEST UPPER ARROW LAKE, BRITISH COLUMBIA, 1963-.
A DETAILED STUDY OF PART OF SHUSWAP TERRANE.

AREAL GEOLOGY

18. REESOR, J.E., FROESE, E., GEOL. SURV. CANADA-
PINNACLE PEAKS, BRITISH COLUMBIA, 1 INCH TO 1 MILE, 1967-.
INVESTIGATION OF INTERMEDIATE ZONE GNEISS DOME COMPLEX TO COMPARE AND CONTRAST ITS STRUCTURAL AND METAMORPHIC DEVELOPMENT WITH THE DEEPER ZONE DOMES OF VALHALLA AND THOR-ODIN.

19. RODDICK, J.A., SOUTHER, J.G., BAER, A.J., HUTCHISON, W.W., GEOL. SURV. CANADA-
RECONNAISSANCE OF COAST MOUNTAINS, BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1963-71.
SEE GEOL. SURV. CAN., PAPER 66-33, 1966.

20. SIMONY, P.S., ELLISON, A.H., WIND, G., UNIV. OF CALGARY-
GEOLOGY OF THE DOGTOOTH MOUNTAINS AND OF ADJACENT PORTIONS OF THE ROCKY MOUNTAIN TRENCH, BRITISH COLUMBIA, 1965-69, M.SC. THESES (ELLISON, WIND).

21. TIPPER, H.W., GEOL. SURV. CANADA-
OPERATION SKEENA RIVER, BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1966-.
INVESTIGATION OF MESOZOIC STRATIGRAPHY OF SKEENA RIVER REGION. SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 93.

22. TIPPER, H.W., CAMPBELL, R.B., GEOL. SURV. CANADA-
BONAPARTE RIVER MAP-AREA, BRITISH COLUMBIA, 1964-68.
SEE GEOL. SURV. CAN., MAP 3-1966.

23. WHEELER, J.O., GEOL. SURV. CANADA-
BIG BEND AND ROGERS PASS MAP-AREAS, BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1962-.
SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 95.

Manitoba

24. ANDERSON, D.T., UNIV. OF MANITOBA-
PHOTOGEOLOGY FOR PROJECT PIONEER AREA, NORTHEASTERN MANITOBA, 1965-70.
PROJECT PIONEER IS A JOINT UNIVERSITY OF MANITOBA - MANITOBA MINES BRANCH, GEOLOGICAL STUDY IN A PORTION OF EASTERN MANITOBA CENTERED ON BISSETT, MANITOBA. THE PHOTOGEOLOGICAL RESEARCH IS AN INTEGRAL PART OF THIS STUDY.

AREAL GEOLOGY

25. ANDERSON, D.T., UNIV. OF MANITOBA-
PHOTOGEOLOGY OF THE AREA EAST OF LAKE WINNIPEG, 1967-70.

26. BELL, C.K., GEOL. SURV. CANADA-
SIPIWESK, NELSON HOUSE, CROSS LAKE, AND WEKUSKO LAKE, MANITOBA, 1963-69.
INCLUDES MAPPING OF THE CHURCHILL-SUPERIOR GEOLOGICAL PROVINCES BOUNDARY. SEE GEOL. SURV. CAN., PAPER 66-1, P. 133, 1966.

27. BOSTOCK, H.H., CUMMING, L.M., NORFORD, B.S., SANFORD, B.V., NORRIS, A.W., PRICE, L.L., CRAIG, B.G., MACDONALD, B.C., GEOL. SURV. CANADA-
OPERATION WINISK - AN AIR-SUPPORTED RECONNAISSANCE SURVEY OF BEDROCK AND SURFICIAL GEOLOGY OF HUDSON BAY LOWLANDS OF MANITOBA, ONTARIO AND QUEBEC, 1966-68.
SEE OPERATION WINISK, GEOL. SURV. CAN., PAPER 68-1, 1968.

28. HAUGH, I., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES-
GEOLOGY OF SPLIT LAKE AREA, MANITOBA, 1 INCH TO 3,000 FEET, 1965-67.

29. NORRIS, A.W., CRAIG, B.G., CUMMING, L.M., BOSTOCK, H.H., NORFORD, B.S., MACDONALD, B.C., PRICE, L.L., SANFORD, B.V., GEOL. SURV. CANADA-
OPERATION WINISK, HUDSON BAY LOWLANDS, MANITOBA, ONTARIO AND QUEBEC, 1 INCH TO 16 MILES, 1967-.
AN AIR-SUPPORTED GEOLOGICAL RECONNAISSANCE SURVEY OF THE HUDSON BAY LOWLANDS COVERING AN AREA IN EXCESS OF 125,000 SQUARE MILES.

30. ROUSELL, D.H., MANITOBA MINES BRANCH (PART TIME), LAURENTIAN UNIV.-
GEOLOGY OF THE ISKWASUM LAKE AREA, MANITOBA, 1966-67.

31. TUREK, A., HAUGH, I., MCRITCHIE, D., WEBER, W., SCOATES, R.F.J., PHILLIPS, K.A., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES- ANDERSON, D.T., BRISBIN, W.C., CHURCH, N.B., HALL, D.H., TURNOCK, A.C., WILSON, H.D.B., AND GRADUATE STUDENTS, UNIV. OF MANITOBA-
PROJECT PIONEER, 1965-71.
A COOPERATIVE COMPREHENSIVE FIELD AND LABORATORY STUDY OF THE RICE LAKE-BERESFORD LAKE AREA OF SOUTH-

EASTERN MANITOBA. INCLUDES DETAILED MAPPING, PHOTO-GEOLOGIC INTERPRETATION, AEROMAGNETIC INTERPRETATION, DEEP CRUSTAL SEISMIC SURVEY, GRAVITY, ROCK MAGNETISM, REGIONAL AND LOCAL DETAILED STRUCTURAL ANALYSES, GAMMA-RAY SPECTROMETRY, PETROLOGY, MINERALOGY, CHEMISTRY, TRACE ELEMENTS, GEOCHRONOLOGY, ECONOMIC GEOLOGY, AND STUDIES OF VOLCANICITY, SEDIMENTATION, AND METAMORPHISM.

32. WILSON, H.D.B., BRISBIN, W.C., HALL, D.H., HAJNAL, Z., MCGRATH, P., UNIV. OF MANITOBA-
THE NATURE OF THE CANADIAN SHIELD IN MANITOBA AND NORTHWESTERN ONTARIO, 1960-.
A JOINT PROJECT THAT INCLUDES STUDIES OF REGIONAL GEOLOGY AND GRAVITY (WILSON, BRISBIN) MAGNETIC (HALL, MCGRATH), SEISMIC (HALL, HAJNAL, AND BRISBIN) AND GEOCHRONOLOGIC STUDIES.

New Brunswick

33. ANDERSON, F.D., GEOL. SURV. CANADA-
MCKENDRICK LAKE, NEW BRUNSWICK, 1966-.
A STUDY OF STRUCTURE AND STRATIGRAPHY. SEE GEOL. SURV. CAN., PAPER 67-1, P. 168, 1967.

34. HAY, P.W., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
SILURIAN SEDIMENTARY AND VOLCANIC ROCKS IN SOUTHWESTERN NEW BRUNSWICK, 1965-69.
SEE GEOLOGY OF THE ST. ANDREW S - ST. GEORGE MAP-AREA, CHARLOTTE COUNTY, NEW BRUNSWICK, NEW BRUNSWICK DEPT. NATURAL RESOURCES, MAP SERIES 67-1.

35. RUITENBERG, A.A., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
GEOLOGY OF MINERALIZED BELT ON THE MASCARENE PENINSULA, AND THE COASTAL AREA BETWEEN DIGDEGUASH HARBOUR AND ST. GEORGE, CHARLOTTE COUNTY, NEW BRUNSWICK, 1967-68.

36. VAN DE POLL, H.W., RUITENBERG, A.A., HARRIS, F.R., TREMBLAY, J.H., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
GEOLOGY OF THE MOUNT PLEASANT AREA, NEW BRUNSWICK, 1962-67.
IN THIS PUBLICATION A NEW STRATIGRAPHIC TYPE SECTION FOR CARBONIFEROUS ROCKS ALONG THE SOUTHERN MARGIN OF THE CENTRAL BASIN IS PROPOSED. VERTICAL ZONAL VARIATION IN THE MOUNT PLEASANT QUARTZ LATITE ASH-FLOW TUFF DEPOSITS ARE DESCRIBED AND A CALDERA ORIGIN FOR THE HEART-SHAPED SURFACE OUTCROP OF THE SO-

CALLED MOUNT PLEASANT APPENDAGE IS PROPOSED. THE ECONOMIC ASPECTS OF THE AREA ARE DISCUSSED AND AREAS OF INTEREST OUTLINED FOR FURTHER EXPLORATION FOR TIN-MOLYBDENUM-BASE METAL MINERALIZATION. SEE CARBONIFEROUS VOLCANIC AND SEDIMENTARY ROCKS OF THE MOUNT PLEASANT AREA, NEW BRUNSWICK, REPORT OF INVESTIGATION NO. 3, DEPARTMENT OF NATURAL RESOURCES, NEW BRUNSWICK.

37. WILLIAMSON, D.H., LAURENTIAN UNIV.-
STRATIGRAPHY AND STRUCTURE OF THE BASEMENT COMPLEX OF THE NORTHEASTERN PART OF CALEDONIA MOUNTAIN, SOUTHEASTERN NEW BRUNSWICK, 1962-.
THE GEOLOGICAL MAPPING PHASE OF THIS PROJECT HAS BEEN COMPLETED. INVESTIGATIONS AND ANALYSES OF THE DIFFERENT LITHOLOGIES ARE PRESENTLY UNDERWAY TO ESTABLISH A STRATIGAPHIC SEQUENCE AND RELATIONS OF THE IGNEOUS PLUTONS TO THIS SEQUENCE.

Newfoundland and Labrador

38. BRUECKNER, W.D., MEMORIAL UNIV. OF NEWFOUNDLAND-
GEOLOGICAL PROBLEMS OF THE AVALON PENINSULA, 1959-.
THE MAIN OBJECT IS TO GAIN A FULLER UNDERSTANDING OF THE LATE PRECAMBRIAN AND EARLY PALAEOZOIC HISTORICAL GEOLOGY OF THE AREA INCLUDING SEDIMENTARY, VOLCANIC, INTRUSIVE AND DIASTROPHIC PROCESSES.

39. CHURCH, W.R., UNIV. OF WESTERN ONTARIO-
GEOLOGY OF THE BURLINGTON PENINSULA AND ADJOINING AREAS, NORTHEAST NEWFOUNDLAND, 1963-.
SEE METAMORPHIC ROCKS OF THE BURLINGTON PENINSULA AND ADJOINING AREAS OF NEWFOUNDLAND, THEIR BEARING ON CONTINENTAL DRIFT IN THE NORTH ATLANTIC, IN KAY, M., ED., STRATIGRAPHY AND STRUCTURE BEARING ON CONTINENTAL DRIFT IN THE ATLANTIC OCEAN, AMER. ASSOC. PET. GEOL., MEMOIR (IN PRESS).

40. COCKBURN, G., UNIV. OF WESTERN ONTARIO-
GEOLOGY OF THE CONFUSION BAY AREA, NORTHEAST NEWFOUNDLAND, 1966-68, M.SC. THESIS.

41. COOPER, G.E., MEMORIAL UNIV. OF NEWFOUNDLAND-
GEOLOGY OF THE TULKS HILL AREA, CENTRAL NEWFOUNDLAND, 1966-67, M.SC. THESIS.

42. KOH, I.S., MEMORIAL UNIV. OF NEWFOUNDLAND-
GEOLOGY OF THE TREPASSEY AREA, AVALON PENINSULA, NEW-

FOUNDLAND, 1967-68, M.SC. THESIS.
STRATIGRAPHY AND PETROGRAPHY OF THE ST. JOHN S FORMATION AND THE UPPERMOST PART OF THE UNDERLYING CONCEPTION GROUP (BOTH OF LATE PROTEROZOIC AGE).

43. MISRA, S.B., MEMORIAL UNIV. OF NEWFOUNDLAND-
GEOLOGY OF THE AREA BETWEEN BISCAY BAY AND CAPE RACE, AVALON PENINSULA, NEWFOUNDLAND, 1967-68, M.SC. THESIS.
STRATIGRAPHY AND PETROGRAPHY OF YOUNGER **MEMBERS** OF THE CONCEPTION GROUP AND OF THE OVERLYING ST. JOHN S FORMATION (BOTH OF LATE PROTEROZOIC AGE).

44. STEVENSON, I.M., GEOL. SURV. CANADA-
OPERATION NORTHWEST RIVER, LABRADOR, NEWFOUNDLAND, 1 INCH TO 4 MILES, 1965-.
INCLUDES THE GOOSE BAY (13F), MINIPI (13), LAC JOESEPH (23A), LAC BRULE (13D) AND LAKE WINOKAPAU (13E) MAP-AREAS. SEE GEOL. SURV. CAN., PAPER 67-1, P. 193.

45. TAYLOR, F.C., GEOL. SURV. CANADA-
OPERATION TORNGAT, LABRADOR, NEWFOUNDLAND, 1 INCH TO 8 MILES, 1966-.
SEE GEOL. SURV. CAN., PAPER 67-1, P. 195, 1967.

46. WILLIAMS, H., GEOL. SURV. CANADA-
BOTWOOD-TWILLINGATE MAP-AREA, NEWFOUNDLAND, 1 INCH TO 4 MILES, 1961-.

Nova Scotia

47. BENSON, D.G., GEOL. SURV. CANADA-
ANTIGONISH AND ST. GEORGE BAY AREA, NOVA SCOTIA, 1966-.

48. KELLEY, D.G., GEOL. SURV. CANADA-
COBEQUID MOUNTAINS, NOVA SCOTIA, 1 INCH TO 1 MILE, 1961-.
SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 175.

Northwest Territories

49. AITKEN, J.D., BALKWILL, H., MACQUEEN, R.W., COOK, D.G., MACKENZIE, W.S., GEOL. SURV. CANADA-
OPERATION NORMAN - GEOLOGY OF THE MACKENZIE PLAINS,

1968-70.
A HELICOPTER SUPPORTED RECONNAISSANCE BEDROCK AND SURFICIAL GEOLOGICAL STUDY OF THE LOWER MACKENZIE RIVER AREA (125,000 SQUARE MILES).

50. BELL, R.T., GEOL. SURV. CANADA-
ENNADAI-RANKIN AREA, NORTHWEST TERRITORIES- STRATIGRAPHIC AND STRUCTURAL STUDY OF THE HURWITZ GROUP, 1967-.

51. BOSTOCK, H.H., GEOL. SURV. CANADA-
ITCHEN LAKE, DISTRICT OF MACKENZIE, 1 INCH TO 4 MILES, 1964-.
SEE GEOL. SURV. CAN., PAPER 66-24, 1966 AND PAPER 67-1, PP. 29-33, 1967.

52. CHRISTIE, R.L., GEOL. SURV. CANADA-
STRATIGRAPHY AND AGE OF PRECAMBRIAN SEDIMENTARY ROCKS AND CONTAINED SILLS AND DYKES, EAST COAST OF CANADIAN ARCTIC ISLANDS AND NORTHWEST AND NORTH GREENLAND, 1967-70.
IN COOPERATION WITH THE GREENLAND GEOLOGICAL SURVEY.

53. CHRISTIE, R.L., FRISCH, T., GEOL. SURV. CANADA-
STRATIGRAPHY AND STRUCTURE OF PARTS OF NORTHEASTERN ELLESMERE ISLAND, 1963-69, PH.D. THESIS (FRISCH).
INCLUDES COOPERATIVE FIELD WORK AND LIAISON WITH THE GREENLAND GEOLOGICAL SURVEY. SEE OPERATION GRANT LAND, 1966, GEOL. SURV. CAN., PAPER 67-1, P. 2, 1967.

54. DAVIDSON, A., GEOL. SURV. CANADA-
ENNADAI OROGENIC BELT - KANIMAK LAKE, NORTHWEST TERRITORIES, 1 INCH TO 4 MILES, 1966-.
SEE GEOL. SURV. CAN., PAPER 67-1, PP. 19-20, 1967.

55. DINELEY, D.L., UNIV. OF OTTAWA-
PALAEZOIC GEOLOGY OF SOMERSET ISLAND, NORTHWEST TERRITORIES, 1964-69.
SEE GEOLOGICAL STUDIES IN SOMERSET ISLAND, UNIV. OF OTTAWA EXPEDITION, 1965- ARCTIC, VOL. 19, PP. 270-277.

56. FRASER, J.A., GEOL. SURV. CANADA-
ROCKNEST LAKE, DISTRICT OF MACKENZIE, NORTHWEST TERRITORIES, 1 INCH TO 4 MILES, 1964-.

AREAL GEOLOGY

SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 134.

57. GABRIELSE, H., BLUSSON, S.L., HANFIELD, R.C., UPITIS, U., GEOL. SURV. CANADA-
OPERATION SELWYN - WRIGLEY AND WATSON LAKES, JENNINGS RIVER, SEKWI MOUNTAINS, NAHANNI AND FRANCES LAKE AREAS, NORTHWEST TERRITORIES, AND BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1965-.
SEE GEOL. SURV. CAN., PAPER 67-1, P. 44, 1967.

58. GRAY, N., FORESTER, R., BARRON, L., KRANCK, E.H., MCGILL UNIV.-
GEOLOGICAL STUDIES ON BAFFIN ISLAND, NORTHWEST TERRITORIES, 1965-68, M.SC. THESIS (GRAY, FORESTER, BARRON).
A STUDY OF THE PETROLOGY AND TECTONICS OF THE MCBETH FIORD, EASTERN BAFFIN ISLAND.

59. HEYWOOD, W.W., GEOL. SURV. CANADA-
VOLCANIC-SEDIMENTARY ASSEMBLAGE NORTHEAST PART OF ENNADAI-RANKIN OROGENIC BELT, NORTHWEST TERRITORIES, 1 INCH TO 4 MILES, 1966-.
SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 20.

60. KERR, J.WM., GEOL. SURV. CANADA-
SOUTHWEST ELLESMERE ISLAND AND WESTERN DEVON ISLAND, NORTHWEST TERRITORIES, 1967-.
SEE GEOL. SURV. CAN., PAPER 68-1, 1968.

61. KERR, J.WM., TEMPLE, P.G., GEOL. SURV. CANADA-
STRATIGRAPHY AND STRUCTURE OF BATHURST ISLAND, NORTHWEST TERRITORIES, 1963-68.
SEE GEOL. SURV. CAN., PAPER 65-1, 1965.

62. REINHARDT, E.W., GEOL. SURV. CANADA-
TALTSON LAKE - FORT RESOLUTE - GREAT SLAVE LAKE AREA, DISTRICT OF MACKENZIE, NORTHWEST TERRITORIES, 1965-.
REGIONAL STUDY OF GNEISSES AND MYLONITES BETWEEN MACDONALD FAULT AND NONACHO BASIN. SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 40.

63. THORSTEINSSON, R., KERR, J.WM., GEOL. SURV. CANADA-
CORNWALLIS ISLAND AREA, NORTHWEST TERRITORIES, 1965-67.
SEE GEOL. SURV. CAN., PAPER 66-1, 1966.

AREAL GEOLOGY

64. TOZER, E.T., GEOL. SURV. CANADA-
GEOLOGICAL MAP OF THE ARCTIC, 1 TO 10 MILLION, 1966-68.
BEING PREPARED (WITH A. BERTHELSEN, DENMARK AND B.K. EGIAZOROV, U.S.S.R.) FOR THE COMMISSION FOR GEOLOGICAL MAP OF THE WORLD OF THE INTERNATIONAL GEOLOGICAL CONGRESS.

65. TRETTIN, H.P., GEOL. SURV. CANADA-
PRE-MISSISSIPPIAN GEOLOGY, NORTHEASTERN ELLESMERE ISLAND, NORTHWEST TERRITORIES, 1965-68.
SEE GEOL. SURV. CAN., PAPER 67-1A, PP. 13-18, 1967 AND PAPER 68-1, 1968 (IN PRESS).

Ontario

66. AYRES, L.D., ONTARIO DEPT. MINES-
TROUT LAKES AREA, DISTRICT OF KENORA, 1965-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 8-12.

67. BENNETT, G., ONTARIO DEPT. MINES-
BELFORD-STRACHON AREA, ONTARIO, 1965-68.
SEE ONT. DEPT. MINES, PREL. MAPS P344, P345, P346, AND P347.

68. BENNETT, G., GIGUERE, J.F., ONTARIO DEPT. MINES-
OPERATION PUKASKWA, ONTARIO (LAT. 47 DEGREES 40 MIN-86 DEGREES 20 MINUTES), 1 INCH TO 2 MILES, 1967-69.

69. BENNETT, G., RILEY, R.A., ONTARIO DEPT. OF MINES-
OPERATION LINGMAN LAKE, DISTRICT OF KENORA, ONTARIO, 1 INCH TO 2 MILES, 1967-68.
APPROXIMATELY 23,000 SQUARE MILES WERE MAPPED BY RECONNAISSANCE HELICOPTER METHODS. SEE ONT. DEPT. MINES, MISC. PAPER 11, PP. 3-8, AND PREL. MAPS, 426, 427, AND 430.

70. BOSTOCK, H.H., CUMMING, L.M., NORFORD, B.S., SANFORD, B.V., NORRIS, A.W., PRICE, L.L., CRAIG, B.G., MCDONALD, B.C., GEOL. SURV. CANADA-
OPERATION WINISK - AN AIR-SUPPORTED RECONNAISSANCE SURVEY OF BEDROCK AND SURFICIAL GEOLOGY OF HUDSON BAY LOWLANDS OF MANITOBA, ONTARIO AND QUEBEC, 1966-68.
SEE OPERATION WINISK, GEOL. SURV. CAN., PAPER 68-1, 1968.

AREAL GEOLOGY

71. BRIGHT, E.G., ONTARIO DEPT. MINES-
HALLIDAY AND MIDLOTHIAN TOWNSHIPS, DISTRICTS OF TIMISKAMING AND SUDBURY, 1 INCH TO 1/2 MILE, 1966-68.
SEE ONT. DEPT. MINES, PREL. MAPS 385 AND 386.
BEEMER, ENGLISH AND ZAVITZ TOWNSHIPS, DISTRICT OF SUDBURY, 1967-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 57-59.

72. CARD, K.D., ONTARIO DEPT. OF MINES-
BAY OF ISLANDS-MCGREGOR BAY, DISTRICT OF SUDBURY, ONTARIO, 1967-69.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 46-50.
ESPANOLA-WHITEFISH FALLS AREA, DISTRICT OF SUDBURY, 1 INCH TO 1/2 MILE, 1967-68.
PART OF A CONTINUING PROJECT TO MAP IN DETAIL THE HURONIAN FORMATION OF THE NORTH SHORE OF LAKE HURON. SEE ONT. DEPT. MINES, P.R. 1966-1, PP. 33-35 AND MAPS P322, P390, P391, AND P392.

73. CARMICHAEL, D.M., GEOL. SURV. CANADA-
HASTINGS AREA, ONTARIO, 1 INCH TO 1 MILE, 1965-.
TO ESTABLISH THE NATURE OF THE STRATIGRAPHIC SEQUENCE, METAMORPHISM AND DEFORMATION OF THE HASTINGS SYNCLINORIUM. SEE GEOL. SURV. CAN., PAPER 67-1, P. 133, 1967.

74. DAVIES, J.C., ONTARIO DEPT. OF MINES-
ATIKWA LAKE AREA, DISTRICT OF KENORA, ONTARIO, 1966-68.
SEE ONT. DEPT. MINES, MAPS P387 AND P388.

75. FRAREY, M.J., GEOL. SURV. CANADA-
LAKE PANACHE - COLLINS INLET AREA, ONTARIO, 1 INCH TO 1 MILE, 1964-.
THE STUDY OF HURONIAN ROCKS ACROSS GRENVILLE FRONT. SEE GEOL. SURV. CAN., PAPER 67-6, 1967 AND PAPER 67-1, 1967, P. 135.

76. GEUL, J.J.C., ONTARIO DEPT. OF MINES-
PARDEE AND DEVON TOWNSHIPS, THUNDER BAY DISTRICT, ONTARIO, 1967-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 23-26.

77. GIBLIN, P.E., ONTARIO DEPT. OF MINES
BATCHAWANA AREA, DISTRICT OF ALGOMA, 1 INCH TO 1/2

MILE, 1964-68.
SEE ONT. DEPT. MINES, P.R. 1966-1, PP. 28-29.

78. GIGUERE, J.F., ONTARIO DEPT. OF MINES-
GRANITEHILL LAKE AREA, DISTRICT OF THUNDER BAY, ONTARIO, 1967.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 35-37.

79. JOHNSTON, F.J., ONTARIO DEPT. MINES-
ABRAM-VERMILION LAKES AREA, DISTRICT OF KENORA, 1 INCH TO 1/2 MILE, 1965-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 16-19.

80. KUSTRA, C.R., THURSTON, P.C., ONTARIO DEPT. OF MINES-
OBONGA-LEIGH LAKES AREA, DISTRICT OF THUNDER BAY, 1966-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 29-31.

81. LOVELL, H., ONTARIO DEPT. MINES-
GEOLOGY OF EBY TOWNSHIP, DISTRICT OF TIMISKAMING, 1967-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 64-65.
BOURKES AREA, DISTRICT OF TIMISKAMING, ONTARIO, 1965-68.
SEE ONT. DEPT. MINES, PREL. MAPS 327, 328, 329, 365, 389, 409.

82. LOVELL, H., RUPERT, R., ONTARIO DEPT. MINES-
BERNHARDT AND MORRISETTE TOWNSHIPS, DISTRICT OF TIMISKAMING, ONTARIO, 1967.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 62-64.

83. LUMBERS, S.B., ONTARIO DEPT. OF MINES-
NORTH BAY AND BURWASH AREA, DISTRICTS OF NIPISSING AND SUDBURY, ONTARIO, 1 INCH TO 1 MILE, 1967-69.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 68-71.

84. MACKASEY, W.O., ONTARIO DEPT. OF MINES-
DOROTHEA, SANDRA AND IRWIN TOWNSHIPS, DISTRICT OF THUNDER BAY, 1967-68.

SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 31-35.

85. MCILWAINE, WM.H., ONTARIO DEPT. MINES-
SOUTH LORRAIN TOWNSHIP, DISTRICT OF TIMISKAMING, 1/4 INCH TO 1 MILE, 1964-68.
SEE ONT. DEPT. MINES, PREL. MAPS, 289, 325.
GEOLOGY OF THE GOWGANDA AREA, DISTRICT OF TIMISKAMING, 1/2 INCH TO 1 MILE, 1966-69.
THE GOWGANDA SILVER AREA CONSISTING OF NICOL, MILNER, VAN HISE AND HAULTAIN TOWNSHIPS IS BEING RE-MAPPED. SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 65-66. LEITH-COCHILL AREA, DISTRICT OF TIMIS-KAMING, 1/2 INCH TO 1 MILE, 1967-69.

86. MEYN, H.D., ONTARIO DEPT. OF MINES-
ROBERTS - FRALECK AREA, DISTRICT OF SUDBURY, 1 INCH TO 1/4 MILE, 1967-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967. PP. 50-52.
HUTTON AND PARKIN TOWNSHIPS, DISTRICT OF SUDBURY, 1 INCH TO 1/2 MILE, 1965-67.
SEE ONT. DEPT. MINES, PREL. REPORT 1966-1, PP. 35-37.

87. MILNE, V.G., ONTARIO DEPT. OF MINES-
REEVES - KENOGAMING AREA, DISTRICT OF SUDBURY, 1 INCH TO 1/2 MILE, 1966-68.
SEE ONT. DEPT. MINES MISC. PAPER 11, 1967, PP. 52-57.

88. NORRIS, A.W., CRAIG, B.G., CUMMING, L.M., BOSTOCK, H.H., NORFORD, B.S., MACDONALD, B.C., PRICE, L.L., SANFORD, B.V., GEOL. SURV. CANADA-
OPERATION WINISK, HUDSON BAY LOWLANDS, MANITOBA, ONTARIO AND QUEBEC, 1 INCH TO 16 MILES, 1967-.
AN AIR-SUPPORTED GEOLOGICAL RECONNAISSANCE SURVEY OF THE HUDSON BAY LOWLANDS COVERING AN AREA IN EXCESS OF 125,000 SQUARE MILES.

89. PRYSLAK, A.P., ONTARIO DEPT. OF MINES-
GEOLOGY OF THE TUSTIN-BRIDGES AREA, DISTRICT OF KENORA, 1967-69.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 14-16.

AREAL GEOLOGY

90. PYKE, D.R., ONTARIO DEPT. MINES-
LANGMUIR AND BLACKSTOCK TOWNSHIPS, DISTRICT OF TIMISKAMING, 1967-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 59-62.

91. RILEY, R.A., ONTARIO DEPT. OF MINES-
GLASGOW-RENNIE AREA, DISTRICTS OF ALGOMA AND SUDBURY, 1 INCH TO 1/2 MILE, 1966-68.
SEE ONT. DEPT. MINES, PREL. MAPS 402, 403, AND 404.

92. ROBERTSON, J.A., ONTARIO DEPT. MINES-
MASSEY AREA, DISTRICT OF SUDBURY, 1966-69.
SEE ONT. DEPT. MINES, PREL. MAP 438.

93. SHKLANKA, R., ONTARIO DEPT. OF MINES-
BRUCE LAKE AREA, DISTRICT OF KENORA, ONTARIO, 1966-68.
SEE ONT. DEPT. MINES, PREL. MAP P379, 1966.
STEEPROCK LAKE IRON AREA, ONTARIO, 1964-67.
SEE ONT. DEPT. MINES, PREL. MAP P348, 1966.

94. SKINNER, R., GEOL. SURV. CANADA-
SIOUX LOOKOUT MAP-AREA, ONTARIO, 1 INCH TO 4 MILES, 1964-.
SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 162.

95. WILSON, H.D.B., BRISBIN, W.C., HALL, D.H., HAJNAL, Z., MCGRATH, P., UNIV. OF MANITOBA-
THE NATURE OF THE CANADIAN SHIELD IN MANITOBA AND NORTHWESTERN ONTARIO, 1960-.
A JOINT PROJECT THAT INCLUDES STUDIES OF REGIONAL GEOLOGY AND GRAVITY (WILSON, BRISBIN) MAGNETIC (HALL, MCGRATH), SEISMIC (HALL, HAJNAL, AND BRISBIN) AND GEOCHRONOLOGIC STUDIES.

96. WOOD, J., ONTARIO DEPT. OF MINES (PART TIME), UNIV. OF WESTERN ONTARIO-
RAWHIDE LAKE AREA, DISTRICT OF ALGOMA, 1967-69, PH.D. THESIS.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, PP. 40-42.

AREAL GEOLOGY

Quebec

97. ALLARD, G.O., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME), ATHENS UNIV.-
NORTHEAST QUARTER, LEMOINE TOWNSHIP, DISTRICT OF CHIBOUGAMAU, 1,000 FEET TO 1 INCH, 1966-68.
A DETAILED STUDY OF THE DORE LAKE COMPLEX AND THE CHIBOUGAMAU LAKE GRANITIC COMPLEX, AND DETAILED SURVEY OF STRUCTURES WHICH MIGHT BE WORTH EXPLORING FOR ORE DEPOSITS. SEE PRELIMINARY REPORT ON NORTHWEST QUARTER RINFRET TOWNSHIP, QUEBEC DEPT. NAT. RES., P.R. 567 (IN PRESS).

98. BASSAGET, J.P., QUEBEC DEPT. OF NATURAL RESOURCES-
MANICOUAGAN CIRCULAR STRUCTURE, QUEBEC, 1 INCH TO 2 MILES, 1967-68.

99. BOSTOCK, H.H., CUMMING, L.M., NORFORD, B.S., SANFORD, B.V., NORRIS, A.W., PRICE, L.L., CRAIG, B.G., MCDONALD, B.C., GEOL. SURV. CANADA-
OPERATION WINISK - AN AIR-SUPPORTED RECONNAISSANCE SURVEY OF BEDROCK AND SURFICIAL GEOLOGY OF HUDSON BAY LOWLANDS OF MANITOBA, ONTARIO AND QUEBEC, 1966-68.
SEE OPERATION WINISK, GEOL. SURV. CAN., PAPER 68-1, 1968.

100. CHOWN, E.H., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME), LOYOLA COLLEGE-
PLUTO LAKE AREA, NORTHERN QUEBEC, 1 INCH TO 4 MILES, 1967-68.
PART OF A CONTINUING PROJECT TO MAP THE OTISH MOUNTAINS.

101. DE ROMER, H.S., QUEBEC DEPT. OF NATURAL RESOURCES-
LAC MADELEINE AREA, TOWNSHIPS OF LESSEPS, DEVILLE AND DESLANDES, COUNTY OF GASPE-NORD, 1,000 FEET TO 1 INCH, 1966-.
DETAILED MAPPING OF THE VOLCANIC AND SEDIMENTARY FORMATIONS. PROJECT WAS STARTED ON SOUTH SIDE OF THE GRANITIC MASS IN 1964 BY J.L. ROBERT WHO CARRIED IT EASTWARDLY IN 1965 AND 1966 (PREL. REPTS. 540, 549 AND 562), THE PROJECT WAS CARRIED NORTHWARD, ON THE WEST SIDE OF THE INTRUSION BY P. GIRARD IN 1965 (PREL. REPT. 563), ON THE EAST SIDE IT IS BEING CARRIED NORTHWARD BY H.S. DE ROMER. THE AREA IS THE SITE OF COPPER MINERALIZATION.

AREAL GEOLOGY

102. DIMROTH, E., QUEBEC DEPT. OF NATURAL RESOURCES-
STRATIGRAPHY, TECTONICS AND PETROLOGY OF THE LABRADOR TROUGH, QUEBEC, 1963-.
SEE PRELIMINARY REPORT ON THE DUNPHY LAKE AREA, NEW QUEBEC, QUEBEC DEPT. NAT. RES., 1967.

103. DUQUETTE, G., MATHIEU, A., QUEBEC DEPT. OF NATURAL RESOURCES-
SOUTHEAST QUARTER OF OBALSKI TOWNSHIP, CHIBOUGAMAU DISTRICT, 1,000 FEET TO 1 INCH, 1962-.
PART OF A PROGRAM WHICH AIMS AT MAPPING IN DETAIL AN ECONOMICALLY IMPORTANT SECTION OF THE CHIBOUGAMAU GREENSTONE BELT. SEE NORTHWEST QUARTER OF MCKENZIE TOWNSHIP, QUEBEC DEPT. NAT. RES., P.R. 573, 1968.

104. GITTINS, J., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME), UNIV. OF TORONTO-
MARMETTE LAKE AREA, QUEBEC, 1967-68.
A SPECIAL PROJECT TO PROVIDE A PETROLOGICAL STUDY AND ECONOMIC EVALUATION OF A NEPHELINE SYENITE BODY IN TOUSSAINT TOWNSHIP.

105. GLOBENSKY, Y., QUEBEC DEPT. OF NATURAL RESOURCES-
REVISION OF THE PORTNEUF MAP-AREA AND A MICROPALAEONTOLOGICAL INVESTIGATION OF THE TRENTON OF THE AREA, 1967-68.

106. KATZ, M.B., QUEBEC DEPT. OF NATURAL RESOURCES-
WESTERN PART OF GRENVILLE PROVINCE, QUEBEC, 1 INCH TO 2 MILES, 1967-68.

107. KISH, L., QUEBEC DEPT. NATURAL RESOURCES-
BLONDEAU TOWNSHIP, COUNTY OF TEMISCAMING, 1 INCH TO 1,000 FEET, 1965-67.
STUDY OF A BELT OF VOLCANIC AND ASSOCIATED INTRUSIVE ROCKS WHERE CU-NI MINERALIZATION HAS BEEN ENCOUNTERED. SEE EAST HALF OF GABOURY TOWNSHIP, QUEBEC DEPT. NAT. RES., P.R. 554.

108. LAURIN, A., QUEBEC DEPT. OF NATURAL RESOURCES-
GEOLOGY OF THE SAGUENAY RIVER VALLEY AREA, QUEBEC, 1 INCH TO 4 MILES, 1967-68.
PART OF A RECONNAISSANCE STUDY OF THE GRENVILLE PROVINCE.

AREAL GEOLOGY

109. LEONARD, M.A., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME)-
ST. MODESTE AREA, QUEBEC, 1967-68, PH.D. THESIS.
DETAILED STRATIGRAPHY OF AN AREA OF CAMBRO-ORDOVICIAN AND SILURIAN ROCKS IN THE VICINITY OF TROIS-PISTOLES.

110. MACINTOSH, J.A., QUEBEC DEPT. OF NATURAL RESOURCES-
NORTHWEST QUARTER, CLERICY TOWNSHIP, DISTRICT OF ROUYN-NORANDA, 1,000 FEET TO 1 INCH, 1967-68.
STUDY OF AN AREA UNDERLAIN BY MAFIC TO FELSIC FLOW AND PYROCLASTIC ROCKS AND ACID INTRUSIONS. THIS AREA HAS BEEN PROSPECTED SINCE 1920, MOST OF THE WORK HAVING BEEN DONE BETWEEN 1955 AND 1966, THERE ARE INDICATIONS OF GOLD, ZINC AND COPPER.

111. MILLS, P.J., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME)-
ALDER LAKE AREA, NORTHERN QUEBEC, 1 INCH TO 1 MILE, 1967-68, PH.D. THESIS, UNIV. OF KANSAS.

112. NORRIS, A.W., CRAIG, B.G., CUMMING, L.M., BOSTOCK, H.H., NORFORD, B.S., MACDONALD, B.C., PRICE, L.L., SANFORD, B.V., GEOL. SURV. CANADA-
OPERATION WINISK, HUDSON BAY LOWLANDS, MANITOBA, ONTARIO AND QUEBEC, 1 INCH TO 16 MILES, 1967-.
AN AIR-SUPPORTED GEOLOGICAL RECONNAISSANCE SURVEY OF THE HUDSON BAY LOWLANDS COVERING AN AREA IN EXCESS OF 125,000 SQUARE MILES.

113. OSBORNE, F.F., LAVAL UNIV., ST. JULIEN, P., QUEBEC DEPT. NATURAL RESOURCES-
GEOLOGY OF THE CAPITAL DISTRICT, QUEBEC, 1957-69.

114. REMICK, J., QUEBEC DEPT. OF NATURAL RESOURCES-
BRESSANI-CHAMBALON AREA, QUEBEC, 1 INCH TO 1 MILE, 1967-68.

115. RONDOT, J., QUEBEC DEPT. OF NATURAL RESOURCES-
VERMILLION RIVER AREA, QUEBEC, 1 INCH TO 2 MILES, 1967.
RECONNAISSANCE STUDY OF AN AREA OF CHARNOKITIC ROCKS AND PARAGNEISS BETWEEN ST. MICHEL DES SAINTS AND SANMAUR.

116. ST. JULIEN, P., QUEBEC DEPT. OF NATURAL RESOURCES-
GEOLOGY OF QUEBEC CITY AREA, 1966-68.

AREAL GEOLOGY

117. VAN DE WALLE, M., QUEBEC DEPT. OF NATURAL RESOURCES-
NORTHWEST QUARTER OF LESUEUR TOWNSHIP, LAKE BACHELOR AREA, COUNTY OF ABITIBI-EAST, 1 INCH TO 1,000 FEET, 1966-68.
STUDY OF A BELT OF FLOW, PYROCLASTIC AND SEDIMENTARY ROCKS WHERE CU, ZN MINERALIZATION HAS BEEN ENCOUNTERED. SEE SOUTHEAST QUARTER OF NELLIGAN TOWNSHIP, QUEBEC DEPT. NAT. RES., P.R. 568.

118. WILLIAMS, F.M.G., MCGILL UNIV.-
FOLDBELT, SNEGAMOOK LAKE, LABRADOR, QUEBEC, 1965-68, PH.D. THESIS.

Saskatchewan

119. BAER, A.J., GEOL. SURV. CANADA-
ENNADAI OROGENIC BELT - FOND-DU-LAC, SASKATCHEWAN, 1966-.
STRUCTURAL STUDIES IN GNEISSIC TERRAIN. SEE GEOL. SURV. CAN., PAPER 67-1, P. 120, 1967.

GEIKIE RIVER, SASKATCHEWAN, 1 INCH TO 4 MILES, 1967-.

120. CHAKRABARTI, A.K., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
TRADE LAKE (WEST HALF) AREA, 1 INCH TO 1 MILE, 1967-68.
SEE PRELIMINARY REPORT IN SUMMARY OF GEOLOGICAL SURVEYS CONDUCTED IN SASKATCHEWAN, 1967.

121. COLEMAN, L.C., SMITH, J.R., UNIV. OF SASKATCHEWAN-
GEOLOGY AND BEDROCK GEOCHEMISTRY OF THE HANSON LAKE AREA, SASKATCHEWAN, 1962-69.
GEOLOGICAL MAPPING AT 1 INCH = 500 FEET OF A 30 SQUARE MILE AREA IMMEDIATELY WEST OF HANSON LAKE, SASKATCHEWAN HAS BEEN COMPLETED. BEDROCK SAMPLES COLLECTED AT APPROXIMATELY 200 FEET INTERVALS HAVE BEEN ANALYZED BY X-RAY FLUORESCENCE TECHNIQUES FOR CU, ZN, NI AND FE RB/SR AGES FOR A NUMBER OF THE MAJOR ROCK UNITS ARE BEING DETERMINED TO HELP SHOW THE RELATIONSHIPS OF AMISK-TYPE AND KISSEYNEW-TYPE ROCKS IN THE AREA. SAMPLES CONTAINING ANOMALOUS AMOUNTS OF CU, ZN AND NI ARE BEING INVESTIGATED WITH AN ELECTRON MICROPROBE TO DETERMINE THE MANNER OF OCCURRENCE OF THESE METALS IN THE HANSON LAKE AREA. SEE PRELIMINARY REPORTS ON THE GEOLOGY OF THE HANSON LAKE WEST AREA, SASKATCHEWAN PART 2, INTERIM GEOCHEMICAL RESULTS- SASK. RES. COUNCIL, GEOLOGY DIVISION CIRCULAR 2, 1966.

AREAL GEOLOGY

122. FORSYTHE, L.H., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
NEMEIBEN LAKE (EAST HALF) AREA, 1 INCH TO 1 MILE, 1967-68.
SEE PRELIMINARY REPORT IN SUMMARY OF GEOLOGICAL SURVEYS CONDUCTED IN SASKATCHEWAN, 1967.

123. JOHNSTON, W.G.Q., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
GEOLOGY OF THE MAY LAKE AREA (EAST HALF), 1 INCH TO 1 MILE, 1967-68.
IT IS HOPED TO FOLLOW UP THE MAPPING WITH A COMPILATION OF THE GEOLOGY OF THE GENERAL AREA INCLUDING WORK BY EARLIER WORKERS. CORRELATION WITH GEOCHEMICAL WORK IS ALSO PROPOSED.

124. KOSTER, F., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
ZIN BAY (EAST HALF) AREA, 1 INCH TO 1 MILE, 1967-68, PH.D. THESIS, UNIV. OF AMSTERDAM.
SEE PRELIMINARY REPORT IN SUMMARY OF GEOLOGICAL SURVEYS CONDUCTED IN SASKATCHEWAN, 1967.

125. KUPSCH, W.O., VONHOF, A., UNIV. OF SASKATCHEWAN-
GEOLOGY OF EASTERN CYPRESS HILLS, SASKATCHEWAN, 1956-68- PH.D. THESIS (VONHOF).
SEE SELECTIVE CEMENTATION IN TERTIARY SANDS AND GRAVELS, SASKATCHEWAN, CAN. JOUR. EARTH SCI., VOL. 4, PP. 769-775, 1967.

126. SCOTT, B.P., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
BECKETT LAKE (EAST HALF) AREA, 1 INCH TO 1 MILE, 1967-68.
SEE PRELIMINARY REPORT IN SUMMARY OF GEOLOGICAL SURVEYS CONDUCTED IN SASKATCHEWAN, 1967.

127. SMITH, J.R., SASKATCHEWAN RESEARCH COUNCIL-
GEOLOGY AND GEOCHEMISTRY OF THE PRECAMBRIAN IN SASKATCHEWAN, 1959-.
THIS PROJECT INVOLVES A STUDY OF THE RELATIONSHIP BETWEEN TRACE METAL DISTRIBUTION IN ROCKS AND BASE METAL ORES IN SASKATCHEWAN. SEE PRELIMINARY REPORT ON THE GEOLOGY AND GEOCHEMISTRY OF THE HANSON LAKE WEST AREA, SASKATCHEWAN, PART 2- INTERIM GEOCHEMICAL RESULTS, 1966.

Yukon Territory

128. GABRIELSE, H., BLUSSON, S.L., HANFIELD, R.C., UPITIS, U., GEOL. SURV. CANADA-

AREAL GEOLOGY

OPERATION SELWYN - WRIGLEY AND WATSON LAKES, JENNINGS RIVER, SEKWI MOUNTAINS, NAHANNI AND FRANCES LAKE AREAS, NORTHWEST TERRITORIES, AND BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1965-.
SEE GEOL. SURV. CAN., PAPER 67-1, P. 44, 1967.

129. TEMPELMAN-KLUIT, D.J., GEOL. SURV. CANADA-
ANVIL-VANGORDA CREEK, TAY RIVER DISTRICT, YUKON TERRITORY, 1 INCH TO 1 MILE, 1967-.
STRATIGRAPHIC AND STRUCTURAL STUDIES AS AN AID TO MINERAL EXPLORATION.

DATA STORAGE AND RETRIEVAL

130. AGTERBERG, F.P., GEOL. SURV. CANADA-
MULTIVARIATE MURKOV SCHEMES IN GEOLOGY, 1965-.
A SINGLE STATISTICAL, GEOLOGICAL PROCESS MAY INVOLVE A LARGE NUMBER OF MUTUALLY INTERRELATED VARIABLES, WHICH AT ANY ONE TIME ARE ALL SUBJECT TO SYSTEMATIC SPATIAL VARIATIONS (TRENDS). THE RELATIONSHIPS BETWEEN THE VARIABLES AND THE THREE-DIMENSIONAL TRENDS MAY CHANGE IN TIME. BY USING MULTIVARIATE MARKOV SCHEMES, THE RELATIONSHIPS BETWEEN THE VARIABLES AND THE SYSTEMATIC CHANGES IN SPACE OR TIME CAN BE STUDIED SIMULTANEOUSLY. SEE COMPUTER TECHNIQUES IN GEOLOGY, EARTH-SCIENCE REVIEWS, VOL. 3, PP. 47-77, 1967.
COMPUTER ORIENTED ANALYSIS OF MINERAL DEPOSITS, 1964-.
METHODS OF MATHEMATICAL STATISTICS ARE APPLIED TO SETS OF MINING ASSAYS TO PREDICT THE AVERAGE ELEMENT CONCENTRATION VALUE FOR BLOCKS OF ORE AND TO CALCULATE THE PRECISION OF THE PREDICTED VALUES. SEE APPLICATION OF TREND ANALYSIS IN THE EVALUATION OF THE WHALESBACK MINE, NEWFOUNDLAND, SPECIAL VOLUME OF THE CANADIAN INSTITUTE MIN. MET. ON ORE RESERVE ESTIMATION AND GRADE CONTROL (IN PRESS).

131. BIDGOOD, D.E.T., JOST, A., NOVA SCOTIA RESEARCH FOUNDATION-
GRAVITY SURVEYS IN NOVA SCOTIA, 1966-.
EXISTING GRAVITY COVERAGE IN CENTRAL AND NORTHERN NOVA SCOTIA WITH STATIONS AT 1000 FOOT INTERVALS ALONG ROADS, TRACKS AND CUT-LINES IS BEING SYSTEMATICALLY, CHECKED AND RECALCULATED ON A DIGITAL COMPUTER. DATA FILES AT PRESENT ON PUNCH CARD WILL BE TRANSFERRED TO MAGNETIC TAPE. A SIMPLE PLOTTING ROUTINE IS USED TO PREPARE STATION LOCATION MAPS. THE GRAVITY SURVEY IS TO BE EXTENDED TO OTHER PARTS OF THE PROVINCE.

132. BLAIS, R.A., ECOLE POLYTECHNIQUE-
GEOLOGY AND GEOSTATISTICS OF THE BAFFINLAND IRON DEPOSIT, 1963-68.
DETAILED MINERALOGY OF THESE HIGH-GRADE IRON ORES, TOGETHER WITH A COMPLETE STRUCTURAL STUDY AND A DETAILED INVESTIGATION OF THE DISTRIBUTION OF METAL VALUES IN THIS LARGE OREBODY. ALL GEOSTATISTICS FOR THIS DEPOSIT ARE BEING OBTAINED BY ELECTRONIC DATA PROCESSING.

133. BLAIS, R.A., DAVID, M., ECOLE POLYTECHNIQUE-
GEOSTATISTICS OF A TYPICAL PB-ZN DEPOSIT AT PINE POINT, NORTHWEST TERRITORIES, 1967-68.
STUDY OF THE SPATIAL CORRELATIONS BETWEEN PB-ZN-FE ASSAY VALUES OF ABOUT 10,000 DRILL HOLE SAMPLES AVAILABLE FOR THE FIRST TWO LIFTS IN THIS OPEN-PIT, STUDY OF THE CORRELATIONS BETWEEN VARIOGRAM FUNCTIONS

AND POLYNOMIAL FUNCTIONS OF TREND SURFACE ANALYSIS. SEE APPLICATION OF GEOSTATISTICS IN ORE RESERVE ESTIMATION AND GRADE CONTROL, C.I.M. L ESTEREL CONFERENCE, 1967.

134. BLAIS, R.A., FORTIN, N., ECOLE POLYTECHNIQUE-
GEOSTATISTICS OF GOLD MINERALIZATION AT THE SULLIVAN CONSOLIDATED GOLD MINE, NORTHWESTERN QUEBEC, 1966-68, M.A.SC. THESIS (FORTIN).
INCLUDES A PETROGRAPHIC STUDY OF THE MAIN WALL-ROCKS, AN EXAMINATION OF WALL-ROCK ALTERATION, AND A GEOSTATISTICAL STUDY OF A FEW TYPICAL GOLD-BEARING QUARTZ VEINS. THE 5,000 ASSAY VALUES USED ARE STUDIED BY ELECTRONIC DATA PROCESSING, USING A CDC-3100 COMPUTER.

135. BLAIS, R.A., GENTILE, F., ECOLE POLYTECHNIQUE-
PETROLOGY AND METALLOGENIC ANALYSIS OF THE DISRAELI VOLCANIC BELT, EASTERN TOWNSHIPS, 1967-69, PH.D. THESIS (GENTILE).
INCLUDES A DETAILED GEOLOGICAL STUDY OF THIS LITTLE KNOWN BELT OF VOLCANICS AND OF ITS COPPER MINERALIZATIONS, AS WELL AS A DETAILED STUDY OF THE GEOLOGY AND GEOSTATISTICS OF THE CUPRA COPPERMINE AND A GEOLOGICAL RE-EVALUATION OF THE SOLBEC MINES.

136. BURK, C.F. JR., GEOL. SURV. CANADA-
COMPUTER FILE OF DATA ON FOSSIL FUELS DEPOSITS, 1965-69.
THE STUDY CONCERNS THE DEVELOPMENT OF STANDARDS OF DESCRIPTION FOR OIL AND GAS POOLS, COAL DEPOSITS AND RELATED ECONOMIC SEDIMENTARY DEPOSITS, WITH THE VIEW TO ESTABLISHING A COMPREHENSIVE NATIONAL FILE OF GEOLOGICAL DATA ON KNOWN ECONOMIC DEPOSITS OF THIS TYPE. SEE A NATIONAL SYSTEM FOR STORAGE AND RETRIEVAL OF GEOLOGICAL DATA IN CANADA, NATIONAL ADV. COMM. RES. GEOL. SCIENCES, PP. 68-78, 1967.

137. GABE, E.J., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
COMPUTER PROGRAMS FOR X-RAY CRYSTALLOGRAPHY, 1966-.
A COMPREHENSIVE SERIES OF PROGRAMS FOR X-RAY CRYSTALLOGRAPHY AND CRYSTAL STRUCTURE ANALYSIS IS BEING DEVELOPED. COMPLETED PROGRAMS INCLUDE- THE CALCULATION OF INTER-ATOMIC ANGLES AND DISTANCES, THE CALCULATION OF DRILLING JIG SETTINGS FOR THE CONSTRUCTION OF STRUCTURE MODELS, A SEARCHING PROGRAM THAT USES SPACE-GROUP AND ATOMIC-PARAMETER DATA TO SCAN A CRYSTAL STRUCTURE FOR NEIGHBOURING ATOMS TO A VARIABLE

LIMIT AND THEN COMPUTES INTER-ATOMIC DISTANCES AND ANGLES FOR ALL THE ATOMS LOCATED, AND A PROGRAM TO GENERATE THE ANGULAR SETTINGS FOR A DIFFRACTOMETER APPLICABLE TO ALL CRYSTAL SYSTEMS. SEE COMPUTER PROGRAMS FOR X-RAY CRYSTALLOGRAPHY, PARTS I AND II, MINES BRANCH RESEARCH REPORTS R189 AND R191.

138. GILLILAND, J.A., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROUNDWATER OBSERVATION WELL PROGRAM, 1965-.
PROJECT COVERS RESEARCH INTO CRITERIA TO BE USED FOR ESTABLISHING A NATIONAL NETWORK ORIENTED TOWARDS RECOVERING **RESOURCE** INFORMATION. SEE DIGITIZING, STORING AND RECOVERING OBSERVATION WELL HYDROGRAPHS, JOUR. OF HYDROLOGY (IN PRESS).

139. GRICE, R.H., MCGILL UNIV.-
QUALITATIVE ANALYSIS OF MULTI-AQUIFER SYSTEMS, 1968-.
A COMPUTER ITERATION METHOD TO MAKE USE OF FIELD DATA OBTAINED BY MEASUREMENT OF NATURAL VERTICAL WATER FLOWS IN NX DRILL HOLES.

ENGINEERING GEOLOGY OF MONTREAL AREA, 1965-.
THE PROJECT AT PRESENT IS DEVOTED MAINLY TO THE DEVELOPMENT OF A COMPUTER BASED DATA STORAGE AND SELECTIVE RETRIEVAL SYSTEM. A SECONDARY PART CONSISTS OF AN ENGINEERING CLASSIFICATION OF MUDROCKS. SEE ENGINEERING GEOLOGY OF THE MONTREAL SUBWAY- ENGINEERING GEOLOGY, VOL.3, NO. 2, PP. 59-64.

140. LEE, P.J., MIDDLETON, G.V., MCMASTER UNIV.-
APPLICATIONS OF MULTIVARIATE STATISTICAL METHODS IN GEOLOGY, 1965-68.
SEE APPLICATIONS IN THE EARTH SCIENCES- COLLOQUIUM ON TREND ANALYSIS, KANSAS STATE GEOL. SURVEY COMPUTER CONTRIBUTION 12, PP. 19-21, 1967.

141. SERGIADES, A.O., HOQUE, M., ONTARIO DEPT. OF MINES-
DATA PROCESSING OF METAL DEPOSITS OF ONTARIO, 1967-.
THE PURPOSE IS TO CORRELATE THE ECONOMIC GEOLOGY OF ORE DEPOSITS WITH THE GENERAL GEOLOGY OF SURROUNDING AREA IN ORDER TO ASSESS THE POTENTIAL OF NEW AREAS WHERE ONLY GENERAL GEOLOGY IS KNOWN.

142. SMITH, F.G., UNIV. OF TORONTO-
COMPUTATION OF CRYSTAL-LIQUID EQUILIBRIA IN MULTICOMPONENT SYSTEMS, 1963-73.
A SYSTEM OF STORAGE AND RETRIEVAL OF PUBLISHED

DATA ON MINERAL AND ROCK SYSTEMS HAS BEEN TESTED ON A BLOCK OF ITEMS DEALING WITH SALT SYSTEMS. WORK ON THE PROJECT CONSISTS OF COMPLETING THE INDEXING OF ITEMS ON SALT SYSTEMS AND THIS IS TO BE FOLLOWED BY INDEXING OF ITEMS ON SULPHIDE, SILICATE, AND OTHER SYSTEMS OF INTEREST IN GEOCHEMISTRY. COMPUTER PROGRAMS FOR PLOTTING LIQUIDUS DATA OF SILICATE SYSTEMS ARE BEING TRANSLATED FROM FORTRAN II TO FORTRAN IV. SEE COMPUTATION AND PLOTTING OF LIQUIDUS ISOTHERMS IN MULTICOMPONENT SILICATE SYSTEMS, CAN. MINERAL., VOL. 8, PP. 424-430, 1966.

COMPUTER-ASSISTED INSTRUCTION, 1963-80.

A TESTED METHOD FOR USING A COMPUTER AS TEACHING ASSISTANT IS BEING EXTENDED. THE SUBJECTS NOW INCLUDE ELEMENTARY PHYSICAL GEOLOGY, ELEMENTARY HISTORICAL GEOLOGY, COMPUTER PROGRAMMING IN FORTRAN IV, AND ELEMENTARY MATHEMATICS AND STATISTICS USED IN GEOLOGY. SEE A HYBRID MAN-MACHINE TEACHING METHOD, JOUR. GEOL. EDUCATION, VOL. 14, PP. 123-126, 1966.

143. SUTTERLIN, P.G., UNIV. OF WESTERN ONTARIO-
DATA, 1967-.

WORK IS IN PROGRESS WHICH INVOLVES RESEARCH INTO AND DEVELOPMENT OF A DATA PROCESSING AND ANALYSIS COMPUTER SYSTEM WHICH WILL ALLOW FLEXIBILITY OF FILE DESIGN, EFFICIENCY OF FILE DESIGN, INCORPORATION OF ANALYTICAL PROGRAMS AS AN INTEGRAL PART OF THE SYSTEM, DISPLAY TECHNIQUES WHICH CAN LEND THEMSELVES TO REAL-TIME APPLICATIONS, AND WHICH PROVIDES INTERVENTION AND AN INTEGRATED DATA PROCESSING SYSTEM FOR GEOLOGICAL EDITING CAPABILITIES ON THE PART OF THE USER. SEE TREND SURFACE ANALYSIS - A NEW LOOK AT OLD DATA, SIXTH ANNUAL PROCEEDINGS, ONTARIO PETROLEUM INSTITUTE (IN PRESS).

144. TURNER, W.R., RESEARCH COUNCIL OF ALBERTA-
PILOT-PROJECT STUDY OF AUTOMATED GROUNDWATER DATA STORAGE AND RETRIEVAL, 1966.

THIS PROJECT HAS LED TO **HYDRODAT** - A COMPUTER-ORIENTED GROUNDWATER STORAGE AND RETRIEVAL SYSTEM.

HYDRODAT - A COMPUTER-ORIENTED GROUNDWATER INFORMATION STORAGE AND RETRIEVAL SYSTEM, 1967-69.

ALL CURRENT DATA BEING FILED ON HYDRODAT AND ABOUT 25 PER CENT OF BACKLOG OF EARLIER DATA IS ALSO ON HYDRODAT. SEE A COMPUTER-ORIENTED GROUNDWATER INFORMATION STORAGE AND RETRIEVAL SYSTEM, GROUND WATER, VOL. 5, NO. 4, OCT. 1967.

ENGINEERING GEOLOGY

145. BARRON, K., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
FRACTURE INITIATION AND ULTIMATE FAILURE OF ROCK SPECIMENS, 1966-.
TO PREDICT THE STRENGTH OF ROCK MASSES IT WILL BE NECESSARY TO TAKE INTO ACCOUNT SYSTEMATIC DISCONTINUITIES, SUCH AS JOINTS, BEDDING PLANES AND FLOW WEAKNESS. AN ATTEMPT IS BEING MADE TO SIMULATE THE EFFECTS OF SUCH ANISOTROPIC PROPERTIES BY JESTING LABORATORY SAMPLES WITH PREDETERMINED PLANES OF FAILURE. IF SUCH TESTING CONFIRMS THEORETICAL POSULATES THAT HAVE BEEN MADE, IT IS POSSIBLE THAT THESE POSULATES WOULD THEN ALSO APPLY TO ROCK MASSES.

146. BARRON, K., COATES, D.F., GYENGE, M., HEDLEY, D.G.F., YU, Y., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
STABILITY OF SLOPES IN ROCK, 1963-.
AREAS UNDER INVESTIGATION INCLUDE- DETERMINATION OF STRESS DISTRIBUTION IN TYPICAL SLOPES BY PHOTOELASTIC METHODS, DETERMINATION OF STRESS DISTRIBUTION IN TYPICAL SLOPES BY ITERATIVE PROCESS USING COMPUTERS, COOPERATIVE FIELD STUDIES OF PARTICULAR OPEN PIT MINES TO DETERMINE SLOPE DEFORMATION UNDER STABLE AND UNSTABLE CONDITIONS, INSTRUMENT DEVELOPMENT FOR MEASUREMENTS IN SLOPE STABILITY STUDIES, AN ENGINEERING APPROACH TO INCREASE SLOPE ANGLES BY USING ARTIFICIAL SUPPORT METHODS. SEE PLANNING OF SLOPES IN SHALE AND OTHER ROCKS, A.S.C.E. WATER RESOURCES ENGINEERING CONFERENCE, DENVER, COLORADO, 1966.

147. BOZOZUK, M., BURN, K.N., CRAWFORD, C.B., EDEN, W.J., JARRETT, P.M., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
GEOTECHNICAL PROPERTIES OF EASTERN MARINE CLAY, 1951-.
BOTH FIELD AND LABORATORY STUDIES ARE BEING CONDUCTED ON THE **CHAMPLAIN SEA** CLAY OF THE ST. LAWRENCE LOWLANDS. FIELD STUDIES ARE CONCERNED WITH LANDSLIDE OCCURRENCES, SETTLEMENT OBSERVATIONS OF HIGHWAY EMBANKMENTS AND THE EFFECT OF VOLUME CHANGE DUE TO SEASONAL VARIATIONS IN SOIL MOISTURE. ATTEMPTS ARE ALSO BEING MADE TO MEASURE THE LOADING OF PILES DUE TO NEGATIVE SKIN FRICTION CAUSED BY SUBSIDING CLAY LAYERS. LABORATORY INVESTIGATIONS ARE BEING CONTINUED ON THE STRESS-DEFORMATION CHARACTERISTICS OF THE CLAY. SEE STABILITY OF NATURAL SLOPES IN SENSITIVE CLAY- JOUR. SOIL MECH. AND FDNS. DIVISION, PROC. ASCE, VOL. 93, NO. SM4, PP. 419-436, 1967.

ENGINEERING GEOLOGY

148. BROSCOE, A.J., THOMSON, S., UNIV. OF ALBERTA-
DEVEN ROAD LANDSLIDE, EDMONTON, ALBERTA, 1966-67.
A THREE-DIMENSIONAL STUDY OF A BLOCK GLIDE TYPE OF LANDSLIDE IN POORLY CONSOLIDATED BEDROCK. SEE DEVEN ROAD LANDSLIDE, EDMONTON, ALBERTA, CANADA, PAPER BEFORE ASSOCIATION OF ENGINEERING GEOLOGISTS, DALLAS TEXAS, OCT. 1967 (IN PRESS), ENGINEERING GEOLOGY.

149. BROWN, R.J.E., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
PERMAFROST DISTRIBUTION IN CANADA, 1953-.
OBSERVATIONS ON THE OCCURRENCE OF PERMAFROST THROUGHOUT THE PERMAFROST REGION OF CANADA, WITH EMPHASIS ON THE SOUTHERN FRINGE AREA, ARE BEING COLLECTED CONTINUOUSLY BY DIRECT FIELD OBSERVATIONS, REVIEW OF THE TECHNICAL LITERATURE, AND REPORTS FROM OTHER INDIVIDUALS AND AGENCIES. ACCOMPANYING THIS COLLECTION OF INFORMATION IS THE STUDY OF THE CLIMATIC AND TERRAIN FACTORS COMPRISING THE PERMAFROST ENVIRONMENT AS A MEANS OF IMPROVING THE UNDERSTANDING OF AND ABILITY TO PREDICT THE DISTRIBUTION AND OCCURRENCE OF PERMAFROST.

150. CHAGNON, J.Y., QUEBEC DEPT. OF NATURAL RESOURCES-
LANDSLIDES AND QUICK CLAYS IN THE PROVINCE OF QUEBEC, A CONTINUING PROJECT.
NUMEROUS SAMPLES WERE COLLECTED IN 1967 AND LANDSLIDES WERE STUDIED IN 5 DIFFERENT LOCALITIES.
STUDY OF CLAYS NEAR DESBIENS, LAKE ST-JOHN AREA, 1967-68.
A SEISMIC SURVEY AND A DRILLING PROGRAM WERE CARRIED OUT TO LEARN SOMETHING OF THE THICKNESS AND PHYSICAL PROPERTIES OF THE CLAYS IN THE AREA. SAMPLES WILL BE STUDIED FOR THEIR MECHANICAL BEHAVIOUR AND THEIR POSSIBLE USE IN THE CERAMICS INDUSTRY.

151. COATES, D.F., PARSONS, R.C., HEDLEY, D.G.F., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
CLASSIFICATION OF ROCKS, 1962-70.
SEE EXPERIMENTAL CRITERIA FOR CLASSIFICATION OF ROCK SUBSTANCES, INT. J. ROCK MED. AND MIN. SCI., VOL. 3, PP. 181-189, PERGAMON PRESS LTD. 1966.

152. GRAY, W.M., TOEWS, N.A., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROUND CONTROL ANALYTICAL AND NUMERICAL STUDIES RELATING TO STRESS MOVEMENT, 1966-.
SEE ANALYSIS OF ACCURACY IN THE DETERMINATION OF THE GROUND STRESS TENSOR BY MEANS OF BOREHOLE DEVICES,

PROCEEDINGS OF NINTH ROCK MECHANICS SYMPOSIUM, GOLDEN, COLORADO, APRIL 1967 (IN PRESS).

153. GRICE, R.H., MCGILL UNIV.-
ENGINEERING GEOLOGY OF MONTREAL AREA, 1965-.
THE PROJECT AT PRESENT IS DEVOTED MAINLY TO THE DEVELOPMENT OF A COMPUTER BASED DATA STORAGE AND SELECTIVE RETRIEVAL SYSTEM. A SECONDARY PART CONSISTS OF AN ENGINEERING CLASSIFICATION OF MUDROCKS. SEE ENGINEERING GEOLOGY OF THE MONTREAL SUBWAY- ENGINEERING GEOLOGY, VOL.3, NO. 2, PP. 59-64.

154. JOHNSTON, G.H., DIVISION OF THE BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
KELSEY GENERATING STATION - DYKE STUDIES, 1958-.
THE PERFORMANCE OF DYKES CONSTRUCTED ON PERMAFROST IN THE SOUTHERN FRINGE AREA OF THE PERMAFROST REGION IN NORTHERN MANITOBA IS BEING STUDIED BY MEANS OF GROUND TEMPERATURE AND DYKE MOVEMENT OBSERVATIONS.
OBSERVATIONS AT INUVIK, NORTHWEST TERRITORIES, 1954-.
THE EVALUATION OF THE PERFORMANCE OF VARIOUS ENGINEERING FACILITIES, E.G. BUILDING FOUNDATIONS, AIR-STRIPS, ROADS, UTILIDORS, ETC. CONSTRUCTED ON PERMA-FROST WERE CONTINUED BY MEANS OF GROUND TEMPERATURE AND PILE MOVEMENT SURVEYS. DEPTH OF THAW SURVEYS AT SITES HAVING DIFFERENT SOIL AND SURFACE COVER CONDITIONS IN UNDISTURBED AREAS AND UNDER BUILDINGS WERE CARRIED OUT.

155. JOHNSTON, G.H., BLACKWELL, J.M., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
ANCHORAGE IN PERMAFROST, 1965-.
SEVERAL GROUTED, BELLED AND POWER-INSTALLED SCREW ANCHORS WERE INSTALLED, TOGETHER WITH GROUND TEMPERATURE MEASURING INSTRUMENTATION, DEEP BENCH MARKS, ETC. IN PERMAFROST AT TWO TEST SITES IN NORTHERN MANITOBA. PRELIMINARY SHORT TERM AND SUSTAINED LOAD TESTS WERE CARRIED OUT ON SOME OF THE ANCHORS. PLANNING WAS CARRIED OUT FOR FUTURE LONG TERM TESTING.

156. KING, M.S., UNIV. OF SASKATCHEWAN-
STATIC AND DYNAMIC ELASTIC PROPERTIES OF ROCKS, 1967-71.
IT IS PROPOSED TO RECONCILE THE RESULTS OBTAINED TESTING ROCK SAMPLES UNDER STATIC AND DYNAMIC CONDI-TIONS. THE VELOCITIES ARE MEASURED SIMULTANEOUSLY ON A SINGLE ROCK SAMPLE SUBJECTED TO CHANGES IN TRIAXIAL LOADING CONDITIONS AND CHANGES IN TEMPERATURE. THE LABORATORY PROGRAMME WILL BE EXTENDED TO A COMPARISON OF RESULTS OBTAINED FROM STATIC AND DYNAMIC TESTS

UNDERGROUND. THE RESULTS OF THIS RESEARCH WILL LEAD TO A BETTER UNDERSTANDING OF THE MECHANISMS OF ROCK DEFORMATION, AND TO THE DEVELOPMENT OF ACOUSTIC TECHNIQUES FOR DETERMINING THE STATE OF STRESS UNDERGROUND.
MECHANICAL STATE OF ROCK APPROACHING FAILURE, 1967-72.
IT IS PROPOSED TO DETERMINE THE DOMINANT FREQUENCIES AND RELATIVE AMPLITUDES OF MICROSEISMIC **NOISE** AT FREQUENCIES AND RELATIVE ULTRASONIC RANGES PRODUCED BY A ROCK AS IT APPROACHES FAILURE. IT IS ANTICIPATED THAT THIS RESEARCH WILL LEAD TO A METHOD FOR PREDICTING FAILURE.

157. KING, M.S., ACAR, K.Z., UNIV. OF SASKATCHEWAN-
RHEOLOGICAL PROPERTIES OF PRAIRIE EVAPORITES AT ELEVATTED TEMPERATURES, 1967-69- M.SC. THESIS (ACAR).
IT IS PROPOSED TO DETERMINE THE LONG-TERM CREEP PROPERTIES OF SASKATCHEWAN POTASH ORE AND HALITE AT THE ELEVATED TEMPERATURES TO BE EXPECTED AT DEPTHS GREATER THAN THOSE BEING MINED TODAY. RESULTS OF RESEARCH TO DATE ON THE EFFECTS OF AN INCREASE IN TEMPERATURE ON THE CREEP PROPERTIES OF THE EVAPORITES ARE MEAGRE AND CONFLICTING. THE RESULTS OF THIS RESEARCH SHOULD CLARIFY THE SITUATION.

158. LAJTAI, E.Z., UNIV. OF NEW BRUNSWICK-
THE SHEAR STRENGTH OF ROCK DISCONTINUITIES, 1967.
OTHER INVESTIGATIONS IN PROGRESS OR PLANNED INCLUDE BRITTLE FRACTURE IN DIRECT SHEAR- ROCK STRENGTH IN A TRULY TRIAXIAL STATE OF STRESS- THE ORIGIN AND SIGNIFICANCE OF TENSION GASHES ASSOCIATED WITH FAULTS.

159. LEDOUX, R.L., LAVAL UNIV.-
MINERALOGICAL STUDIES OF QUICK CLAYS IN THE PROVINCE OF QUEBEC, 1965-68.
INCLUDES MINERALOGICAL, MECHANICAL AND PHYSICO-CHEMICAL STUDIES OF THE QUICK CLAYS.

160. LOCKER, G., RESEARCH COUNCIL OF ALBERTA-
ENGINEERING PROPERTIES OF UPPER CRETACEOUS-TERTIARY SHALES OF CENTRAL ALBERTA, 1967-, PH.D. THESIS, UNIV. OF ALBERTA.

161. LORBERG, E., UNIV. OF ALBERTA-
INVESTIGATION OF THREE-DIMENSIONAL GEOMETRY OF A LANDSLIDE SOUTHWEST OF EDMONTON, ALBERTA, 1967-68, M.SC. THESIS.

ENGINEERING GEOLOGY

162. MACFARLANE, I.C., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
MUSKEG RESEARCH, 1954-.
THE COMPILATION OF **MUSKEG ENGINEERING HANDBOOK** IS NEARING COMPLETION, PUBLICATION PLANNED FOR 1968. SEE ENGINEERING PROBLEMS IN PEAT SOILS - PROCEEDINGS, 15TH ANNUAL SOIL MECH. AND FOUNDATION ENGINEERING CONFERENCE, UNIV. OF MINNESOTA, MINNEAPOLIS, MARCH, 1967.

163. PENNER, E., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
GROUND TEMPERATURES AND FROST ACTION, 1948-.
A STUDY TO INVESTIGATE HEAVING PRESSURES EXERTED ON SMALL FOOTINGS IN RELATION TO FOUNDATION DESIGN. THE WORK IS NEARING COMPLETION AND WILL BE PUBLISHED DURING 1968. STUDIES ARE ALSO UNDERWAY TO EVALUATE THE USE OF INSULATION AROUND SMALL FOOTINGS. SEE HEAVING PRESSURE IN SOILS DURING UNIDIRECTIONAL FREEZING- CAN. GEOTECH. JOUR. (IN PRESS).

164. RUSSELL, G.A., UNIV. OF MANITOBA-
AN INVESTIGATION OF THE EFFECTS OF VARYING LIME AND MOISTURE CONTENT ON THE STABILIZATION OF AGASSIZ CLAYS, BY DIFFERENTIAL THERMAL ANALYSIS - A CONTINUING STUDY.

165. TERVO, R., GELLER, L., GRAY, W.M., LYALL, A.K., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
ROCK BREAKAGE, 1965-.
SEE RESEARCH IN IMPROVED METHODS OF ROCK BREAKAGE, TRANS. INST. MIN. AND MET., VOL. 76, PP. A105-A124, JULY, 1967.

GEOCHEMISTRY

166. ABBEY, S., GEOL. SURV. CANADA-
USE OF ATOMIC ABSORPTION SPECTROSCOPY IN THE ANALYSIS OF ROCKS AND MINERALS, 1966-.
AN ATTEMPT TO APPLY AAS TO ANALYTICAL PROBLEMS WHERE THIS TECHNIQUE PERMITS GREATER SPEED, ACCURACY, SENSITIVITY OR SIMPLICITY, OR WHERE NO ALTERNATIVE IS READILY AVAILABLE. THE METHOD HAS BEEN EXTENDED TO CA, NA, K AND CR, AND IT IS HOPED TO EXTEND IT FURTHER TO AL, MN, BA, SR, RB, CS AND OTHER ELEMENTS. SEE ANALYSIS OF ROCKS AND MINERALS BY ATOMIC ABSORPTION SPECTROSCOPY. PART 1. DETERMINATION OF MG, LI, ZN AND FE, GEOL. SURV. CAN., PAPER 67-37, 1967.

167. AHMED, S.M., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
BACTERIAL LEACHING, 1967-68.
MICRO-ORGANISMS USED IN THE LEACHING OF MINERALS MAY HAVE A SURFACE CHARGE. A STUDY OF THE ELECTRICAL BEHAVIOUR OF THE ORGANISMS MAY LEAD TO A BETTER UNDERSTANDING OF BACTERIAL LEACHING.
STUDIES OF THE DOUBLE LAYER AT SULPHIDE SURFACES BY THE POTENTIOMETRIC METHOD, 1966-68.
TO DETERMINE THE ZERO POINT OF CHARGE, CHARGE DENSITIES, DIFFERENTIAL CAPACITIES AND INTERFACIAL TENSIONS OF SULPHIDE MINERALS.
STUDIES OF INTERFACIAL ENERGIES AT MINERAL OXIDE AND SULPHIDE SURFACES BY CONTACT ANGLE MEASUREMENTS, 1966-68.
TO CORRELATE THE INFORMATION OBTAINED FROM DOUBLE LAYER STUDIES OF MINERAL OXIDES AND SULPHIDES WITH WETTABILITY AND FLOTABILITY THROUGH CONTACT ANGLE MEASUREMENTS.
OXIDE SURFACES AT THE LIQUID-SOLID INTERFACE, 1965-68.

168. ALLEN, D.G., CLARK, A.H., QUEEN S UNIV.-
MINERALOGY AND GEOCHEMISTRY OF THE GALORE CREEK COPPER DEPOSIT, BRITISH COLUMBIA, 1967-70, PH.D. THESIS (ALLEN).
A STUDY OF THE SULPHIDE AND ALTERATION MINERALS OF A PORPHYRY COPPER DEPOSIT, INCLUDING CONSIDERATION OF SULPHIDE-OXIDE-SILICATE PHASE RELATIONS IN THE **SYSTEM** BIOTITE-K-FELDSPAR-PYRITE-MAGNETITE.

169. ANDERSON, G.M., CRERAR, D.A., UNIV. OF TORONTO-
SOLUBILITY OF QUARTZ IN DILUTE ELECTROLYTE SOLUTIONS AT HIGH TEMPERATURES AND PRESSURES, 1967-68, M.SC. THESIS (CRERAR).
SEE REACTIONS OF QUARTZ AND CORUNDUM WITH AQUEOUS CHLORITE AND HYDROXIDE SOLUTIONS AT HIGH TEMPERATURES AND PRESSURES, AMER. JOUR. SCI., VOL. 265, PP. 12-27, 1967.

GEOCHEMISTRY

170. ANDERSON, G.M., NRIAGU, J., UNIV. OF TORONTO-
SOLUBILITY OF GALENA UNDER HYDROTHERMAL CONDITIONS, 1967-69, PH.D. THESIS (NRIAGU).
SEE THE SOLUBILITY OF PBS IN H2S WATER SOLUTIONS, ECON. GEOL., VOL. 57, PP. 809-828, 1962.

171. AZZARIA, L.-M., LAVAL UNIV.-
MERCURY HALOES, 1967-69.
SEE ANALYTICAL AND EXPERIMENTAL ASPECTS OF GEOCHEMICAL PROSPECTING FOR MERCURY (ABSTRACT), MINING ENGINEERING, VOL. 19, NO. 8, P. 26, 1967.

172. BAADSGAARD, H., DE LA CRUZ, N.N., UNIV. OF ALBERTA-
RB-SR ISOTOPIC RELATIONS IN BENTONITE, 1966-68, M.SC. THESIS (DE LA CRUZ).
THIS PROJECT WAS INITIATED IN THE HOPE THAT THE ISOTOPIC EVIDENCE WOULD THROW SOME LIGHT ON NATURE AND DURATION OF DIAGENESIS AND ALTERATION IN THE FORMATION OF BENTONITIC CLAY HORIZONS.

173. BAADSGAARD, H., STELMACH, A., UNIV. OF ALBERTA-
GEOCHEMICAL PROSPECTING FOR AG UTILIZING AS AS A PATHFINDER, 1966-68.
SILVER MINERALIZATION IN METASEDIMENTARY ROCKS OF THE GREAT BEAR LAKE AREA, N.W.T. CAN BE LOCATED BY GEOCHEMICAL PROSPECTING IN THE BEDROCK UTILIZING AS AS A PATHFINDER.

174. BAADSGAARD, H., TOMLINSON, M., UNIV. OF ALBERTA-
THERMAL MIGRATION OF RB-SR IN A GRANITE, 1963-68.

175. BEATON, W.D., MCGILL UNIV.-
TRACE ELEMENT PARTITION IN SULPHIDES, 1962-68, PH.D. THESIS.

176. BEERBOWER, J.R., VEMURI, R., MCMASTER UNIV.-
CLAY MINERAL AND TRACE ELEMENT VARIATION IN CYCLOTHEMIC ROCKS, 1965-67, PH.D. THESIS (VEMURI).

177. BRIGHT, N.F.H., SUTARNO, LAKE, R.H., ROWLAND, J.F., BOWMAN, W.S., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
REACTIVITY OF IRON OXIDES IN THE FORMATION OF FERRITES, 1966-68.
METHODS, SUCH AS DIFFERENTIAL THERMAL ANALYSIS, THERMOGRAVIMETRIC ANALYSIS, SEMI-QUANTITATIVE X-RAY

DIFFRACTION, PETROGRAPHIC AND ELECTRON MICROSCOPY, OF ASSESSING THE VARIOUS GRADES OF IRON OXIDE (PRINCIPALLY HEMATITE), BOTH NATURAL AND SYNTHETIC, IN THE FORMATION OF BARIUM AND OTHER HEXAFERRITES TO YIELD TECHNOLOGICALLY IMPORTANT MAGNETIC CERAMIC MATERIALS, ARE UNDER INVESTIGATION. SEE EVALUATION OF IRON OXIDES FOR FERRITE MANUFACTURE, JOUR. CAN. CERAM. SOC., VOL. 36, PP. 20-24, 1967.

178. BURLEY, B.J., KIM, K.T., MCMASTER UNIV.-
INVESTIGATION OF PETROGENY S RESIDUA SYSTEM AT 6 KB. WATER PRESSURE AND HIGHER PRESSURES, 1967-70, PH.D. THESIS (KIM).

179. CABRI, L.J., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
PHASE EQUILIBRIUM STUDIES IN THE CU-FE-S AND RELATED SYSTEMS, 1965-.
TO CLOSELY DETERMINE EQUILIBRIUM RELATIONS, STABILITY FIELDS AND CONDITIONS FOR METASTABLE RELATIONS IN SULPHIDE SYSTEMS, AND THEREBY TO FURTHER THE KNOWLEDGE OF SULPHIDE ORE DEPOSITS. SEE A NEW COPPER-IRON SULFIDE, ECONOMIC GEOLOGY, VOL. 62, 1967 (IN PRESS).
INVESTIGATION OF PLATINUM GROUP MINERALS, 1965-66.
SEE NEW PALLADIUM MINERALS FROM NORIL SK WESTERN SIBERIA, CANADIAN MINERALOGIST, VOL. 8, PT. 5, PP. 541-550, 1966.
SULPHIDE SYNTHESIS, 1964-.
SULPHIDE MINERALS OF CLOSELY CONTROLLED COMPOSITIONS ARE SYNTHESIZED TO PROVIDE MATERIAL FOR OTHER INVESTIGATIONS, AND TO PROVIDE FUNDAMENTAL DATA ON PHASE EQUILIBRIUM RELATIONSHIPS IN CERTAIN SULPHIDE SYSTEMS. A SERIES OF LOW-IRON SPHALERITES WERE SUCCESSFULLY SYNTHESIZED FOR OTHER INVESTIGATIONS AND AT PRESENT HIGH-IRON SPHALERITES ARE BEING SYNTHESIZED. SEE IRON-IRON INTERACTION IN IRON-CONTAINING ZINC SULFIDE, ANNUAL MEETING, GEOL. SOC. AMER., 1967 (ABSTRACT).

180. CAMERON, E.M., GEOL. SURV. CANADA-
GEOCHEMICAL STUDY OF CARBONATE ROCKS, 1963-68.
SEE EVALUATION OF SAMPLING AND ANALYTICAL METHODS FOR THE REGIONAL GEOCHEMICAL STUDY OF A SUBSURFACE CARBONATE FORMATION, JOUR. SED. PET., VOL. 36, PP. 755-763.

181. CHAMP, W.H., GEOL. SURV. CANADA-
PROGRAMMING OF JARELL-ASH DIRECT-READING SPECTROMETER

FOR THE ANALYSIS OF ROCKS FOR TRACE ELEMENTS, 1965-.
AN ATTEMPT TO USE THE INCREASED SPEED OF DIRECT-READING TECHNIQUES FOR ANALYTICAL PROCEDURES ALREADY IN USE ON A PHOTOGRAPHIC SPECTROGRAPH.

182. CHAMP, W.H., HILL, F.C., GEOL. SURV. CANADA-
SEMI-QUANTITATIVE SPECTROGRAPHIC ANALYSIS OF ROCKS AND MINERALS, 1956-.
THE ESTABLISHED PROCEDURE IS BEING MODIFIED TO MINIMIZE SUBJECTIVE OPERATOR JUDGMENT. IT IS PLANNED TO EXTEND THIS TECHNIQUE TO THE FULLY QUANTITATIVE ANALYSIS OF SULPHIDE MINERALS.

183. CHEN, T., UNIV. OF BRITISH COLUMBIA-
DIFFUSION OF PB-ISOTOPES IN FELDSPARS, 1967-70, PH.D. THESIS.

184. CHURCH, W.R., UNIV. OF WESTERN ONTARIO-
GEOCHEMISTRY OF ECLOGITES, 1961-.
SEE EXPERIMENTAL STUDIES ON ARIEGITES, PROGRAM, GEOL. ASSOC. CAN. MEETING, KINGSTON, 1967, P. 68.

185. CHURCH, D.K., CROCKET, J.H., MCMASTER UNIV.-
PRECIOUS METALS IN THE SILVER ORES OF COBALT, ONTARIO, 1967-68, M.SC. THESIS (CHURCH).
NEUTRON ACTIVATION ANALYSIS WILL BE USED TO DETERMINE THE CONCENTRATIONS OF AU, PD AND POSSIBLY, OS IN THE SILVER RICH ORES OF COBALT, ONTARIO.

186. CHYI, L.L., CROCKET, J.H., MCMASTER UNIV.-
RADIOACTIVATION DETERMINATION OF PD, OS, IR AND AU IN ROCKS AND MINERALS OF THE MT. ALBERT UTRABASIC PLUTON, GASPE, QUEBEC, 1966-68, M.SC. THESIS (CHYI).
NEUTRON ACTIVATION ANALYSIS WAS USED TO MEASURE THE CONCENTRATIONS OF PD, OS, IR AND AU IN SILICATE AND OXIDE MINERALS IN THE MT. ALBERT ULTRABASIC PLUTON. ALSO PRECIOUS METAL FRACTION BETWEEN SERPENTINIZED AND UNSERPENTINIZED ROCKS WAS INVESTIGATED. ENRICHMENT TRENDS IN LATE CHROMITE SEGREGATIONS WAS ALSO STUDIED. RESULTS TO DATE INDICATE THAT ALL METALS ARE IN THE 1 TO 10 PPM RANGE, THAT THERE IS LITTLE FRACTIONATION BETWEEN OXIDES (CHROMITE) AND SILICATES AND THAT REDISTRIBUTION OF PRECIOUS METALS DURING SERPENTINIZATION IS UNLIKELY.

GEOCHEMISTRY

187. CLARK, A.H., QUEEN S UNIV.-
PHASE EQUILIBRIA IN ORE MINERAL SYSTEMS, 1967-.
EXPERIMENTAL WORK ON MINERAL SYSTEMS HAS BEEN INITIATED, WITH EMPHASIS ON LOW TEMPERATURE PHASE RELATIONSHIPS IN SULPHIDE-TYPE SYSTEMS, AND HIGHER TEMPERATURE INVESTIGATION OF SILICATE-OXIDE-SULPHIDE RELATIONSHIPS, PARTICULARLY THOSE FUNDAMENTAL TO AN UNDERSTANDING OF THE FORMATION OF ORE DEPOSITS ASSOCIATED WITH INTERMEDIATE-ACIDIC IGNEOUS ROCKS. SEE STABILITY FIELD OF MONOCLINIC PYRRHOTITE, TRANS. INSTN. MINING AND METALL., APPLIED EARTH SCIENCES SECTION, VOL. 75, B232-235, 1966.

188. COLEMAN, L.C., SMITH, J.R., UNIV. OF SASKATCHEWAN-
GEOLOGY AND BEDROCK GEOCHEMISTRY OF THE HANSON LAKE AREA, SASKATCHEWAN, 1962-69.
GEOLOGICAL MAPPING AT 1 INCH = 500 FEET OF A 30 SQUARE MILE AREA IMMEDIATELY WEST OF HANSON LAKE, SASKATCHEWAN HAS BEEN COMPLETED. BEDROCK SAMPLES COLLECTED AT APPROXIMATELY 200 FEET INTERVALS HAVE BEEN ANALYZED BY X-RAY FLUORESCENCE TECHNIQUES FOR CU, ZN, NI AND FE RB/SR AGES FOR A NUMBER OF THE MAJOR ROCK SHIPS OF AMISK-TYPE AND KISSEYNEW-TYPE ROCKS IN THE AREA. SAMPLES CONTAINING ANOMALOUS AMOUNTS OF CU, ZN AND NI ARE BEING INVESTIGATED WITH AN ELECTRON MICROPROBE TO DETERMINE THE MANNER OF OCCURRENCE OF THESE METALS IN THE HANSON LAKE AREA. SEE PRELIMINARY REPORTS ON THE GEOLOGY OF THE HANSON LAKE WEST AREA, SASKATCHEWAN PART 2, INTERIM GEOCHEMICAL RESULTS- SASK. RES. COUNCIL, GEOLOGY DIVISION CIRCULAR 2, 1966.

189. CROCKET, J.H., HARRISS, R.C., STAINTON, M., MCMASTER UNIV.-
PD, IR AND AU CONCENTRATIONS IN MANGANESE NODULES FROM MARINE WATERS, 1967-68.
PD, IR AND AU HAVE BEEN DETERMINED BY NEUTRON ACTIVATION ANALYSIS IN MANGANESE NODULES FROM THE BLAKE PLATEAU, THE MID-PACIFIC RISE AND THE ARCTIC OCEAN. THE CONCENTRATION RANGE FOR THESE METALS IS 1 TO 10 PPM. THEY ARE HOMOGENEOUS WITH RESPECT TO AU AND PD. PD IS ENRICHED IN THE PACIFIC OCEAN NODULES BY A FACTOR OF 2 TO 3 RELATIVE TO THE ATLANTIC OCEAN NODULES.

190. CURRIE, K.L., GEOL. SURV. CANADA-
GEOCHEMISTRY OF CANADIAN CRATERS, 1967-.

191. DASTIDAR, P.G., UNIV. OF NEW BRUNSWICK-
CHEMISTRY OF APPALACHIAN ORE DEPOSITS, 1966-68- PH.D. THESIS.

GEOCHEMISTRY

MAJOR AND TRACE ELEMENT ANALYSIS OF CO-EXISTING SULPHIDE-OXIDE-GANGUE MINERAL ASSEMBLAGE TO DETERMINE CONCENTRATION AND DISTRIBUTION OF ELEMENTS WITHIN PARTICULAR MINERAL ASSEMBLAGES.

192. DAVIES, J.L., NEW BRUNWICK DEPT. OF NATURAL RESOURCES-
GEOLOGY AND GEOCHEMISTRY OF THE VOLCANIC ROCKS OF THE TETAGOUCHE GROUP, NEW BRUNSWICK, 1964-70

193. DE LAETER, J., CLARK, W.B., SCHWARCZ, H.P., MCMASTER UNIV.-
SEARCH FOR EXTINCT AL26 IN METEORITES, 1967-68.
STUDY OF MAGNESIUM ISOTOPIC COMPOSITION IN METEORITIC FELDSPAR AND OTHER PHASES, TO SEARCH FOR ANOMALOUSLY HIGH ABUNDANCES OF MG26 DUE TO DECAY OF 7 X 10XX5 Y. AL26.

194. DELAVAULT, R.E., UNIV. OF BRITISH COLUMBIA-
TRACE ELEMENTS IN VOLCANIC ROCKS, 1967-70.

195. DELAVAULT, R.E., MANSON, R., BRABEC, D., UNIV. OF BRITISH COLUMBIA-
GEOCHEMISTRY OF ARSENIC, MERCURY AND SILVER, AND OTHER ELEMENTS, 1965-70, PH.D. THESIS (BRABEC).
STUDIES OF THE RELATIONSHIPS BETWEEN MINOR ELEMENTS IN ROCKS, AND THEIR CONSTITUENT MINERALS, AND IN THE CONTENTS OF SOILS AND PLANTS DERIVED FROM THESE ROCKS. SEE THE ARSENIC CONTENT OF DOUGLAS FIR AS A GUIDE TO SOME GOLD AND SILVER DEPOSITS, PAPER PRESENTED CAN. INST. MIN. MET., PRINCE GEORGE MEETING, 1967.

196. DOIG, R., MCGILL UNIV.-
ABUNDANCE OF K, RB, SR, AND AR, AND ISOTOPES OF THESE ELEMENTS, APPLIED TO GEOLOGICAL PROBLEMS, 1966-.
K/RB RATIOS IN ANORTHOSITES AND RELATED ROCKS, K-AR AND RB-SR ISOTOPIC STUDIES WITH RESPECT TO ROCKS OF THE CHATHAM-GRENVILLE TYPE, ASSOCIATED CARBONATES, MONTEREGIAN ROCKS, ROCKS OF THE ANORTHOSITE-MANGERITE SERIES, AND A VARIETY OF POST-OROGENIC ROCKS FROM THE GRENVILLE PROVINCE.

197. DOIG, R., BARTON, J., MCGILL UNIV.-
ISOTOPIC AND PETROLOGIC STUDIES OF ALKALINE ROCKS, INCLUDING CARBONATITES, ASSOCIATED WITH THE ST. LAWRENCE RIFT SYSTEM, 1966-68, M.SC. THESIS (BARTON).

GEOCHEMISTRY

198. DOUGLAS, J.A.V., GEOL. SURV. CANADA-
STUDY OF METEORITES IN CANADA, 1957-.
SEE GEOL. SURV. CAN., PAPER 63-37, 1963.

199. DRAPER, R.G., MONTGOMERY, D.S., MINES BRANCH, AND WANLESS, R.K., GEOL. SURV. CANADA-
VARIATION OF SULPHUR ISOTOPE RATIO OF THE BITUMINOUS SAND FROM THE MCMURRAY FORMATION AS A FUNCTION OF THE OXYGEN CONTENT OF THE BITUMEN, 1967-.

200. DYCK, W., GEOL. SURV. CANADA-
LABORATORY STUDY OF TRACE ELEMENT COPRECIPITATION WITH HYDROUS IRON OXIDE, 1965-68.
ADSORPTION AND COPRECIPITATION STUDIES INVOLVING SILVER AND BOTH LABORATORY PREPARED AND NATURAL HYDROUS OXIDES OF IRON AND MANGANESE ARE BEING MADE. SEE THE ADSORPTION AND COPRECIPITATION OF SILVER ON HYDROUS FERRIC OXIDES, CAN. JOUR. OF CHEMISTRY (IN PRESS).

201. DYCK, W., BOYLE, R.W., GEOL. SURV. CANADA-
RATES OF DIFFUSION OF TRACE ELEMENTS IN SOLUTIONS AND SOLIDS, 1966-68.
A DIFFUSION CELL SUITABLE FOR THE MEASUREMENT OF DIFFUSION CONTENTS OF IONS IN SOLUTION HAS BEEN MADE. THE BULK AND SELF-DIFFUSION CONSTANTS OF SILVER IN AQUEOUS SOLUTIONS HAVE BEEN DETERMINED, GIVING VALUES OF 1.69 X 10-5 CM2/SEC AND 1.44 X 10-5 CM2/SEC RESPECTIVELY, IN GOOD AGREEMENT WITH REPORTED VALUES. EFFECT OF PH ON THE DIFFUSION CONSTANT AT 10-2N AG + CONCENTRATION WAS FOUND TO BE NEGLIGIBLE. THE EFFECT OF VARYING OTHER FACTORS, SUCH AS TEMPERATURE AND CONCENTRATION, IS BEING STUDIED.

202. ECKSTRAND, N.L., MCGILL UNIV.-
FLOW OF PYRRHOTITE UNDER ELEVATED TEMPERATURE AND PRESSURE, 1966-, M.SC. THESIS.

203. EDGAR, A.D., CHURCH, W.R., MOTTANA, A., UNIV. OF WESTERN ONTARIO-
GEOCHEMISTRY AND PETROLOGY OF ECLOGITES AND RELATED ROCKS, 1966-70.
SEE CHEMISTRY AND MINERALOGY OF THE ECLOGITE FROM THE TYPE LOCALITY (SAUALPE, AUSTRIA), GEOL. SOC. AMER. ANN. MEETING, NEW ORLEANS, 1967, ABSTRACT, P. 157.

204. EDGAR, A.D., PLATT, R.G., UNIV. OF WESTERN ONTARIO-
PHASE RELATIONS IN THE SYSTEM NAALSIO4-KALSIO4-SIO2

WITH THE ADDITION OF FE3O4, NA2SIO3 AND K2SIO3, 1967-69, PH.D. THESIS (PLATT).
SEE MELTING RELATIONS IN ALKALINE ROCKS FROM GREENLAND, CANADA AND AFRICA, MEDD. OM GRONLAND, BD. 181, NR. 9, 60 P., 1967.

205. EDGAR, A.D., SOOD, M.K., UNIV. OF WESTERN ONTARIO- MELTING RELATIONS IN UNDERSATURATED ALKALINE ROCKS, 1963-70, M.SC. THESIS (SOOD).
SEE MELTING RELATIONSHIPS AND CRYSTALLIZATION SEQUENCES OF UNDERSATURATED ALKALIC ROCKS, GEOL. SOC. AMER. ANN. MEETING, NEW ORLEANS (1967), ABSTRACT, P. 53.

206. FAHRIG, W.F., EADE, K.E., MAXWELL, J.A., GEOL. SURV. CANADA- ELEMENT ABUNDANCES OF THE CANADIAN SHIELD, 1962-.
DETERMINATION OF THE AVERAGE COMPOSITION OF THE CANADIAN SHIELD, THE COMPOSITION OF INDIVIDUAL SEGMENTS OF THE SHIELD, AREAL CHEMICAL VARIATION WITHIN CRATONIC SEGMENTS AND THE RELATIONSHIP OF CHEMICAL ABUNDANCES TO MAPPED LITHOLOGY. SEE NATURE, VOL. 211, NO. 5055, PP. 1245-1249.

207. FAWCETT, J.J., GRIEVE, R.A.F., UNIV. OF TORONTO- PHASE RELATIONS OF CHLORITE AND CHLORITOID IN LOW GRADE METAMORPHIC ROCKS, 1967-70, PH.D. THESIS (GRIEVE).
SEE PHASE RELATIONSHIPS OF CHLORITES IN THE SYSTEM MGO-AL2O3-SIO2-H2O, AMER. MINERAL., VOL. 51, PP. 353-380, 1966.

208. FAWCETT, J.J., JAMES, R.S., UNIV. OF TORONTO- PHASE RELATIONS OF INTERMEDIATE MG-FE CHLORITES, 1966-69.
SEE PHASE RELATIONSHIPS OF CHLORITES IN THE SYSTEM MGO-AL2O3-SIO2- H2O, AMER. MINERAL., VOL. 51, PP. 353-380, 1966.

209. FLETCHER, W.K., CROSS, C., UNIV. OF BRITISH COLUMBIA- RELATIONSHIPS BETWEEN GEOLOGY (TRACE ELEMENTS) AND EPIDEMIOLOGY, 1967-70.
THESE STUDIES CONTINUE TO DISCOVER ANOMALOUS AMOUNTS OF SUCH METALS AS POLONIUM 210, LEAD, MERCURY, ARSENIC, ETC. IN SOILS, AND ARE SHOWING THAT THESE ELEMENTS ALSO ARE FOUND IN VARYING AMOUNTS IN SOME OF THE FOODS DERIVED FROM THESE SOILS. THE ROYAL COLLEGE OF GENERAL PRACTITIONERS IN GREAT BRITAIN IS ACTIVELY COOPERATING IN THIS WORK. SEE SOME GEOLOGICAL FACTORS

IN MEDICAL GEOGRPAHY, SOCIEDAD MEXICANA DE GEOGRAFIA Y ESTADISTICA, TOMO VI, PP. 47-54.

210. FOLINSBEE, R.E., BAADSGAARD, H., SMITH, D.G.W., SASAKI, A., BAYROCK, L.A., CUMMING, G.L., UNIV. OF ALBERTA, STUDY OF CANADIAN METEORITES, 1960-.
A COMPREHENSIVE STUDY OF CANADIAN METEORITES USING CHEMICAL METALLOGRAPHIC, MINERALOGIC AND ELECTRON MICROPROBE TECHNIQUES IS WELL UNDERWAY, ITS COMPLETION IS DELAYED BY STUDIES AND INVESTIGATIONS OF NEW FIRE-BALLS WHICH SEEM TO HAVE AN AFFINITY FOR WESTERN CANADA. SEE REVELSTOKE, A NEW TYPE OF CARBONACEOUS CHONDRITE, GEOCHIMICA ET COSMOCHIMICA ACTA, VOL. 31,

211. FRENKEL. O.J., MCGILL UNIV.-
FLOW OF ELECTROLYTES THROUGH CLAYS, 1959-68, M.SC. THESIS.

212. GILL, J.E., DAVIES, R., MCGILL UNIV.-
SULPHIDE RESEARCH - STUDY OF COMMON SULPHIDES UNDER ELEVATED TEMPERATURES AND PRESSURES AND THE RESULTING TEXTURES, 1959-.
SEE RECENT RESEARCH ON SULPHIDES AT MCGILL UNIVERSITY, BULL. CAN. INST. MINING AND METALL., PP. 994-996, 1965.

213. GILLESPIE, D.I., ONTARIO DEPT. LANDS AND FORESTS, CARD, K.D., ONTARIO DEPT. MINES-
RELATIONSHIP OF GROUNDWATER CHEMISTRY, BIOLOGY, AND GEOLOGY IN THE SUDBURY DISTRICT, ONTARIO, 1966-.
SEE THE RELATIONSHIP OF GEOLOGY TO GROUNDWATER CHEMISTRY AND FISH AND GAME PRODUCTIVITY IN THE SUDBURY DISTRICT, ONTARIO (ABSTRACT), NINTH CONFERENCE ON GREAT LAKES RESEARCH, CHICAGO, 1966.

214. GITTINS, J., UNIV. OF TORONTO-
HYDROTHERMAL STUDIES OF CARBONATITE PETROLOGY, 1962-.
A STUDY OF ALKALINE, CALCIUM AND MAGNESIUM CARBONATE SYSTEMS AT PRESSURES UP TO 10 KB.

215. GOMES, R.A.D., SHAW, D.M., MCMASTER UNIV.-
THALLIUM GEOCHEMISTRY, 1967-69, M.SC. THESIS (GOMES).
STUDY OF TL-RB-K ABUNDANCES IN COEXISTING MINERALS, TO PROVIDE INFORMATION ON THE EVOLUTION OF THE MANTLE-CRUST SYSTEM. SEE THE GEOCHEMISTRY OF GA, IN AND TL, PHYS. AND CHEM. OF EARTH, VOL. 2, PP. 164-211, 1957.

GEOCHEMISTRY

216. GOODMAN, R.H., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MOSSBAUER EFFECT (ZN,FE)S SOLID SOLUTIONS, 1964-68.
THE OBJECTIVES ARE TO STUDY THE ELECTRIC AND MAGNETIC ENVIRONMENT OF IRON NUCLEI IN (ZN,FE)S SOLID SOLUTIONS AS A FUNCTION OF TEMPERATURE, CONCENTRATION OF IMPURITIES AND THE EFFECTS OF SURFACE IONS, USING THE MOSSBAUER EFFECT IN FE-57. SEE A MULTI-SPECTROMETER MOSSBAUER SYSTEM USING AN ON-LINE COMPUTER, MINES BRANCH IR 67-31.

217. GORDON, T.M., UNIV. OF BRITISH COLUMBIA-
CHEMICAL KINETICS OF THE REACTION OF CALCITE AND QUARTZ TO FORM WOLLASTINITE AND CARBON DIOXIDE IN SUPERCRITICAL MIXTURES OF H2O AND CO2, 1967-68, PH.D. THESIS.

218. GREENWOOD, H.J., UNIV. OF BRITISH COLUMBIA-
PVT X PROPERTIES OF H2O-CO2 AT 2 KILOBARS AND TEMPERATURES BELOW 500 DEGREES C, 1968-70.
GREENSCHIST REACTIONS OF NATURAL AND SYNTHETIC BASALTS, 1968-70.

219. GREENWOOD, H.J., GORDON, T.M., LECHEMINANT, A.N., CHEN, T., UNIV. OF BRITISH COLUMBIA-
GEOLOGICAL PHASE EQUILIBRIA, 1967-70, PH.D. THESES (GORDON, LECHEMINANT, CHEN).
SEE MINERAL EQUILIBRIA IN THE SYSTEM MGO-SIO2-H2O-CO2, RESEARCHES IN GEOCHEMISTRY, VOL. 2, P.H. ABELSON, ED., WILEY, 1967.

220. GUNN, B.M., UNIV. OF MONTREAL-
MATRIX CORRECTIONS FOR X-RAY ANALYSIS, 1965-67.
SEE MATRIX CORRECTIONS FOR X-RAY FLUORESCENCE SPECTROMETRY BY DIGITAL COMPUTER, CAN. SPECT., P. 12, 1967.
PETROCHEMICAL VARIATIONS IN SIMULTANEOUSLY COOLED BASALT AND RHYOLITE, STRÉTISHORN DIKE, ICELAND, 1965-67.
INVOLVES A COMPARISON OF THE BEHAVIOUR AND DEPARTURES FROM LINEAR PROPORTIONALITY OF GEOCHEMICALLY COHERENT ELEMENTS SUCH AS K, RB, TH, BA AND CA, SR, OR FE, TI, MN. SOME ELEMENTS APPEAR IN THE HYDRID ROCKS IN THE PROPORTION OF SIMPLE MIXTURES, OTHERS HAVE BEEN SELECTIVELY ADDED OR SUBTRACTED.
GEOCHEMISTRY OF THE TERLINGUA-SOLITARIO PROVINCE, WEST TEXAS, 1965-67.
THE SODA-RICH ROCKS OF WEST TEXAS HAVE BEEN SHOWN BY SEVENTY ANALYSES TO RANGE FROM PICRITE TO MICRO-

SYENITE. TI, SR CONCENTRATIONS ARE UNUSUALLY HIGH. ORIGINS OF SYENITE STRINGERS IN SYENODIORITE AND LAYERING ALONG MARGINS OF INTRUSIONS HAVE BEEN EXPLAINED.

221. HARRISS, R.C., MCMASTER UNIV.-
CHEMICAL WEATHERING OF SERPENTINES IN PUERTO RICO, 1966-.
AN INVESTIGATION OF THE ACCUMULATION OF TRACE ELEMENTS IN LATERITIC WEATHERING PRODUCTS IN RELATION TO SURFACE CHEMICAL PROPERITES OF IRON OXIDES.

222. HARRISS, R.C., CROCKET, J.H., MACDOUGALL, J.D., STAINTON, M., MCMASTER UNIV.-
GEOCHEMISTRY OF AU, PD, IR, AND OS IN DEEP-SEA SEDIMENTS AND MANGANESE NODULES, 1967-68, M.SC. THESIS (MACDOUGALL).

223. HARRISS, R.C., TROUP, A., MCMASTER UNIV.-
MINERALOGY AND CHEMISTRY OF IRON-MANGANESE CONCRETIONS FROM FRESHWATER LAKES, 1967-68, M.SC. THESIS (TROUP).

224. HARRISS, R.C., WILLIAMS, H.H., MCMASTER UNIV.-
GEOCHIMSTRY OF BROMINE AND FLUORIDE IN NATURAL WATERS, 1967-, PH.D. THESIS (WILLIAMS).
AN INVESTIGATION OF HALOGENS IN NATURAL WATERS USING SPECIFIC-ION ELECTRODE TECHNIQUES.

225. HITCHON, B., RESEARCH COUNCIL OF ALBERTA IN COOPERATION WITH OTHER AGENCIES-
GEOCHEMISTRY AND HYDRODYNAMICS OF FORMATION WATERS IN WESTERN CANADA - A CONTINUING PROJECT.
COOPERATIVE PROJECTS ARE UNDERWAY WHICH DEAL WITH MAJOR AND TRACE ELEMENTS AS WELL AS STABLE ISOTOPES OF HYDROGEN AND OXYGEN IN FORMATION WATERS IN WESTERN CANADA. THE DATA WILL BE SUBJECTED TO STATISTICAL FACTOR ANALYSIS, BASIN-WIDE AVERAGES DETERMINED AND THE WHOLE RELATED TO A CURRENT STUDY OF HYDRODYAMICS IN THE WESTERN CANADA BASIN. INTEREST CONTINUES IN A SIMILAR MANNER, OF SURFACE WATERS AND OF THE ORGANIC CONTENT OF BASIN SEDIMENTS. SEE FORMATION FLUIDS, CHAPTER 15 IN GEOLOGICAL HISTORY OF WESTERN CANADA, 1964, ALBERTA SOC. PETROL. GEOL., CALGARY, ALBERTA.

226. HODGSON, C.J., MCGILL UNIV.-
PETROCHEMISTRY OF MONTEREGIAN DYKES, QUEBEC, 1965-68,

GEOCHEMISTRY

PH.D. THESIS.

227. HORNBROOK, E.H., FORTESCUE, J.A.C., GEOL. SURV. CANADA-
BIOGEOCHEMICAL RESEARCH, 1963-.
SEE PROGRESS REPORT ON BIOGEOCHEMICAL RESEARCH AT THE GEOLOGICAL SURVEY OF CANADA- GEOL. SURV. CAN., PAPER 67-23 PART I (1967).

228. IWASAKI, H., BRIGHT, N.F.H., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
STUDIES IN THE TITANIUM-OXYGEN SYSTEM, 1965-67.
THIS STUDY WAS AIMED AT ELUCIDATING CERTAIN OUTSTANDING PROBLEMS IN THE COMPLEX TI-O SYSTEM, (1) IN RELATION TO THE BEHAVIOUR TO COMPOSITIONS CLOSE TO THE STOICHIOMETRIC TIO COMPOSITION, WHICH EXHIBIT SOMEWHAT UNUSUAL STABILITY BEHAVIOUR AND (2) IN RELATION TO THE POLYMORPHISM OF THE OXIDE TI3O5, ONE FORM OF WHICH IS CLOSELY RELATED TO THE MINERAL PSEUDOBROOKITE, FE2O3.TIO2. SEE X-RAY STUDIES IN THE TI-O SYSTEM, ADVANCES IN X-RAY ANALYSIS, VOL. 4, PP. 175-193, 1961.

229. JOHNSTON, W.G.Q., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
GEOLOGY OF THE MAY LAKE AREA (EAST HALF), SASK. 1 INCH TO 1 MILE, 1967-68.
IT IS HOPED TO FOLLOW UP THE MAPPING WITH A COMPILATION OF THE GEOLOGY OF THE GENERAL AREA INCLUDING WORK BY EARLIER WORKERS. CORRELATION WITH GEOCHEMICAL WORK IS ALSO PROPOSED.

230. JONGEJAN, A., WILKINS, A.L., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
HIGH-TEMPERATURE PHASE EQUILIBRIUM STUDIES IN THE SYSTEM CAO-NB2O5-TIO2, 1962-68.
STUDY OF THE RANGE OF TEMPERATURE AND COMPOSITIONAL STABILITY LEADING TO THE FORMATION OF NIOBIUM-ETC. THE BINARY SYSTEM CAO-NB2O5 IS KNOWN FROM OTHER WORK AT THE MINES BRANCH. THE BINARY SYSTEMS CAO-TIO2 AND NB2O5-TIO2 ARE KNOWN FROM OUTSIDE WORK. THERE IS THE INDICATION OF THE FORMATION OF AT LEAST TWO TERNARY COMPOUNDS IN THE CAO-NB2O5-TIO2 SYSTEM. A CONSIDERABLE KNOWLEDGE OF THE PHASE STABILITY FIELDS HAS BEEN ACQUIRED CONCERNING THE TERNARY SYSTEM.

231. KELLY, R., IMREH, L., QUEBEC DEPT. OF NATURAL RESOURCES-
GEOCHEMICAL SURVEY OF THE LAKE KIPAWA AREA, COUNTY OF TEMISCAMING, 1967.
SAMPLING OF STREAM SEDIMENTS IN AN AREA WHERE A URANIUM-BEARING FORMATION IS KNOWN. SAMPLES WILL BE

ANALYZED FOR A TOTAL OF 12 ELEMENTS. PRELIMINARY STUDIES OF THE RESULTS INDICATE ANOMALIES FOR URANIUM, COBALT AND ZINC.

232. KEMP, A.L.W., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GREAT LAKES SEDIMENT ORGANIC PROGRAM, 1967-.
CHEMICAL STUDIES ARE BEING MADE TO INDENTIFY THE ORGANIC MATERIALS PRESENT IN THE SEDIMENTS OF LAKES ONTARIO AND ERIE AND TO DEFINE THE DIAGENETIC PROCESSES OPERATING IN THE SEDIMENTS.

233. KING, L.H., MACLEAN, B., RASHID, M., BEDFORD INSTITUTE OF OCEANOGRAPHY-
MARINE GEOLOGY AND GEOCHEMISTRY OF THE SCOTIAN SHELF, 1963-.
SURFICIAL SEDIMENT AND BEDROCK STUDIES UTILIZING ECHOGRAMS AND CONTINUOUS SEISMIC-REFLECTION PROFILES, AS WELL AS OTHER TECHNIQUES, AND STUDIES ON THE STRUCTURAL CHEMISTRY OF THE ORGANIC COMPONENT, WITH THE OBJECTIVE OF SHOWING THE RELATION OF THE ORGANIC MATTER TO THE SEDIMENTARY ENVIRONMENT.

234. LACHANCE, G.R., COURVILLE, S., GEOL. SURV. CANADA-
INVESTIGATION OF THE APPLICATION ON THE LACHANCE-TRAILL CORRECTION METHOD FOR MATRIX ABSORPTION IN THE ANALYSIS OF VARIED TYPES OF ROCKS AND MINERALS BY X-RAY FLUORESCENCE, 1965-.
TESTS ARE UNDERWAY, IN CONNECTION WITH THE ANALYSIS OF REGULAR SAMPLES, TO CHECK THE VALIDITY OF THE CORRECTION FORMULAS. MANY SECONDARY STANDARDS ARE ALSO BEING ANALYSED, IN ORDER TO DETERMINE THE EXTENT OF ADJUSTMENTS WHICH MAY BE NECESSARY IN THE THEORETICALLY DERIVED CORRECTIONS. SEE ROCK ANALYSIS BY X-RAY FLUORESCENCE METHODS AT THE GEOLOGICAL SURVEY OF CANADA, XIII COLLOQUIUM SPECTROSCOPICUM INTERNATIONALE, 1967.

235. LAKE, R.H., BRIGHT, N.F.H., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
STUDIES IN THE TIN-OXYGEN SYSTEM, 1967-.
THE OXIDE SnO_2 (CASSITERITE), IS WELL-ESTABLISHED. THE OXIDE SNO HAS BEEN THE SUBJECT OF SOME EARLIER WORK BUT THE RANGE OF ITS TEMPERATURE AND COMPOSITIONAL STABILITY HAS NOT BEEN ACCURATELY DEFINED. A DEFINITIVE STUDY OF THE SYSTEM IS DESIRABLE.

GEOCHEMISTRY

236. LANGFORD, F.F., UNIV. OF SASKATCHEWAN-
ANALYSIS OF TRACE ELEMENT DATA.
SEE A METHOD TO EVALUATE THE PROBABILITY OF SUCCESS OF A GEOCHEMICAL SURVEY- ECON. GEOL., VOL. 60, NO. 2, 1965.

237. LECHEMINANT, A.N., UNIV. OF BRITISH COLUMBIA-
SULPHURIZATION REACTIONS INVOLVING HYDROUS SILICATES, WITH BUFFERED HYDROGEN ACTIVITY, 1967-70, PH.D. THESIS.

238. LEE, P.J., MIDDLETON, G.V., MCMASTER UNIV.-
APPLICATIONS OF MULTIVARIATE STATISTICAL METHODS IN GEOLOGY, 1965-68.
SEE APPLICATIONS IN THE EARTH SCIENCES- COLLOQUIUM ON TREND ANALYSIS, KANSAS STATE GEOL. SURVEY COMPUTER CONTRIBUTION 12, PP. 19-21, 1967.

239. LEVINSON, A.A., UNIV. OF CALGARY-
GEOCHEMISTRY OF TRACE AND MINOR ELEMENTS IN SEDIMENTARY ROCKS, 1965-.
SEE SPECULATION ON THE INCORPORATION OF BORON INTO ARGILLACEOUS SEDIMENTS, GEOCHIM. ET COSMOCHIM. ACTA, 30, PP. 844-862, 1966.
HYDROTHERMAL MINERAL TRANSFORMATIONS, 1965-.
SEE THE HYDROTHERMAL SYNTHESIS OF MONTMORILLONITE GROUP MINERALS FROM KAVLENITE, QUARTZ AND VARIOUS CARBONATES, AM. MINERAL., VOL. 51, PP. 495-498.

240. LIU, C., MEMORIAL UNIV. OF NEWFOUNDLAND-
GEOCHEMICAL SOIL SURVEY IN SPRINGDALE AREA, NORTH-CENTRAL NEWFOUNDLAND, 1967-68, M.SC. THESIS.
INCLUDES INVESTIGATION OF THE DISTRIBUTION OF SOME HEAVY ELEMENTS IN BOG SOILS, PREPARATION OF A GEOCHEMICAL DATA MAP, INTERPRETIVE MAP AND GEOLOGICAL MAP OF THE AREA AND SOME INDICATIONS, IF POSSIBLE, OF PROBABLE MINERALIZATION IN THE BEDROCK.

241. MACDONALD, J.A., MCGILL UNIV.-
SURFACE MIGRATION OF URANIUM, BEAVERLODGE, SASKATCHEWAN, 1964-68, PH.D. THESIS.

242. MACLEAN, W.H., MCGILL UNIV.-
LIQUIDUS RELATIONS IN THE FES-FEO-FE3O4-SIO2 SYSTEM, 1964-68, PH.D. THESIS.

GEOCHEMISTRY

243. MAJMUNDAR, H.H., FRIEDLAENDER, C.G.I., DALHOUSIE UNIV.-
GEOCHEMICAL STUDIES OF BASALTIC LAVA FLOWS OF NORTH MOUNTAIN, NOVA SCOTIA, 1966-.
STUDY OF THE DISTRIBUTION OF MAJOR, MINOR AND TRACE ELEMENTS IN DIFFERENT TYPES OF BASALTIC LAVA FLOWS. THE MAJOR ELEMENT DISTRIBUTION IS STUDIED BY X-RAY FLUORESCENCE AND BY COLORIMETRIC AND FLAME PHOTOMETRIC METHODS. MINOR AND TRACE ELEMENT DISTRIBUTION IS STUDIED BY EMISSION SPECTROGRAPHY.
ELEMENTAL DISTRIBUTION STUDY OF SIX U.S.G.S. STANDARDS, 1966-68.
ELEMENTAL DISTRIBUTION STUDY OF SIX U.S.G.S. STANDARDS (G2, GSP-1, AGV-1, BCR-1, PCC-1, DTS-1). DETERMINATION OF MAJOR ELEMENTS IS DONE BY X-RAY FLUORESCENCE, COLORIMETRIC AND FLAME PHOTOMETRIC METHODS AND THAT OF TRACE ELEMENTS (CO, CU, CR, MN, NI, ZN) WILL BE DONE BY SPECTROGRAPHIC ANALYZER.

244. MALIK, O.P., ARNOLD, R.G., UNIV. OF SASKATCHEWAN-
PHASE EQUILIBRIUM STUDIES IN THE FE-NI-S SYSTEM, 1966-68, M.SC. THESIS (MALIK).
HIGH TEMPERATURE MELTING RELATIONS ARE BEING INVESTIGATED BY QUENCHING EXPERIMENTS.

245. MARTINDALE, R.D., CROCKET, J.H., MCMASTER UNIV.-
GOLD IN THE ELLIOT LAKE URANIFEROUS CONGLOMERATES, ONTARIO, 1966-68, M.SC. THESIS (MARTINDALE).
THE GOLD CONTENT OF APPROXIMATELY 30 PYRITE CONCENTRATES FROM THE ELLIOT LAKE URANIFEROUS CONGLOMERATE CORES HAS BEEN DETERMINED. THE AVERAGE CONCENTRATION IS APPROXIMATELY 0.5 PPM AND RANGES FROM 0.1 TO 1.6 PPM. FEW EXTREME VALUES ARE NOTED. PT HAS ALSO BEEN FOUND IN SOME SAMPLES. ITS CONCENTRATION IS PROBABLY IN THE PPM RANGE.

246. MCALLISTER, A.L., PAJARI, G.E., SOONG, K., UNIV. OF NEW BRUNSWICK-
PETROCHEMISTRY OF CARBONIFEROUS VOLCANIC ROCKS IN THE MOUNT PLEASANT CALDERA, NEW BRUNSWICK, 1967-69-
M.SC. THESIS (SOONG).

247. MCCAMMON, B., SHAW, D.M., MCMASTER UNIV.-
GEOCHEMISTRY OF THE LOON LAKE PLUTON, 1967-68.
MAJOR AND TRACE ELEMENT DISTRIBUTIONS AND THE MAGMATIC FRACTIONATION TRENDS IN A COMPLEX OF GABBRO-DIORITE-SYENITE-GRANITE.

GEOCHEMISTRY

248. MCNUTT, R.H., CROCKET, J.H., MCMASTER UNIV.-
A RB87-SR87 ISOTOPIC STUDY OF THE MT. ALBERT DUNITE, QUEBEC, 1965-.

249. MCNUTT, R.H., FRYER, B.J., MCMASTER UNIV.-
A RB87-SR87 ISOTOPIC STUDY OF AN ANORTHOSITE BODY, 1967-68.

250. MCNUTT, R.H., GROSSMAN, L., MCMASTER UNIV.-
A STUDY OF Y, LA AND CE IN APATITE, CALCITE AND FLUORITE FROM A SKARN IN THE GRENVILLE OF ONTARIO, 1967-68.

251. MITCHELL, R.H., CROCKET, J.H., MCMASTER UNIV.-
SR ISOTOPIC STUDY OF KIMBERLITE, 1966-69, PH.D. THESIS.
THE SR ISOTOPIC COMPOSITION OF KIMBERLITES FROM SOUTH AFRICA HAS BEEN MEASURED MASS SPECTROMETRICALLY. BOTH MATRIX AND PHENOCRYSTS HAVE BEEN ANALYZED. A COMPARISON OF MATRIX AND PHENOCRYST ISOCHRONS SHOULD PROVIDE DATA ON TIME OF CRUSTAL EMPLACEMENT AND TIME OF KIMBERLITE GENERATION.

252. MOORE, J.C.G., MOUNT ALLISON UNIV.-
ROCK GEOCHEMISTRY AS AN AID IN THE SEARCH FOR MASSIVE SULPHIDE OREBODIES IN NEW BRUNSWICK, 1963-68.
MERCURY SEEMS TO BE THE MOST PROMISING ELEMENT.

253. MULLIGAN, R., GEOL. SURV. CANADA-
LITHIUM CONTENT OF CANADIAN GRANITES, 1965-.
THE OBJECT IS TO COMPARE THE LITHIUM CONTENT OF SAMPLES OF GRANITE FROM GEOLOGICAL PROVINCES IN WHICH LITHIUM DEPOSITS ARE SCARCE OR ABSENT WITH THOSE FROM PROVINCES IN WHICH DEPOSITS ARE ABUNDANT.

254. MUYSSON, J.R., CAMPBELL, F.E., SHAW, D.M., MCMASTER UNIV.-
CALIBRATION OF GEOCHEMICAL STANDARD SAMPLES.
CONTINUED ANALYTICAL EFFORTS TO IMPROVE ON THE KNOWLEDGE OF MAJOR AND TRACE ELEMENT ABUNDANCES IN WIDELY USED REFERENCE STANDARD ROCKS AND MINERALS.

255. NALDRETT, A.J., UNIV. OF TORONTO-
STUDY OF EQUILIBRIA BETWEEN SULFIDE-OXIDE LIQUIDS AND SILICATE MELTS, 1968-.
SEE MELTING RELATIONSHIPS IN A PORTION OF THE FE-S-O SYSTEM AND THE CRYSTALLIZATION OF SULFIDE-OXIDE ORE MAGMAS, ABSTRACT PROGRAM OF 1967, GEOL. SOC. AMER. ANNUAL MEETING.
STUDY OF SUB-SOLIDUS REACTIONS BETWEEN FE-NI OLIVINES

AND FE-NI SULFIDES, 1967-69.
TO DETERMINE EXPERIMENTALLY WHETHER REACTIONS BETWEEN SULFUR AND NICKEL-BEARING OLIVINE TO FORM SULFIDE ORE, PROPOSED ON THE BASIS OF FIELD STUDIES, WILL OCCUR UNDER CONDITIONS LIKELY TO BE FOUND IN NATURE. SEE THE ROLE OF SULFURIZATION IN THE GENESIS OF IRON-NICKEL SULFIDE DEPOSITS OF THE PORCUPINE DISTRICT, ONTARIO, BULL. CAN. INST. MIN. MET., VOL. 59, PP. 489-497, 1966.

256. NALDRETT, A.J., UNIV. OF TORONTO AND BROWN, G.M., UNIV. OF DURHAM-
STUDY OF SUB-SOLIDUS REACTIONS BETWEEN FE-MG PYROXENES AND FE SULFIDES, 1967-69.
SEE REACTION BETWEEN PYRRHOTITE AND ENSTATITE - FERROSILITE SOLID SOLUTIONS, ANN. REPT. DIRECTOR GEOPHYS. LABORATORY, CARNEGIE INSTITUTION OF WASHINGTON, YEARBOOK, 1966.

257. PAJARI, G.E., UNIV. OF NEW BRUNSWICK-
THE MINERALOGY AND PETROCHEMISTRY OF MOUNT JOHNSON, MONTEREGIAN HILLS, QUEBEC, 1961-67.
A DETAILED DESCRIPTION OF THE MINERALOGY AND CHEMISTRY OF AN ALKALI INTRUSION WITH PARTICULAR EMPHASIS ON THE MECHANISM OF DIFFERENTIATION.

258. PAJARI, G.E., PRINGLE, G., TREMBATH, L.T., UNIV. OF NEW BRUNSWICK-
MINERALOGY AND PETROCHEMISTRY OF THE ST. GEORGE COMPLEX, NEW BRUNSWICK, 1965-69.
THE FIELD RELATIONSHIPS BETWEEN ROCK TYPES OF THIS ALKALI COMPLEX HAVE BEEN ESTABLISHED IN TWO SUMMERS OF FIELD WORK. CHEMICAL AND MINERALOGICAL WORK ON THE ROCKS IN KEY LOCALITIES IS UNDERWAY.

259. PERRAULT, G., ECOLE POLYTECHNIQUE-
ANALYTICAL METHODS FOR TRACE ELEMENT STUDIES OF ROCKS, 1965-68.
ANALYTICAL METHODS OF DETERMINATION OF TRACE ELEMENT CONSTITUTION OF ROCKS ARE BEING TESTED FOR STUDYING LAVAS- ATOMIC ABSORPTION SPECTROPHOTOMETRY, X-RAY FLUORESCENCE, COLORIMETRIC AND EMISSION SPECTROGRAPHY. SEE SPECTROPHOTOMETRIE D ABSORPTION ATOMIQUE-UNE MISE EN GARDE SUR LA PREPARATION DES ETALONS DE COMPARAISONS, CANADIAN SPECTROSCOPY, VOL. 11, NO. 1, JANUARY 1966.

GEOCHEMISTRY

260. PERRAULT, G., DUMESNIL, J.C., ECOLE POLYTECHNIQUE-
LA PART DE LA FLUORESCENCE X DANS L ANALYSE TOTALE DES ROCHES, 1965-67, M.SC. THESIS (DUMESNIL).
RESEARCH ON ANALYTICAL METHODS FOR RAPID ROCK ANALYSES IS CONTINUING- THE MEASUREMENT OF VOLATILES AND LOW ATOMIC NUMBER CONSTITUENTS IS BEING INVESTIGATED.

261. PHIPPS, D., MCGILL UNIV.-
GEOCHEMISTRY AND THERMOCHEMISTRY CLAY MINERALS - FELDSPARS TRANSITION, 1964-68, PH.D. THESIS.

262. PUTT, D.J., UNIV. OF MANITOBA-
EXPERIMENTAL LOCATION OF LIQUIDUS AND SOLIDUS IN PART OF THE SYSTEM (MG,FE,CA) SIO3, 1967-68- M.SC. THESIS.

263. RAMBALDI, E., UNIV. OF OTTAWA-
ELEMENT DISTRIBUTION BETWEEN COEXISTING MINERALS IN METAMORPHIC ROCKS, SOUTHERN ONTARIO, 1965-68- PH.D. THESIS.

264. REEVE, D.A., BRIGHT, N.F.H., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
HIGH-TEMPERATURE PHASE-EQUILIBRIUM STUDIES IN THE SYSTEM CAO-TA2O5-SIO2, 1966-68.
STUDY OF THE RANGE OF TEMPERATURE AND COMPOSITIONAL STABILITY OF THE VARIOUS POSSIBLE COMPOUNDS IN BEARING PEROVSKITES, TITANIUM-BEARING PYROCHLORES, THE TERNARY AND RELEVANT BINARY SYSTEMS - ANALOGOUS TO THE RECENTLY COMPLETED STUDY OF THE CAO-NB2O5-SIO2 SYSTEM. NOTABLE DIFFERENCES BETWEEN THE TWO SYSTEMS HAVE BEEN OBSERVED, PARTICULARLY IN THE TA2O5-SIO2 BINARY. A TANTALUM ANALOGUE OF THE MINERAL NIOCALITE HAS BEEN SYNTHESIZED AND IS ISOSTRUCTRAL WITH THE NIOBIUM COMPOUND.

265. ROEDER, P., HILL, R., HAUGHTON, D., CALEY, W., QUEEN S UNIV.-
CRYSTALLIZATION OF BASALT, 1962-, PH.D. THESES (HILL, HAUGHTON), M.SC. THESIS (CALEY).
THE CRYSTALLIZATION OF BASALT AS A FUNCTION OF OXYGEN FUGACITY IS BEING STUDIED. DETAILED STUDIES OF THE CRYSTALLIZATION OF THREE BASALTIC ROCKS AT DIFFERENT OXYGEN FUGACITIES HAS BEEN COMPLETED AND THE RELATIONSHIPS BETWEEN THE CRYSTALLIZATION OF CHROMITE AND MAGNETITE HAS BEEN OUTLINED. SEE STABILITY OF SPINEL IN BASALT, GEOL. SOC. AMER. MEETING, 1967 (ABSTRACT).

GEOCHEMISTRY

266. ROSCOE, S.M., GEOL. SURV. CANADA-
METALLOGENIC STUDY, LAKE SUPERIOR-CHIBOUGAMAU, 1963-69.
A COMPILATION OF LEAD ISOTOPE DATA AND DISCUSSION OF METALLOGENIC EPOCHS IN THE SOUTHEASTERN CANADIAN SHIELD IS IN PREPARATION. SEE GEOCHEMICAL AND ISOTOPIC STUDIES, NORANDA AND MATTAGAMI AREAS, BULL. CAN. INST. MIN. AND MET., VOL. 58, NO. 641, PP. 965-971, 1965.

267. SANGSTER, D.F., GEOL. SURV. CANADA-
GEOCHEMISTRY OF LEAD-ZINC DEPOSITS IN CARBONATE ROCKS, 1965-.
AT LEAST FOUR MAJOR GEOLOGICAL TYPES OF LEAD-ZINC DEPOSITS IN CARBONATE ROCKS HAVE BEEN RECOGNIZED TO OCCUR IN CANADA. RESEARCH ON THESE DEPOSITS IS TWO-FOLD- (1) FURTHER DEFINITION OF GEOLOGICAL TYPES, AND (2) STUDIES OF MAJOR METAL RATIOS, TRACE ELEMENT CONTENT, AND STABLE ISOTOPE RATIOS TO REVEAL ANY GEOCHEMICAL CHARACTERISTICS. PRELIMINARY FINDINGS INDICATE THAT ALTHOUGH RATHER DISTINCT GEOCHEMICAL TYPES CAN BE RECOGNIZED, THESE SHOW ONLY WEAK CORRELATION WITH THE GEOLOGICAL TYPES.
SULPHUR ISOTOPES IN ANCIENT SEAS AND STRATA-BOUND SULPHIDE DEPOSITS, 1966-68.
FROM DATA FOR 65 STRATA-BOUND SULPHIDE DEPOSITS A PARALLELISM EXISTS BETWEEN AVERAGE SULPHUR ISOTOPE RATIOS IN THE ORE AND IN CONTEMPORANEOUS OCEAN WATER. SULPHIDE MINERALS IN THE ORE ARE DEPLETED IN S34 RELATIVE TO SEAWATER SULPHATE. THESE DATA STRONGLY SUGGEST THAT ALL OR MOST OF THE SULPHUR IN THESE STRATA-BOUND DEPOSITS, RANGING IN AGE FROM PRECAMBRIAN TO TERTIARY, WAS DERIVED FROM CONTEMPORANEOUS OCEAN WATER SULPHATE AND WAS REDUCED TO SULPHIDE BY BACTERIAL ACTION.

268. SCHWARCZ, H.P., BOWER, F., MCMASTER UNIV.-
OXYGEN ISOTOPIC COMPOSITION OF SULPHATES FROM ANCIENT MARINE EVAPORITES, 1965-68, M.SC. THESIS (BOWER).

269. SCHWARCZ, H.P., GROOTENBOER, J., MCMASTER UNIV.-
EQUILIBRIUM SULFUR ISOTOPE FRACTIONATION BETWEEN GALENA, SPHALERITE AND PYRITE, 1966-69, PH.D. THESIS (GROOTENBOER).
PBS, ZNS AND FES2 ARE SYNTHESIZED AT SELECTED TEMPERATURES IN THE PRESENCE OF EXCESS SULFUR AND FRACTIONATION OF S-ISOTOPES DETERMINED. COMPARISON WILL BE MADE WITH THEORETICAL CALCULATIONS AND MEASUREMENTS FROM ORE DEPOSITS.

270. SCHWARCZ, H.P., PRASAD, N., MCMASTER UNIV.-
OXYGEN AND CARBON ISOTOPE ANALYSES OF DIAGENETIC AND

SYNGENETIC DOLOMITE, 1964-67, M.SC. THESIS (PRASAD).

271. SCHWARCZ, H.P., SCHINDLER, J.N., MCMASTER UNIV.-
ISOTOPIC COMPOSITION OF SULPHUR IN SEDIMENTARY ROCKS AND STRATIFORM ORE DEPOSITS, 1967-70, PH.D. THESIS (SCHINDLER).
STUDY OF ISOTOPIC COMPOSITION OF SULPHIDES IN SHALES, SANDSTONES AND VOLCANIC ROCKS OF VARIOUS AGES. SEARCH FOR SECULAR TREND IN S34/S32 RATIO PARALLEL TO THAT OBTAINED FOR EVAPORITIC SULPHATES.

272. SCOTT, S.A. (MRS.), MCGILL UNIV.-
TRACE-ELEMENT STUDY, TEMAGAMI MINE ORE, ONTARIO, 1965-68, M.SC. THESIS.

273. SEN GUPTA, J.G., GEOL. SURV. CANADA-
A STUDY OF THE DISTRIBUTION OF PLATINUM-GROUP METALS IN METEORITES, 1964-69.
USE OF OTHER COMPOUNDS RELATED TO ARSENAZO III IN THE DETERMINATION OF PALLADIUM IS ALSO BEING EXAMINED. SEE ARSENAZO III AS A SENSITIVE AND SELECTIVE REAGENT FOR THE SPECTROPHOTOMETRIC DETERMINATION OF PALLADIUM IN IRON AND STONY METEORITES, ANAL. CHEM. 39, PP. 18-22, 1967.
EXAMINATION OF METHODS FOR DETERMINATION OF FLUORINE AND CHLORINE IN ROCKS AND MINERALS WITHOUT DISTILLATION, 1967-68.
MODIFICATION AND IMPROVEMENT OF THE METHODS OF HUANG AND JOHNS, USING ALIZAROL CYANINE RC AND ZIRCONIUM FOR FLUORINE, AND MERCURIC THIOCYANATE AND FERRIC IRON FOR CHLORINE. USE OF OTHER REAGENTS FOR FLUORINE IS ALSO BEING STUDIED.

274. SHAW, D.M., MCMASTER UNIV.-
METAMORPHIC HISTORY OF THE APSLEY PARAGNEISS, SOUTHEASTERN ONTARIO, 1958-.
A STUDY OF THE ORIGINAL COMPOSITION OF APSLEY GNEISS AND ITS GEOCHEMICAL RESPONSE TO INTRUSION OF THE LOON LAKE PLUTON. SEE GEOLOGY OF CHANDOS TOWNSHIP, ONT. DEPT. MINES, GEOL. REPT. NO. 11, 1958.
ELEMENT ABUNDANCES IN THE CANADIAN PRECAMBRIAN SHIELD, 1962-.
CONTINUED STUDY OF SELECTED MINOR ELEMENTS NOT DETERMINED IN THE EARLIER STUDIES. SEE AN ESTIMATE OF THE CHEMICAL COMPOSITION OF THE CANADIAN PRECAMBRIAN SHIELD, CAN. JOUR. EARTH SCI., VOL. 4, PP. 829-853, 1967.

GEOCHEMISTRY

275. SIZGORIC, T.M. (MRS.), MCGILL UNIV.-
GAS TRANSFER OF MOLYBDENUM SULPHIDE, 1966-68, M.SC. THESIS.

276. SKIPPEN, G.B., CARLETON UNIV.-
AN EXPERIMENTAL STUDY OF THE METAMORPHISM OF SILICEOUS CARBONATES, 1967-69.
THE RESEARCH IS INTENDED TO PRODUCE A PETROGENETIC GRID FOR THOSE MARBLES IN WHICH THE FOLLOWING PHASES ARE OBSERVED- QUARTZ, CALCITE, DOLOMITE, TALC, TREMOLITE, DIOPSIDE, FORSTERITE, ENSTATITE, WOLLASTONITE. SEE IGNEOUS AND METAMORPHIC REACTIONS INVOLVING GAS EQUILIBRIA, IN RESEARCHES IN GEOCHEMISTRY, VOL. II, ED. P.H. ABELSON, JOHN WILEY AND SONS, NEW YORK.

277. SMITH, A.Y. GEOL. SURV. CANADA-
GEOCHEMICAL PROSPECTING RESEARCH - URANIUM, 1967-68.
THIS PROJECT IS DESIGNED TO TEST RECONNAISSANCE AND DETAILED GEOCHEMICAL PROSPECTING TECHNIQUES EMPLOYING STREAM SEDIMENTS, WATERS AND SOILS FOR THE DETECTION OF URANIUM DEPOSITS IN THE CANADIAN SHIELD. IT IS INTENDED TO PROVIDE SOME GENERAL PRINCIPLES OF THE DISPERSION OF URANIUM IN THE VARIOUS SURFICIAL ENVIRONMENTS OF THE SHIELD.

278. SMITH, D.G.W., UNIV. OF ALBERTA, BELL, J.B., BAKER, P.E., ATKINS, F.B., OXFORD UNIV.-
THE GEOCHEMISTRY, PETROLOGY AND VOLCANOLOGY OF ASCENSION ISLAND, MID-ATLANTIC RIDGE, 1964-69.
SUITES OF SPECIMENS COLLECTED BY THE 1964 AND 1965 OXFORD EXPEDITIONS ARE BEING INVESTIGATED IN A COMPREHENSIVE PROGRAMME OF OPTICAL, CHEMICAL, ISOTOPIC AND RADIOMETRIC AGE WORK. SEE OXFORD EXPEDITION TO ASCENSION ISLAND 1964, NATURE, VOL. 204, P. 722, 1964.

279. SMITH, F.G., UNIV. OF TORONTO-
GRAIN GROWTH IN METAMORPHIC ROCKS, 1964-73.
MODELS FOR STUDIES OF RECRYSTALLIZATION, GROWTH OF METACRYSTS, ETC. IN HIGH GRADE METAMORPHIC ROCKS ARE BEING DEVELOPED FROM SALT SYSTEMS.
COMPUTATION OF CRYSTAL-LIQUID EQUILIBRIA IN MULTICOMPONENT SYSTEMS, 1963-73.
A SYSTEM OF STORAGE AND RETRIEVAL OF PUBLISHED DATA ON MINERAL AND ROCK SYSTEMS HAS BEEN TESTED ON A BLOCK OF ITEMS DEALING WITH SALT SYSTEMS. WORK ON THE PROJECT CONSISTS OF COMPLETING THE INDEXING OF ITEMS ON SALT SYSTEMS AND THIS IS TO BE FOLLOWED BY INDEXING OF ITEMS ON SULPHIDE, SILICATE, AND OTHER SYSTEMS OF

INTEREST IN GEOCHEMISTRY. COMPUTER PROGRAMS FOR PLOTTING LIQUIDUS DATA OF SILICATE SYSTEMS ARE BEING TRANSLATED FROM FORTRAN II TO FORTRAN IV. SEE COMPUTATION AND PLOTTING OF LIQUIDUS ISOTHERMS IN MULTICOMPONENT SILICATE SYSTEMS, CAN. MINERAL., VOL. 8, PP. 424-430, 1966.

280. SMITH, J.R., SASKATCHEWAN RESEARCH COUNCIL-
GEOLOGY AND GEOCHEMISTRY OF THE PRECAMBRIAN IN SASKATCHEWAN, 1959-.
THIS PROJECT INVOLVES A STUDY OF THE RELATIONSHIP BETWEEN TRACE METAL DISTRIBUTION IN ROCKS AND BASE METAL ORES IN SASKATCHEWAN. SEE PRELIMINARY REPORT ON THE GEOLOGY AND GEOCHEMISTRY OF THE HANSON LAKE WEST AREA, SASKATCHEWAN, PART 2- INTERIM GEOCHEMICAL RESULTS, 1966.

281. SMITHERINGALE, W.G., AND GRADUATE STUDENTS, MEMORIAL UNIV. OF NEWFOUNDLAND-
DISTRIBUTION OF TRACE ELEMENTS IN MAFIC ROCKS, 1966-.

282. SUTHERLAND-BROWN, A., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
INVESTIGATION OF MERCURY HALOS, 1965-.
SEE INVESTIGATION OF MERCURY DISPERSION HALOS AROUND MINERAL DEPOSITS IN CENTRAL BRITISH COLUMBIA, SYMPOSIUM ON GEOCHEMICAL PROSPECTING, GEOL. SURV. CAN., PAPER 66-54, 1967.

283. THOMAS, R.L., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
THE INORGANIC GEOCHEMISTRY OF GREAT LAKES SEDIMENTS, 1967-.
A STUDY OF THE VERTICAL AND SPATIAL DISTRIBUTION OF MAJOR, MINOR, AND TRACE ELEMENTS IN THE BOTTOM SEDIMENTS OF LAKE ONTARIO WITH PARTICULAR REFERENCE TO THE GEOCHEMISTRY OF IRON AND SULPHUR.

284. TREMBATH, L.T., UNIV. OF NEW BRUNSWICK-
SULPHIDE CALIBRATION STANDARDS, 1966-68.
PREPARATION OF CALIBRATION STANDARDS SUITABLE FOR USE WITH OPTICAL SPECTROGRAPH AND ELECTRON PROBE.

285. TUREK, A., HAUGH, I., MCRITCHIE, D., WEBER, W., SCOATES, R.F.J., PHILLIPS, K.A., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES- ANDERSON, D.T., BRISBIN, W.C., CHURCH, N.B., HALL, D.H., TURNOCK, A.C.,

GEOCHEMISTRY

WILSON, H.D.B., AND GRADUATE STUDENTS, UNIV. OF MANITOBA-
PROJECT PIONEER, 1965-71.
A COOPERATIVE COMPREHENSIVE FIELD AND LABORATORY STUDY OF THE RICE LAKE-BERESFORD LAKE AREA OF SOUTHEASTERN MANITOBA. INCLUDES DETAILED MAPPING, PHOTOGEOLOGIC INTERPRETATION, AEROMAGNETIC INTERPRETATION, DEEP CRUSTAL SEISMIC SURVEY, GRAVITY, ROCK MAGNETISM, REGIONAL AND LOCAL DETAILED STRUCTURAL ANALYSES, GAMMA-RAY SPECTROMETRY, PETROLOGY, MINERALOGY, CHEMISTRY, TRACE ELEMENTS, GEOCHRONOLOGY, ECONOMIC GEOLOGY, AND STUDIES OF VOLCANICITY, SEDIMENTATION, AND METAMORPHISM.

286. TURNOCK, A.C., UNIV. OF MANITOBA-
MELTING RELATIONS OF PYROXENES EN-FS-WO, 1965-68.
THE TEMPERATURES OVER THE LIQUIDUS AND SOLIDUS SURFACES OF THE SYSTEM EN-FS-WO ARE BEING DETERMINED AT A TOTAL PRESSURE OF 1 ATM. AND CONTROLLED PARTIAL PRESSURE OF OXYGEN. SEE PRELIMINARY RESULTS ON MELTING RELATIONS OF SYNTHETIC PYROXENES ON THE DIOPSIDE-HEDENBERGITE JOIN- CARNEGIE INST. WASH. YEARBOOK 61, P. 82.

287. USIK, L. (MISS), GEOL. SURV. CANADA-
GEOBOTANY, 1967-.
AN INVESTIGATION OF THE SCOPE, FEASIBILITY, AND APPLICATION OF GEOBOTANY IN CANADA. CONSIDERATION IS BEING GIVEN PRIMARILY TO DEVELOPING GEOBOTANY AS AN ADDITIONAL EXPLORATION TOOL IN THE SEARCH FOR MINERAL DEPOSITS. SEE A REPORT ON CIRCULAR FEATURES IN ORGANIC TERRAIN, GEOL. SURV. CAN., PAPER 66-2, 1966.

288. WANLESS, R.K., FAHRIG, W.F., GEOL. SURV. CANADA-
ISOTOPIC COMPOSITION OF STRONTIUM IN CANADIAN SHIELD, 1967-.

289. WANLESS, R.K., LOVERIDGE, W.D., BOYLE, R.W., STEVENS, R.D., PETERS, C., LEECH, G.B., ROSCOE, S.M., GEOL. SURV. CANADA-
ISOTOPIC STUDY OF CANADIAN LEAD ORES, 1956-.
TO DETERMINE THE LEAD (AND POSSIBLY SULPHUR) ISOTOPE DISTRIBUTION IN LEAD ORES, TO INVESTIGATE POSSIBLE ISOTOPE VARIATIONS WITH GEOLOGICAL ENVIRONMENT, TO DETERMINE THE DIRECTION AND MAGNITUDE OF ISOTOPIC FRACTIONATION OF LEAD ISOTOPES AS A RESULT OF CHEMICAL AND PHYSICAL PROCESSES IN NATURE, WHEN APPLICABLE, TO ESTABLISH THE AGE, EMPLOYING THE **COMMON LEAD** METHOD OF DATING.

GEOCHEMISTRY

290. WANLESS, R.K., LOVERIDGE, W.D., MEILLEUR, G., GEOL. SURV. CANADA-
DEVELOPMENT OF SOLID SOURCE MASS SPECTROMETER, 1967-.
TO DESIGN, FABRICATE AND ASSEMBLE A 15 INCH RADIUS, 90 DEGREES DEFLECTION, SOLID SOURCE MASS SPECTROMETER.

291. WATKINSON, D.H., UNIV. OF TORONTO-
EXPERIMENTAL STUDY OF RELATIONSHIPS BETWEEN NIOBIUM MINERALIZATION AND CARBONATITES, 1967-69.
STUDY OF THE JOIN NANBO3 - CANB2O6 - CACO3 - NA2CO3 - H2O AT HIGH TEMPERATURES AND PRESSURES AND COMPARISON OF THE SYNTHETIC NIOBATES WITH NATURAL NIOBIUM MINERALS FROM CARBONATITES.
EXPERIMENTAL STUDIES OF CARBONATITE-ALKALIC ROCK GENESIS, 1967-69.
MELTING RELATIONS ON THE JOIN NAALSIO4 - CA2AL2SIO7 - CACO3 - H2O AT HIGH PRESSURES AND TEMPERATURES AND COMPARISONS WITH NEPHELINE AND MELILITE-BEARING ALKALIC ROCK - CARBONATITE COMPLEXES.

292. WEBBER, G.R., MCGILL UNIV.-
APPLICATION OF INSTRUMENTAL METHODS OF ANALYSIS TO GEOLOGICAL MATERIALS, 1959-.
SEE DETERMINATION OF ZIRCONIUM IN ROCKS BY X-RAY FLUORESCENCE USING SCATTERED RADIATION TO CORRECT FOR MATRIX EFFECTS, CANADIAN SPECTROSCOPY, VOL. 12, NO. 3, PP. 105-110, 1967.

293. WILLIAMS, G.D., UNIV. OF ALBERTA-
GEOCHEMISTRY OF MUDS AND SHALES, 1963-.
SEE CHEMICAL COMPOSITION OF SHALES OF THE MANNVILLE GROUP (LOWER CRETACEOUS) OF CENTRAL ALBERTA, CANADA, BULL. AMER. ASSOC. PETROLEUM GEOLOGISTS, VOL. 49, PP. 81-87, 1965.

294. WILSON, H.D.B., UNIV. OF MANITOBA-
THE IGNEOUS EPISODES IN THE SUPERIOR PROVINCE, CANADIAN SHIELD, 1964-.
THE CHEMICAL NATURE OF THE PRINCIPAL IGNEOUS EPISODES IS BEING DETERMINED BY CHEMICAL ANALYSIS. THUS FAR, THESE INCLUDE THE ARCHAEAN LAVAS, THE KENORAN GRANITIC INTRUSIONS, THE **KEEWEENAWAN** DIABASES AND LAVAS, THE LATE SYENITIC-ALKALINE PLUGS, AND THE INTRUSIONS AND LAVAS ALONG THE BOUNDARY OF THE PROVINCE. SEE VOLCANIC HISTORY OF THE CANADIAN ARCHAEAN PROVINCE- INTERNATIONAL SYMPOSIUM ON VOLCANOLOGY, NEW ZEALAND, 1965.

GEOCHEMISTRY

295. WOLFE, W.J., NEW BRUNSWCK DEPT. OF NATURAL RESOURCES- REGIONAL GEOCHEMISTRY OF STREAM AND SPRING SEDIMENTS, SOUTHWESTERN NEW BRUNSWICK, 1965-70.

SYSTEMATIC REGIONAL SAMPLING OF STREAM AND SPRING SEDIMENTS, AND ANALYSIS FOR 8 TO 10 TRACE ELEMENTS IS FOLLOWED BY DETAILED EXAMINATION OF SPECIFIC AREAS FOR THE PURPOSES OF- (A) DEVELOPING CRITERIA FOR DISTINGUSHING BETWEEN SIGNIFICANT AND NON-SIGNIFICANT ANOMALIES, AND (B) OBTAINING FUNDAMENTAL INFORMATION ON THE MOBILITY OF ELEMENTS IN THE SURFICIAL ENVIRONMENT. SEE THE CU, PB, ZN, NI, AG, MN, SN, MO AND AS CONTENTS OF STREAM AND SPRING SEDIMENTS, SOUTHWESTERN CHARLOTTE COUNTY, NEW BRUNSWCK, MINES DIVISION, NEW BRUNSWICK DEPARTMENT OF NATURAL RESOURCES, REPORT OF INVESTIGATION NO. 4.

296. WYNNE-EDWARDS, H.R., FUH, T.-M., QUEEN S UNIV.- GEOCHEMICAL CORRELATION OF ROCKS ON EITHER SIDE OF THE GRENVILLE FRONT AT VAL D OR, QUEBEC, 1967-69, PH.D. THESIS (FUH).

A TEST BY GEOCHEMICAL CORRELATION USING FIVE SAMPLE AREAS, OF THE HYPOTHESIS THAT THE ARCHAEAN ROCKS NEAR VAL D OR, INCLUDING THE ABITIBI GREENSTONE BELT, CONTINUE EASTWARD IN THE GRENVILLE PROVINCE. SEE MONT LAURIER AND KEMPT LAKE MAP-AREAS, QUEBEC, GEOL. SURV. CAN., PAPER 66-32, 1966.

GEOCHRONOLOGY

297. BAADSGAARD, H., DE LA CRUZ, N.N., UNIV. OF ALBERTA-
RB-SR ISOTOPIC RELATIONS IN BENTONITE, 1966-68, M.SC. THESIS (DE LA CRUZ).
THIS PROJECT WAS INITIATED IN THE HOPE THAT THE ISOTOPIC EVIDENCE WOULD THROW SOME LIGHT ON NATURE AND DURATION OF DIAGENESIS AND ALTERATION IN THE FORMATION OF BENTONITIC CLAY HORIZONS.

298. BAADSGAARD, H., FOLINSBEE, R.E., CUMMING, G.L., GREEN, D.C., CHRISMAS, L., UNIV. OF ALBERTA-
GEOCHRONOLOGY OF (1) WESTERN CANADIAN CORDILLERA, (2) WESTERN CANADIAN PRECAMBRIAN SHIELD, NORTHEASTERN ALBERTA, (3) CANADIAN PRECAMBRIAN SHIELD AREA AROUND YELLOWKNIFE, N.W.T., 1960-, PH.D. THESIS (GREEN), M.SC. THESIS (CHRISMAS).
THE RESEARCH ALSO INVOLVES FOLLOWING UP MORE DETAILED PROBLEMS (E.G. PB-ISOTOPE SYSTEMATICS VS. RB-SR) WITHIN THE FRAMEWORK OF THE LARGER GEOCHRONOLOGIC PROBLEMS. SEE GEOCHRONOLOGY OF THE CANADIAN SHIELD IN NORTHEASTERN ALBERTA I. ANDREW LAKE AREA, CAN. J. EARTH SCI., VOL. 4, PP. 541-563, 1967.

299. BAADSGAARD, H., TOMLINSON, M., UNIV. OF ALBERTA-
THERMAL MIGRATION OF RB-SR IN A GRANITE, 1963-68.

300. BARTON, J.M., MCGILL UNIV.-
GEOCHRONOLOGY OF CHATHAM-GRENVILLE TYPE ROCKS, QUEBEC, 1967-69, M.SC. THESIS.

301. BURWASH, R.A., UNIV. OF ALBERTA-
GEOCHRONOLOGY OF PRECAMBRIAN STRATIFIED ROCKS IN WESTERN CANADA, 1966-70.
POTASSIUM-ARGON DATING OF MINERALS AND WHOLE-ROCK SAMPLES OF DIABASE SILLS AND BASALT FLOWS IN THE PURCELL SERIES OF SOUTHWESTERN ALBERTA AND SOUTHEASTERN BRITISH COLUMBIA WAS CARRIED OUT BY G.H. HUNT FROM 1958 TO 1961. RECENT FIELD OBSERVATIONS, COUPLED WITH DATA FROM GEOCHRONOLOGIC RESEARCH BY THE U.S. GEOLOGIC SURVEY IN MONTANA, SUGGEST THAT IT MAY NOW BE POSSIBLE TO CONSTRUCT A MORE ACCURATE TIME-STRATIGRAPHIC FRAMEWORK FOR THE PURCELL-WINDERMERE SEQUENCE OF SEDIMENTARY ROCKS IN SOUTHEASTERN BRITISH COLUMBIA.

302. CARTER, N.C., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
POTASSIUM-ARGON AGE DETERMINATIONS OF PORPHYRY-TYPE COPPER AND MOLYBDENITE OCCURRENCES, NORTH-CENTRAL BRITISH COLUMBIA, 1967-, PH.D. THESIS, UNIV. OF

GEOCHRONOLOGY

BRITISH COLUMBIA.

303. CLARK, A.H., QUEENS UNIV.-
REGIONAL GEOCHRONOLOGY AND METALLOGENESIS OF THE ANDEAN MOBILE BELT, NORTHERN CHILE, 1966-70.
AN INVESTIGATION IN COOPERATION WITH N.J. SNELLING, INST. OF GEOL. SCIENCES, UNITED KINGDOM, OF THE ENVIRONMENT OF MINERALIZATION IN THE ANDEAN MOBILE BELT ON THE BASIS OF ISOTOPIC DATING OF INTRUSIVE, VOLCANIC, METAMORPHIC, AND SEDIMENTARY ROCKS AND THEIR ASSOCIATED ORE DEPOSITS. SEE IMPLICATIONS OF THE ISOTOPIC AGES OF IGNIMBRITE FLOWS, SOUTHERN ATACAMA DESERT, CHILE, NATURE (LOND.), VOL. 215, PP. 723-724, 1967.

304. CLARK, G.S., WILSON, H.D.B., UNIV. OF MANITOBA-
RB-SR ISOTOPE AGE STUDY - NORTHWESTERN ONTARIO AND NORTHEASTERN MANITOBA, 1967-.
RB-SR ISOTOPIC INVESTIGATION OF ALKALINE INTRUSION IN THE SUPERIOR PROVINCE OF THE CANADIAN SHIELD, 1968-.
LABORATORY WORK IS AWAITING COMPLETION OF A MASS SPECTROMETER FOR THE ISOTOPE STUDIES. THE MASS SPECTROMETER WILL BE A 10-INCH RADIUS, 90 DEGREE SECTOR MAGNET, SOLID-SOURCE INSTRUMENT.

305. CORMIER, R.F., ST. FRANCIS XAVIER UNIV.-
RUBIDIUM-STRONTIUM DATING OF ROCKS AND MINERALS, 1960-.
PRESENT WORK INVOLVES DATING OF PRECAMBRIAN VOLCANIC ROCKS FROM THE COLDBROOK GROUP OF SOUTHERN NEW BRUNSWICK. SEE ABSOLUTE AGE OF THE FISSET BROOK FORMATION AND THE DEVONIAN-MISSISSIPPIAN BOUNDARY, CAPE BRETON ISLAND, NOVA SCOTIA, CAN. J. EARTH SCI., VOL. 1, PP. 159-166, 1964.

306. DE LAETER, J., CLARK, W.B., SCHWARCZ, H.P., MCMASTER UNIV.-
SEARCH FOR EXTINCT AL26 IN METEORITES, 1967-68.
STUDY OF MAGNESIUM ISOTOPIC COMPOSITION IN METEORITIC FELDSPAR AND OTHER PHASES, TO SEARCH FOR ANOMALOUSLY HIGH ABUNDANCES OF MG26 DUE TO DECAY OF 7 X 10XX5 Y. AL26.

307. DOIG, R., MCGILL UNIV.-
ABUNDANCE OF K, RB, SR, AND AR, AND ISOTOPES OF THESE ELEMENTS, APPLIED TO GEOLOGICAL PROBLEMS, 1966-.
K/RB RATIOS IN ANORTHOSITES AND RELATED ROCKS, K-AR AND RB-SR ISOTOPIC STUDIES WITH RESPECT TO ROCKS OF THE CHATHAM-GRENVILLE TYPE, ASSOCIATED CARBONATES,

MONTEREGIAN ROCKS, ROCKS OF THE ANORTHOSITE-MANGERITE SERIES, AND A VARIETY OF POST-OROGENIC ROCKS FROM THE GRENVILLE PROVINCE.

308. FARRAR, E., QUEEN S UNIV.-
GEOCHRONOLOGY, 1966-.
AN MS10 GAS SOURCE MASS SPECTROMETER WILL ENABLE THIS LABORATORY TO UNDERTAKE K-AR AGE DETERMINATION STUDIES. POTASSIUM CONCENTRATIONS WILL BE DETERMINED BY BOTH FLAME PHOTOMETRY AND X-RAY FLUORESCENE. A STUDY OF THE FOSSIL FISSION TRACK METHOD OF AGE DETERMINATION HAS ALSO BEEN INITIATED. SEVERAL MUSCOVITE AND GLASS SAMPLES, KNOWN TO CONTAIN NATURALLY OCCURRING FISSION TRACKS, HAVE BEEN IRRADIATED WITH THERMAL NEUTRONS AND SOME PRELIMINARY AGES HAVE BEEN CALCULATED.

309. GITTINS, J., YORK, D., UNIV. OF TORONTO-
ARGON RETENTIVITY AND GEOCHRONOLOGY OF THE FELDSPATHOIDAL MINERALS AND ALKALINE-CARBONATITE COMPLEXES, 1965-.
A CONTINUING STUDY OF THE INTRUSION OF ALKALINE AND CARBONATITE COMPLEXES IN CANADA.

310. HOGARTH, D.D., LAMBERT, R.ST. J., NIXON, C.M.) UNIV. OF OTTAWA
PETROLOGIC-STRUCTURAL STUDY OF ROCKS IN THE OLD CHELSEA REGION OF QUEBEC, 1960-70- M.SC. THESIS (NIXON).
INCLUDES GEOLOGICAL MAPPING, STUDIES OF RELATIONS OF IGNEOUS ROCKS INCLUDING DATING BY SR/RB AND K/AR METHODS, STUDY OF ALKALIC ROCKS AND INTRUSIVE CARBONATES, AND METAMORPHISM, ESPECIALLY WITH RESPECT TO CARBONATE ROCKS.

311. MCNUTT, R.H., FRYER, B.J., MCMASTER UNIV.-
A RB87-SR87 ISOTOPIC STUDY OF AN ANORTHOSITE BODY, 1967-68.

A RB87-SR87 ISOTOPIC STUDY OF THE MT. ALBERT DUNITE, GASPE, QUEBEC, 1965-.

312. MITCHELL, R.H., CROCKET, J.H., MCMASTER UNIV.-
SR ISOTOPIC STUDY OF KIMBERLITE, 1966-69, PH.D. THESIS.
THE SR ISOTOPIC COMPOSITION OF KIMBERLITES FROM SOUTH AFRICA HAS BEEN MEASURED MASS SPECTROMETRICALLY. BOTH MATRIX AND PHENOCRYSTS HAVE BEEN ANALYZED. A COMPARISON OF MATRIX AND PHENOCRYST ISOCHRONS SHOULD PROVIDE DATA ON TIME OF CRUSTAL EMPLACEMENT AND TIME

OF KIMBERLITE GENERATION.

313. MORTON, R.D., O*NIONS, R.K., UNIV. OF ALBERTA-
GEOLOGICAL AND GEOCHRONOLOGICAL INVESTIGATIONS ON THE FENNOSCANDIAN SHIELD IN SOUTHERN NORWAY, 1962-70, PH.D. THESIS (O NIONS).
THESE STUDIES WILL PROVIDE THE FIRST DETAILED GEOLOGICAL SURVEY AND MAP OF A LARGE PORTION OF THE FENNOSCANDIAN SHIELD. THE GEOCHRONOLOGICAL AND ISOTOPE STUDIES ASSOCIATED WITH THIS WORK REPRESENT THE FIRST SYSTEMATIC PROGRAM TO BE INITIATED IN THIS REGION. SEE THE NODULAR METAMORPHIC ROCKS FROM THE ENVIRONS OF KRAGERO, SOUTH COAST OF NORWAY, NORSK. GEOL. TIDSSK-RIFT, VOL. 45, PP. 1-23.

314. PROCYSHYN, E.L., MCCARTNEY, W.D., FARRAR, E., QUEEN S UNIV.-
METALLOGENY OF PART OF SOUTH-CENTRAL BRITISH COLUMBIA, 1967-70, PH.D. THESIS (PROCYSHYN).
THE STUDY SEEKS TO CLASSIFY AND CORRELATE MINERAL DEPOSITS WITH THEIR TECTONIC AND STRATIGRAPHIC SETTING AND THE IGNEOUS HISTORY OF THE REGION AND WILL INCLUDE ABSOLUTE AGE DETERMINATIONS ON CRITICAL IGNEOUS INTRU-SIVES AND ALTERATION ZONES RELATED TO MINERAL DEPOSITS. SEE METALLOGENY OF POST-PRECAMBRIAN GEOSYNCLINES, GEOL. SURV. CAN., PAPER 65-6, 1965.

315. RIMSAITE, J.Y.H. (MISS), GEOL. SURV. CANADA-
MINERALOGICAL STUDIES OF MICAS AND PETROLOGICAL STUDIES OF HOST ROCK, 1959-.
RESEARCH CONTINUES ON MICAS FROM UNCOMMON ROCKS (NEPHELINE SYENITE, CARBONATITE, LI-PEGMATITE) AND ON RETENTION AND ADSORPTION OF ARGON AS A FUNCTION OF DEHYDRATION CONDITIONS OF BIOTITE, PHOLOGOPITE AND MUSCOVITE. GEOCHEMICAL, MINERALOGICAL AND PETROLOGICAL DATA ON POLYMICA ROCKS ARE BEING COMPILED. SEE STUDIES OF ROCK FORMING MICAS, GEOL. SURV. CAN., BULL. 149, 1967.

316. RUTHERFORD, A., SASKATCHEWAN RESEARCH COUNCIL-
TRITIUM DATING, 1964-.
STUDY OF MOVEMENT OF GROUNDWATER, RECHARGE OF RIVERS AND EVAPORATION - PRECIPITATION CYCLE. SEE INTERPRETATION OF TRITIUM CONCENTRATIONS IN SASKATCHE-WAN WATERS- PROGRESS REPORT NO. 2, CHEMISTRY DIVISION, SASK. RESEARCH COUNCIL.

GEOCHRONOLOGY

317. WANLESS, R.K., LOVERIDGE, W.D., BOYLE, R.W., STEVENS, R.D., PETERS, C., LEECH, G.B., ROSCOE, S.M., GEOL. SURV. CANADA-
ISOTOPIC STUDY OF CANADIAN LEAD ORES, 1956-.
TO DETERMINE THE LEAD (AND POSSIBLY SULPHUR) ISOTOPE DISTRIBUTION IN LEAD ORES, TO INVESTIGATE POSSIBLE ISOTOPE VARIATIONS WITH GEOLOGICAL ENVIRONMENT, TO DETERMINE THE DIRECTION AND MAGNITUDE OF ISOTOPIC FRACTIONATION OF LEAD ISOTOPES AS A RESULT OF CHEMICAL AND PHYSICAL PROCESSES IN NATURE, WHEN APPLICABLE, TO ESTABLISH THE AGE, EMPLOYING THE **COMMON LEAD** METHOD OF DATING.

318. WANLESS, R.K., LOVERIDGE, W.D., MEILLEUR, G., GEOL. SURV. CANADA-
DEVELOPMENT OF SOLID SOURCE MASS SPECTROMETER, 1967-.
TO DESIGN, FABRICATE AND ASSEMBLE A 15 INCH RADIUS, 90 DEGREES DEFLECTION, SOLID SOURCE MASS SPECTROMETER.

GEOMORPHOLOGY AND GLACIOLOGY

319. BROSCOE, A.J., CLISSOLD, R.J., UNIV. OF ALBERTA-
ROCK GLACIERS, MALIGNE RANGE, JASPER NATIONAL PARK, ALBERTA, M.SC. THESIS (CLISSOLD).
AN INVENTORY OF THE ROCK GLACIERS AND SIMILAR FEATURES HAS BEEN COMPLETED, A DETAILED STUDY OF SPECIFIC FEATURES IS PLANNED.

320. BROSCOE, A.J., THOMSON, S., UNIV. OF ALBERTA-
DEVEN ROAD LANDSLIDE, EDMONTON, ALBERTA, 1966-67.
A THREE-DIMENSIONAL STUDY OF A BLOCK GLIDE TYPE OF LANDSLIDE IN POORLY CONSOLIDATED BEDROCK. SEE DEVEN ROAD LANDSLIDE, EDMONTON, ALBERTA, CANADA, PAPER BEFORE ASSOCIATION OF ENGINEERING GEOLOGISTS, DALLAS TEXAS, OCT. 1967 (IN PRESS), ENGINEERING GEOLOGY.

321. BROSCOE, A.J., WESTGATE, J.A., THOMSON, S., CURRIE, D.V., UNIV. OF ALBERTA, BAYROCK, L.A., BERG, T.E., RESEARCH COUNCIL OF ALBERTA, RUTTER, N.W., GEOL. SURV. CANADA, KINISKY, J.J., RESEARCH COUNCIL OF ALBERTA.
GLACIAL GEOLOGY AND HYDROLOGY, STEELE GLACIER TERMINUS AREA, YUKON TERRITORY, 1967-68.
THE DATA GAINED IN 1967 ARE NOW BEING EVALUATED. SEVERAL PAPERS ON THE GLACIAL GEOLOGY AND HYDROLOGY OF THE GLACIER ARE PLANNED.

322. CLARK, A.H., QUEEN S UNIV.-
RELATIONSHIPS BETWEEN SUPERGENE MINERAL ALTERATION AND GEOMORPHOLOGICAL HISTORY IN THE COPIAPO REGION OF THE SOUTHERN ATACAMA DESERT, CHILE, 1965-70.
THE CRUCIAL ROLE OF GEOMORPHOLOGY IN THE DEVELOPMENT AND PRESERVATION OF ECONOMICALLY-SIGNIFICANT ENRICHMENT AND OXIDATION ZONES IN COPPER AND SILVER DEPOSITS, AND OF ZONES OF MARTITIZATION IN IRON DEPOSITS IS UNDER STUDY. ELECTRON MICROPROBE ANALYSIS IS SYSTEMATICALLY APPLIED TO THE CLARIFICATION OF THE COMPLEX MINERALOGICAL RELATIONSHIPS EXHIBITED BY THE ALTERATION ZONES. SEE RELATIONSHIPS BETWEEN SUPERGENE MINERAL ALTERATION AND GEOMORPHOLOGY, SOUTHERN ATACAMA DESERT, CHILE, TRANS. INSTN. MINING AND METALL., APPLIED EARTH SCIENCES SECTION, VOL. 76, PP. 89-96, 1967.

323. DAVID, P.P., UNIV. OF MONTREAL-
SAND DUNE OCCURRENCES OF CANADA, 1967-70.
A MAP SHOWING THE DISTRIBUTION OF SAND DUMES IN CANADA IS BEING PREPARED.
STUDY OF SELECTED SAND DUNE AREAS IN CANADA, 1965-69.
SOME 15 AREAS OF SAND DUNE OCCURRENCES REPRESENT-

ING DIFFERENT ENVIRONMENT OF DUNE DEVELOPMENT WERE SELECTED FROM QUEBEC, ONTARIO, MANITOBA AND SASKATCHEWAN. IN EACH AREA THE MORPHOLOGY, STRUCTURE AND STRATIGRAPHY OF THE DUNES IS STUDIED, THE PHYSICAL PROPERTIES OF THE DUNE SANDS AND SOURCE DEPOSITS IS DETERMINED, THE RATE OF ADVANCE OF ACTIVE DUNES IS MEASURED, AND THE CHRONOLOGY OF DUNE-DEVELOPMENT IS ESTABLISHED.

324. ELSON, J.A., THOMAS, R.D., GWYN, H.Q., MCGILL UNIV.-
A QUANTITATIVE STUDY OF DENUDATION, MOUNT ST. HILAIRE, QUEBEC, 1965-, M.SC. THESIS (THOMAS AND GWYN).
A LONG-TERM STUDY IN WHICH GRADUATE STUDENTS EXAMINE PROBLEMS THAT CAN BE EXPECTED TO YIELD RESULTS WITHIN THEIR TIME OF RESIDENCE AT MCGILL. THE OBJECTIVE IS TO DETERMINE THE IMPORTANCE OF VARIOUS PROCESSES ACTIVE ON SLOPES WITH A VIEW TO ESTIMATING THE RATES OF LOWERING OF THE LAND SURFACE AND ULTIMATELY TO EVALUATE THE STATE OF ENTROPY OF VARIOUS LANDSCAPES. PILOT STUDIES ON THE FREQUENCY AND EFFECTS OF NEEDLE ICE ON SLOPES, GROUND ICE (LENSES) AND FROST RIVING ARE CARRIED OUT IN MONTREAL AND TECHNIQUES DEVELOPED ARE APPLIED AT MOUNT ST. HILAIRE.

325. FULTON, R.J., GEOL. SURV. CANADA-
NEOGLACIAL MORAINES, TIEDEMANN GLACIER, BRITISH COLUMBIA, 1967.
TIEDEMANN GLACIER ON THE EAST SIDE OF MOUNT WADDINGTON HAS TWO MAJOR POST-FRASER GLACIATION MORAINES. BOG SAMPLES AND TREE CORES WERE TAKEN IN AN ATTEMPT TO DATE THESE MORAINES. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

326. GRAY, J.T., GEOL. SURV. CANADA-
MASS WASTING STUDIES ON STEEP SLOPE ENVIRONMENTS IN THE OGILVIE AND WERNECKE MOUNTAINS, CENTRAL YUKON TERRITORY, 1966-71, PH.D. THESIS.
A LONG TERM INVESTIGATION OF GEOMORPHIC PROCESSES INCLUDING MOVEMENT OF DEBRIS FROM ROCK-WALL GULLIES WITH A VIEW TO OBTAINING A MEAN RATE OF EROSION UNDER PRESENT DAY CONDITIONS AND RATES AND MODE OF MOVEMENT ON THE TALUS SLOPES AND ON PRO-TALUS DEBRIS MASSES. PARTICULAR ATTENTION IS BEING PAID TO THE EFFECTS OF DIFFERING ROCK TYPES ON SLOPE FORM AND ACTIVITY. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

327. GWYN, Q.H.J., MCGILL UNIV.-
PROCESSES OF SLOPE MOVEMENT, 1966-68, M.SC. THESIS.
EFFECT OF FREEZE-THAW AND WETTING-DRYING CYCLES ON THE

MOVEMENT OF SOILS ON SLOPES, 1966-68, M.SC. THESIS.
STATIONS ON SLOPES WITH NORTHERN AND SOUTHERN EXPOSURES HAVING EXCESSIVE AND POOR DRAINAGE HAVE BEEN INSTRUMENTED TO RECORD AIR AND GROUND TEMPERATURES, SOIL MOISTURE AND SOIL MOVEMENTS.

328. HATTERSLEY-SMITH, G., DEFENCE RESEARCH BOARD, DEPT. NATIONAL DEFENCE-
GEOPHYSICAL RESEARCH IN THE HIGH ARCTIC, 1963-.
THIS PROJECT INCLUDES GLACIOLOGICAL, METEOROLOGICAL AND OCEANOGRAPHIC STUDIES IN NORTHWESTERN ELLESMERE ISLAND. SEE POST-GLACIAL UPLIFT AT TANQUARY FIORD, NORTHERN ELLESMERE ISLAND, N.W.T. (WITH AUSTIN LONG), ARCTIC, VOL. 20, NO. 4 (IN PRESS).
GLACIER MASS BALANCE IN NORTHERN ELLESMERE ISLAND, 1964-.
WORK PRESENTLY CONCENTRATED ON OTTO FIORD, PER ARDUA GLACIERS AND WARB HUNT ICE SHELF.

329. KEELER, C.M., MCGILL UNIV.-
PROPERTIES OF ALPINE SEASONAL SNOW COVER, 1964-68, PH.D. THESIS.

330. KUPSCH, W.O., BURWASSER, G.J., UNIV. OF SASKATCHEWAN-
STUDY OF GLACIAL ICE-THRUST FEATURES OF THE INTERIOR PLAINS, 1967-69- M.SC. THESIS (BURWASSER).

331. KUPSCH, W.O., GRAY, D.M., TORGERSEN, L., UNIV. OF SASKATCHEWAN-
COMPARATIVE STUDY OF SNOW-MELT UNDER ARCTIC AND PRAIRIE CONDITIONS, 1967-69- PH.D. THESIS (TORGERSEN).

332. LORBERG, E., UNIV. OF ALBERTA-
INVESTIGATION OF THREE-DIMENSIONAL GEOMETRY OF A LANDSLIDE SOUTHWEST OF EDMONTON, ALBERTA, 1967-68, M.SC. THESIS.

333. MATHEWS, W.H., UNIV. OF BRITISH COLUMBIA-
GLACIOLOGICAL STUDIES, GRANDUC AREA, BRITISH COLUMBIA- A CONTINUING PROJECT.
INCLUDES STUDIES OF PERIODIC DRAINAGE OF SUMMIT LAKE, GEOTHERMOMETRY UNDER A GLACIER, ETC.

334. MATHEWS, W.H., MACKAY, J.R., UNIV. OF BRITISH COLUMBIA-
SNOW CREEP, 1959-.

GEOMORPHOLOGY AND GLACIOLOGY

335. MULLER, F., MCGILL UNIV.-
GLACIER MASS BALANCE AND CLIMATIC FLUCTUATIONS ON AXEL HEIBERG ISLAND, 1966-76.
ASSESSMENT OF THREE GLACIERS IN CENTRAL PART OF WESTERN AXEL HEIBERG ISLAND AND RELATION TO CLIMATIC CONTROLS.

336. MULLER, F., SIMON, C., CHAMNEY, L., MCGILL UNIV.-
ASSESSMENT OF ICE MASSES OF AXEL HEIBERG ISLAND, 1966-69.
A MORPHOLOGICAL CLASSIFICATION AND INVENTORY OF ALL GLACIERS AND ICE CAPS.

337. RUTTER, N.W., GEOL. SURV. CANADA-
MORAINAL STUDIES OF THE BIGHORN AND GRIZZLY GLACIER, YUKON TERRITORY, 1967.
SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

338. THOMAS, R.D., MCGILL UNIV.-
RATE OF DENUDATION OF MOUNT ST. HILAIRE, 1966-68, M.SC. THESIS.
GEOMORPHOLOGICAL MAPS SHOWING ACTIVE PROCESSES AND A PRELIMINARY ESTIMATE OF RATES OF MOVEMENT BY INDIRECT MEANS AND BY DIRECT MEASUREMENTS ARE BEING PREPARED.

GEOPHYSICS

Electrical

339. ANDERSON, C.D., UNIV. OF MANITOBA-
DIRECT-CURRENT RESPONSE OF BURIED SPHEROIDS, 1967-68.
THE PROJECT CONSISTS OF COMPUTER CALCULATIONS FOR VARIOUS TYPES OF BURIED SPHEROIDS. THE RESULTS WILL BE AN AID TO INTERPRETATION IN EXPLORATION GEOPHYSICS.

340. ANDRIEUX, P., GEOL. SURV. CANADA-
DC RESISTIVITY SURVEY IN THE OTTAWA-CORNWALL AREA, ONTARIO, 1967-68.
THE PURPOSE IS TO ASSESS THE CAPABILITIES AND LIMITATIONS OF DC RESISTIVITY AS A MEANS OF DETERMINING GEOLOGICAL STRUCTURE IN THIS AREA INCLUDING FAULT EXTENSIONS, AND TO DETERMINE THE ELECTRICAL RESISTIVITY OF VARIOUS ROCK TYPES IN THE MAP-AREA.

341. BECKER, A., GEOL. SURV. CANADA-
RADIO WAVE MAPPING USING VLF, 1966-.
THE PURPOSE IS TO ASSESS THE CAPABILITIES OF THE METHOD FOR MAPPING GEOLOGICAL STRUCTURES SUCH AS FAULTS. SEE RADIO WAVE MAPPING OF GROUND CONDUCTIVITY, GEOL. SURV. CAN., PAPER 67-1A, PP. 130-131, 1967.

342. COLLETT, L.S., AHRENS, R.H., GEOL. SURV. CANADA-
AC RESISTIVITY AND EM EQUIPMENT, 1965-68.
THE PURPOSE IS TO CONSTRUCT AN APPARATUS THAT CAN BE USED TO STUDY THE GALVANIC AND INDUCTIVE EFFECTS OF SOILS AND ROCKS IN THE FREQUENCY RANGE FROM 1 TO 1,000 HZ. SEE GEOL. SURV. CAN., PAPER 67-1A, P. 135, 1967.

343. COLLETT, L.S., WYDER, J.E., GEOL. SURV. CANADA-
GROUND FOLLOW-UP ON AIRBORNE INPUT ANOMALIES, 1966-67.
DRILLING, SP AND SINGLE POINT ELECTRICAL LOGGING, SIDE-WALL SAMPLING AND DC RESISTIVITY HAVE BEEN USED TO CHECK AIRBORNE INPUT RESISTIVITY SURVEY WORK IN THE WINKLER AREA, MANITOBA. SEE SURFACE RESISTIVITY SURVEYS IN SOUTHEASTERN MANITOBA, GEOL. SURV. CAN., PAPER (IN PRESS).

344. DYCK, J.H., SASKATCHEWAN RESEARCH COUNCIL-
GEOPHYSICAL PROSPECTING FOR GROUNDWATER IN SOUTHERN SASKATCHEWAN - PRINCIPALLY BY ELECTRICAL METHODS, 1964-68, PH.D. THESIS.
AN ARDA SUPPORTED PROGRAM: TO DETERMINE PHYSICAL PROPERTIES OF GLACIAL DRIFT WHICH COULD BE USED TO DETECT AND EVALUATE WATER BEARING FORMATIONS. BOTH SURFACE AND BOREHOLE ELECTRICAL DATA HAVE BEEN COR-

GEOPHYSICS

RELATED WITH GEOLOGICAL DATA.

345. GLEN, W.E., FIZPATRICK, M.M., QUEEN S UNIV.-
ELECTROMAGNETIC LOGGING OF WATER WELLS IN THE KINGSTON AREA, 1966-68, M.SC. THESIS (GLEN).
INCLUDES THE DESIGN OF A DOWN-HOLE IN-PHASE-OUT-OF-PHASE EM UNIT FOR LOGGING WATER WELLS IN THE KINGSTON AREA. THE OBJECT OF THE PROJECT IS TO TRY TO IDENTIFY AQUIFERS ALONG WITH SALT AND POSSIBLY SULPHUR PRODUCING HORIZONS IN THE AREA. IT IS ESSENTIALLY A WATER SUPPLY PROBLEM.

346. SCOTT, W.J., GEOL. SURV. CANADA-
GROUND FOLLOW-UP ON EM ANOMALIES IN MOOSE RIVER AREA, ONTARIO, 1967-68, PH.D. THESIS, MCGILL UNIV.
THE PURPOSE IS TO STUDY THE CAUSE OF THE BROAD AIRBORNE EM ANOMALIES BY USING SEVERAL GROUND GEOPHYSICAL TECHNIQUES.

347. SEGUIN, M.K., UNIVERSITE LAVAL-
ETUDE THEORIQUE DE MODELES ELECTROMAGNETIQUES OBTENUS PAR METHODE AEROPORTEE, 1967-68.

348. SLANKIS, J.A., GEOL. SURV. CANADA-
THE APPLICATION OF THE MAGNETO-TELLURIC METHOD FOR SULPHIDE ORE PROSPECTING, 1966-68.
THE PURPOSE IS TO STUDY THE USE OF THE MAGNETO-TELLURIC METHOD AT A SINGLE FREQUENCY OF 8 HZ TO DETERMINE IF THE METHOD CAN BE USED FOR SULPHIDE ORE DETECTION.

Gravity

349. BERKHOUT, A.J., DOMINION OBSERVATORY-
INTERPRETATION OF GRAVITY FIELD IN SOMERSET, PRINCE OF WALES, AND NORTHERN BAFFIN ISLAND, 1965-67, PH.D. THESIS, QUEEN S UNIV.

350. BERKHOUT, A.W.J., FITZPATRICK, M.M., QUEEN S UNIV.-
A GEOLOGICAL INTERPRETATION OF GRAVITY OBSERVATION IN THE PRINCE OF WALES - SOMERSET AND NORTHERN BAFFIN ISLANDS REGION, NORTHWEST TERRITORIES, 1965-67, PH.D. THESIS (BERKHOUT).
PROJECT IS UNDER THE AUSPICES OF THE DOMINION OBSERVATORY (GRAVITY DIVISION).

GEOPHYSICS

351. BIDGOOD, D.E.T., JOST, A., NOVA SCOTIA RESEARCH FOUNDATION-
GRAVITY SURVEYS IN NOVA SCOTIA, 1966-.
EXISTING GRAVITY COVERAGE IN CENTRAL AND NORTHERN NOVA SCOTIA WITH STATIONS AT 1000 FOOT INTERVALS ALONG ROADS, TRACKS AND CUT-LINES IS BEING SYSTEMATICALLY, CHECKED AND RECALCULATED ON A DIGITAL COMPUTER. DATA FILES AT PRESENT ON PUNCH CARD WILL BE TRANSFERRED TO MAGNETIC TAPE. A SIMPLE PLOTTING ROUTINE IS USED TO PREPARE STATION LOCATION MAPS. THE GRAVITY SURVEY IS TO BE EXTENDED TO OTHER PARTS OF THE PROVINCE.

352. BOWER, D.R., STACEY, R.A., O BRIEN, J.A., DOMINION OBSERVA-
TORY-
EARTH TIDE MEASUREMENTS, 1966-.
THE EARTH TIDE OBSERVATORY HAS BEEN ESTABLISHED FOR THREE PRINCIPAL REASONS- TO EXTEND THE EXISTING COVERAGE OF CONTINUOUS, SYSTEMATIC OBSERVATIONS OF THE EARTH TIDE, INVESTIGATE THE RELIABILITY OF MICROGRAVI-METRIC INSTRUMENTS AND THE TECHNIQUES OF SITE SELEC-TION AND INSTALLATION, AND TO INVESTIGATE THE UTILITY OF THESE MEASUREMENTS IN REGIONAL STUDIES OF THE EARTH S CRUST.

353. BOYD, J.B., DOMINION OBSERVATORY-
GRAVITY SURVEY OF NORTHERN ALBERTA AND NORTHWEST TERRITORIES, 1967.
AS PART OF THE CONTINUING PROGRAM TO MAP THE REGIONAL GRAVITY FIELD IN CANADA, 3,308 GRAVITY STATIONS WERE OBSERVED IN NORTHERN ALBERTA AND ADJACENT AREAS OF BRITISH COLUMBIA AND THE NORTHWEST TERRI-TORIES. COVERING AN AREA OF ABOUT 225,000 SQUARE MILES THE SURVEY AREA LIES BETWEEN LATITUDES 54 DEGREES N AND 62 DEGREES N AND BETWEEN LONGITUDES 111 DEGREES W AND 121 DEGREES W. REDUCTION OF THIS DATA IS NOW IN PROGRESS.

354. BRISBIN, W.C., UNIV. OF MANITOBA-
GRAVITY STUDIES IN THE RICE LAKE AREA, MANITOBA, 1966-69.
ONE OF SEVERAL GEOPHYSICAL TECHNIQUES USED IN PROJECT PIONEER, A DETAILED GEOLOGICAL AND GEOPHYSICAL STUDY OF THE RICE LAKE GREENSTONE BELT AND NORTHERN EDGE OF THE ENGLISH RIVER GNEISSIC BELT. OBJECTIVES ARE TO PROVIDE DATA FOR THE INTERPRETATION OF THE DISTRIBUTION OF ROCK MASSES IN THE UPPER CRUST. WORK IS CLOSELY TIED TO GEOLOGICAL INVESTIGATION IN THE AREA.

GEOPHYSICS

355. BROWN, R.J., UNIV. OF MANITOBA-
ISOSTATIC PROCESSES IN RELATION TO THE ORIGIN OF THE ENGLISH RIVER GNEISSIC BELT, 1966-68- M.SC. THESIS.

356. BUCK, R.J., DOMINION OBSERVATORY-
GRAVITY SURVEYS IN WESTERN CANADA, 1958-68.
SEE THE GRAVITY ANOMALY FIELD IN WESTERN CANADA WITH MAPS- PART I GRAVITY MAP SERIES, DOM. OBS. MAP NOS. 39, 40, 41, 42, 43, 1967.

357. GENDZWILL, D.J., SASKATCHEWAN RESEARCH COUNCIL-
GRAVITY INVESTIGATION, AMISK LAKE - FLIN FLON AREA, SASKATCHEWAN, 1965-68.
A DETAILED INVESTIGATION (ABOUT 3 STATIONS PER SQUARE MILE) OF THE GRAVITY ANOMALIES ASSOCIATED WITH VOLCANIC, SEDIMENTARY AND INTRUSIVE ROCKS IN THE AREA. LARGE ANOMALIES PROVIDE INFORMATION ON THE THICKNESS OF VOLCANICS AND DEPTH OF GRANODIORITES.

358. GIBB, R.A., DOMINION OBSERVATORY-
INTERPRETATION OF GRAVITY ANOMALIES IN NORTHERN MANITOBA, 1965-67.
DENSITY DETERMINATIONS OF SOME 2,000 PRECAMBRIAN ROCK SAMPLES PROVIDE A SOUND BASIS FOR INTERPRETATION OF THE BOUGUER ANOMALIES IN TERMS OF RELATIVELY NEAR-SURFACE MASS DISTRIBUTIONS IN THE UPPER CRUST. IN SOME PARTS OF THE AREA THERE IS EXCELLENT CORRELATION BETWEEN THE SURFACE ROCKS, THEIR DESITIES, AND THE BOUGUER ANOMALIES. THE NELSON RIVER GRAVITY HIGH OUTLINES A BELT OF DENSE GRANULITES. TO THE NORTHWEST THREE GRAVITY LOWS ARE INTERPRETED AS THE GRAVITY EFFECTS OF THREE GRANITIC INTRUSIONS OF WHICH ONE IS LARGELY EXPOSED AT SPLIT LAKE AND THE OTHERS ARE LARGELY BURIED ALTHOUGH THEIR PRESENCE IS SUPPORTED BY THE OCCURRENCE OF NUMEROUS MAPPABLE STOCKS OF INTRUSIVE GRANITE WITHIN THE GRAVITY LOWS. THE NELSON RIVER HIGH IS SEPARATED FROM THESE LOWS BY A STEEP GRAVITY GRADIENT WHICH MARKS A BOUNDARY BETWEEN ROCKS OF PREDOMINANTLY DIFFERENT AGES (HUDSONIAN AND KENORAN) BETWEEN LATITUDES 54 DEGREES AND 56 DEGREES N. THE GRAVITY ANOMALIES, AGE DETERMINATIONS, AND GEOLOGY ARE CONSISTENT WITH AN INTERPRETATION OF THE PIKWITONEI SUBPROVINCE AS IN INLIER OF KENORAN AGE WITHIN THE CHURCHILL PROVINCE. THE MAIN CHURCHILL-SUPERIOR BOUNDARY MAY THEN BE MOVED SOUTH TO WHAT IS AT PRESENT THE SOUTHERN LIMIT OF THE CROSS LAKE SUBPROVINCE, WHICH IS A RETURN TO APPROXIMATELY THE POSITION ORIGINALLY SELECTED BY M.E. WILSON. SEE THE DENSITIES OF PRECAMBRIAN ROCKS FROM NORTHERN MANITOBA, CAN. J.

EARTH SCI., 1967 (IN PRESS).

359. GIBB, R.A., HORNAL, R.W., DOMINION OBSERVATORY-
DENSITIES OF PRECAMBRIAN ROCKS FROM THE CANADIAN SHIELD, 1967-.
THE RESULTS OF SEVERAL THOUSAND DENSITY MEASUREMENTS OF ROCKS COLLECTED FROM THE SHIELD OVER THE PAST SEVERAL YEARS ARE BEING SORTED AND LISTED FOR PUBLICATION.

360. GIBB, R.A., MCCONNELL, R.K., DOMINION OBSERVATORY-
GRAVITY SURVEYS IN NORTHERN MANITOBA AND NORTHEASTERN SASKATCHEWAN, 1965-68.
SEE THE GRAVITY ANOMALY FIELD IN NORTHERN MANITOBA AND NORTHEASTERN SASKATCHEWAN, GRAVITY MAP SERIES, DOM. OBS., MAP NOS. 68, 69, 70, 71, 72, 73, 74, 75, 76 (IN PREPARATION).

361. GOODACRE, A.K., COOPER, R.V., DOMINION OBSERVATORY-
UNDERWATER GRAVITY SURVEY OF THE GULF OF ST. LAWRENCE A CONTINUING PROJECT.
WITH THE ADDITION OF 397 NEW GRAVITY STATIONS, THE REGIONAL SURVEY OF THE GULF OF ST. LAWRENCE WAS COMPLETED IN JUNE 1967. SEE THE BOUGUER GRAVITY ANOMALY FIELD OF THE GULF OF ST. LAWRENCE, GRAVITY MAP SERIES, DOM. OBS. (IN PREPARATION).

362. GOODACRE, A.K., WEBER, J.R., COOPER, R.V., DOMINION OBSERVATORY-
GRAVITY SURVEY OF HUDSON BAY, 1965-68.
WORK IS IN PROGRESS TO COMBINE SURFACE AND UNDERWATER GRAVITY MEASUREMENTS IN THE BAY SO THAT ALL AVAILABLE GRAVITY MEASUREMENTS WILL BE INCORPORATED IN THE GRAVITY MAP. SEE THE GRAVITY FIELD IN HUDSON BAY, GRAVITY MAP SERIES, DOM. OBS. (IN PREPARATION).

363. HORNAL, R.W., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALIES IN THE BEAR AND SLAVE GEOLOGICAL PROVINCES, NORTHWEST TERRITORIES, 1966-68.
A STUDY OF THE REGIONAL GRAVITY SURVEY FROM GREAT SLAVE LAKE TO VICTORIA ISLAND AND FROM DUBAWNT LAKE TO GREAT BEAR LAKE IS IN PROGRESS. THE ANOMALIES CORRELATE WELL WITH STRUCTURAL TRENDS AND GEOLOGICAL FORMATIONS. A LARGE POSITIVE GRAVITY ANOMALY NORTH OF COPPERMINE IS DUE TO LATE PROTEROZOIC FLOOD BASALTS WHICH UNDERLIE PALAEOZOIC ROCKS EXCEPT IN THE AREAS OF THE MINTO ARCH AND THE COPPERMINE RIVER WHERE UP TO

FOUR KILOMETRES OF BASALT ARE EXPOSED. A BELT OF POSITIVE ANOMALY PARALLELS THE ROCKS OF THE SNARE GROUP FROM GREAT SLAVE LAKE TO GREAT BEAR LAKE AND MAY REPRESENT BASIC INTRUSIONS ALONG THE GEOSYNCLINE. A GRAVITY HIGH OVER THE EAST ARM OF GREAT SLAVE LAKE MAY BE RELATED TO BASIC SILLS AND DYKES INTRUDING THE ROCKS OF THE GREAT SLAVE AND ET-THEN GROUPS. A STEEP GRAVITY GRADIENT BETWEEN MASSIVE GRANITE OF ARCHAEAN AGE AND GNEISSES OF PROTEROZOIC AGE MARKS THE BOUNDARY OF THE CHURCHILL AND SLAVE GEOLOGICAL PROVINCES BETWEEN ARTILLERY LAKE AND THE BACK RIVER. SEE THE GRAVITY ANOMALY FIELD IN THE COPPERMINE AREA, N.W.T., GRAVITY MAP SERIES, DOM. OBS. MAP NO. 45 (IN PRESS).

364. INNES, M.J.S., GOODACRE, A.K., DOMINION OBSERVATORY-
INTERPRETATION OF GRAVITY ANOMALIES OVER LAKE SUPERIOR AND SURROUNDING AREAS, 1967.

GRAVITY SURVEYS HAVE OUTLINED LARGE AREAS OF RELATIVELY POSITIVE BOUGUER ANOMALIES IN LAKE SUPERIOR AND IN A ZONE EXTENDING 600 KM NORTH FROM CHAPLEAU THROUGH KAPUSKASING TO MOOSONEE ON JAMES BAY. THE ANOMALOUS AREAS REFLECT LARGE QUANTITIES OF BASIC MATERIAL THAT HAVE BEEN EMPLACED HIGH WITHIN THE CRUSTAL COLUMN, PERHAPS THROUGH A PROCESS OF CRUSTAL RIFTING. GEOLOGICAL AND GEOPHYSICAL MAPPING BY PROVINCIAL AND FEDERAL GOVERNMENT DEPARTMENTS HAVE DEFINED A NORTH TO NORTHEAST TRENDING ZONE OF SHEARING AND FAULTING WITH ASSOCIATED LINEAR MAGNETIC ANOMALIES. THIS FAULT ZONE, AND THE GRAVITY AND MAGNETIC ANOMALY BELTS CUT DIRECTLY ACROSS REGIONAL TRENDS OF EARLY PRECAMBRIAN ROCKS. UPLIFTED BLOCKS OF HIGH-GRADE METAMORPHIC ROCKS, MINOR BASIC AND ULTRABASIC INTRUSIONS, AND THE PRESENCE OF ALKALINE INTRUSIVE COMPLEXES TOGETHER WITH THE DISAPPEARANCE OF THE ARCHAEAN VOLCANIC-SEDIMENTARY ROCKS ALONG THE AXIS OF THE GRAVITY HIGH SUGGEST THAT THE KAPUSKASING FAULT MAY BE A DEEPLY-ERODED COUNTERPART OF AN EAST AFRICAN RIFT VALLEY. GRAVITY AND MAGNETIC ANOMALY PATTERNS OVER THE MICHIGAN BASIN SUGGEST A POSSIBLE EXTENSION OF THIS STRUCTURE TO THE SOUTH. SEE GRAVITY ANOMALIES OVER LAKE SUPERIOR AND SURROUNDING AREAS AND THEIR STRUCTURAL IMPLICATIONS, ANNUAL MEETING, 1967, INSTITUTE ON LAKE SUPERIOR GEOLOGY, MICHIGAN STATE UNIVERSITY (ABSTRACT).

365. INNES, M.J.S., GOODACRE, A.K., WEBER, J.R., MCCONNELL, R.K., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALIES IN HUDSON BAY, 1965-67.

ANALYSIS OF ANOMALY PROFILES CROSSING HUDSON BAY USING SEISMIC DATA FOR CONTROL, SHOWS THAT PALAEOZOIC

AND RECENT SEDIMENTS HAVE LITTLE OVERALL EFFECT ON THE GRAVITY FIELD AND THAT VARIATIONS IN DEPTH TO THE CRUST-MANTLE BOUNDARY HAVE LITTLE OR NO CORRESPONDENCE WITH VARIATIONS IN THE GRAVITY FIELD. IT IS BELIEVED THAT THE GRAVITY VARIATIONS ARE DUE LARGELY TO SYSTEMATIC DENSITY DIFFERENCES IN THE PRECAMBRIAN BASEMENT ROCKS. AN IMPORTANT CONCLUSION IS THAT THE GRAVITY FIELD IN THE NORTHERN PART OF HUDSON BAY MARKS A MAJOR CHANGE IN STRUCTURE AND THAT THE CHURCHILL CRUSTAL BLOCK DOES NOT EXTEND UNINTERRUPTEDLY EASTWARD. IT IS SUGGESTED THAT POSITIVE ANOMALIES REFLECT HIGH-DENSITY GNEISS OR BASIC VOLCANIC ROCKS UNDERLYING THE SEDIMENTARY VENEER. EVIDENCE IS PRESENTED WHICH STRENGTHENS THE HYPOTHESIS THAT THE KAPUSKASING GRAVITY ANOMALY AND ITS NORTHERN AND SOUTHERN EXTENSIONS MARK AN ANCIENT ZONE OF CRUSTAL RIFTING OF CONTINENTAL PROPORTION. SEE STRUCTURAL IMPLICATIONS OF THE GRAVITY FIELD IN HUDSON BAY AND VICINITY, CAN. J. EARTH SCI., 1967 (IN PRESS).

366. INNES, M.J.S., WHITEHEAD, J., DOMINION OBSERVATORY-
GRAVITY MAP OF CANADA, 1966-68.

THE SECOND EDITION OF THE GRAVITY MAP OF CANADA AT A SCALE OF 1-2,500,000 IN FOUR SHEETS IS BASED ON DATA OBTAINED UP UNTIL THE END OF 1966. THE MAP WILL AGAIN BE IN COLOUR AND WILL SHOW BOUGUER ANOMALIES CONTOURED AT INTERVALS OF 10 MGAL. ON PUBLICATION, WHICH SHOULD BE IN JANUARY, 1968, ALL THE DATA SHOWN WILL BE MADE AVAILABLE ON REQUEST, TO THE PETROLEUM AND MINING INDUSTRIES, THE UNIVERSITIES AND OTHER INTERESTED AGENCIES. HOWEVER, SUCH DATA MAY BE IN THE FORM OF PRELIMINARY LISTINGS AND PLOTS AS FINAL MAP PRODUCTION HAS ALWAYS LAGGED BEHIND DATA COMPILATION.

367. JACOBY, W., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALIES IN THE ANSTRUTHER AREA, ONTARIO, 1967-68.

A DETAILED STUDY OF THE NEGATIVE GRAVITY ANOMALIES OVER GRANITES IN THE ANSTRUTHER AREA, ONTARIO, COMPUTER METHODS ARE BEING USED TO FORMULATE 2-D AND 3-D MODELS OF THE GRANITE BATHOLITHS.

368. SOBCZAK, L.W., BERKOUT, A.J., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY FIELD - SOMERSET AND PRINCE OF WALES ISLANDS, NORTHWEST TERRITORIES, 1965-67.

DURING THE SPRING AND SUMMER OF 1965 SOME 750 GRAVITY OBSERVATIONS WERE MADE. THE BOUGUER ANOMALY MAP PREPARED FROM THESE DATA DISPLAYS, IN THE CENTRAL AND SOUTHERN PART OF THE AREA, A SERIES OF NORTH-

TRENDING HIGHS AND LOWS. THESE ANOMALIES ARE ATTRIBUTED TO DENSITY VARIATIONS WITHIN THE CRYSTALLINE BASEMENT ROCKS. TWO LOCAL GRAVITY HIGHS OVER WESTERN PRINCE OF WALES ISLAND ARE INTERPRETED AS INDICATING RELATIVELY NEAR-SURFACE BASIC INTRUSIONS. SEE A PRELIMINARY INVESTIGATION OF GRAVITY OBSERVATIONS IN THE SOMERSET AND PRINCE OF WALES ISLANDS, ARCTIC CANADA, DOM. OBS., GRAVITY MAP SERIES, NO. 81, 1967 (IN PRESS).

369. SOBCZAK, L.W., TANNER, J.G., DOMINION OBSERVATORY-
GRAVITY SURVEY OF QUEEN ELIZABETH ISLANDS, NORTHWEST TERRITORIES, 1966-68.

370. STACEY, R.A., STEPHENS, L.E., COOPER, R.V., DOMINION OBSERVATORY-
GRAVITY SURVEY AND UNDERWATER GRAVITY SURVEY, BRITISH COLUMBIA, 1966-.
A TOTAL OF 284 LAND STATIONS AND 316 UNDERWATER STATIONS WERE OBSERVED DURING THE SURVEYS OF QUEEN CHARLOTTE ISLANDS, VANCOUVER ISLAND, AND THE MAINLAND, AND IN HECATE STRAIT, QUEEN CHARLOTTE SOUND, AND OFF THE WEST COAST OF VANCOUVER ISLAND.

371. STEPHENS, L.E., FITZPATRICK, M.M., QUEEN S UNIV.-
GRAVITY IN THE KINGSTON AREA, 1965-68, M.SC. THESIS (STEPHENS).

372. TANNER, J.G., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALY FIELD OF QUEBEC, 1964-67.
SEE AN AUTOMATED METHOD OF GRAVITY INTERPRETATION, GEOPHYS. J. ROY. ASTRO. SOC., VOL. 13, NOS. 1-3, JULY 1967.

373. TANNER, J.G., WEAVER, D.F., MCCONNELL, R.K., DOMINION OBSERVATORY-
GRAVITY SURVEYS, QUEBEC AND LABRADOR, 1959-68.
THREE PUBLICATIONS IN THE GRAVITY MAP SERIES OF THE DOMINION OBSERVATORY ARE IN PREPARATION. THESE COVER MAP NOS. 64, 65, 66, 67, 68 (IN PRESS), MAP NOS. 7, 8, 9, 10 AND 48 (IN PREPARATION), MAP NOS. 22, 23, 24, 27, AND 47 (IN PREPARATION).

374. WALCOTT, R.I., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALY FIELD IN NORTHERN SASKATCHEWAN, 1967-68.

THE MOST STRIKING FEATURE IN THE AREA IS THE CENTRAL BELT OF UNUSUALLY INTENSE ANOMALIES BOUNDED ON THE NORTHWEST AND SOUTHEAST BY AREAS OF LOW GRAVITY RELIEF. THE WIDTH OF THE GRAVITY HIGHS AND LOWS ARE IN THE RANGE OF 40 TO 70 KILOMETERS AND INDICATE LARGE SCALE VARIATIONS IN MEAN CRUSTAL DENSITY OF THE BASEMENT ROCKS. THAT IS, THE GRAVITY MAPS SHOW A VARIATION IN CRUSTAL LITHOLOGY OF VERY GREAT WAVELENGTH, A VARIATION WHICH IS NOT INDICATED ON EXISTING SMALL SCALE GEOLOGICAL MAPS. IN DETAIL, HOWEVER, WHERE ADEQUATE LARGE SCALE GEOLOGICAL MAPPING DOES EXIST A CORRELATION BETWEEN SURFACE GEOLOGY AND GRAVITY IS INDICATED. FOR INSTANCE, NORTH OF STONY RAPIDS THE GRAVITY HIGH IS CLOSELY RELATED TO NORITES AND METAVOLCANICS OF UNUSUALLY HIGH DENSITY AND THE GRAVITY LOW APPEARS TO BE RELATED TO ALKALINE GRANITE.

375. WEBER, J.R., RICKLYK, D.D., DOMINION OBSERVATORY-
GRAVITY SURVEY OF EASTERN DEVON ISLAND AND SOUTHERN ELLESMERE ISLAND, 1967-68.

A TOTAL OF 470 GRAVITY STATIONS WERE OBSERVED AT 10 KM INTERVALS OVER DEVON AND ELLESMERE ISLANDS. INTERPRETATION OF THE RESULTS IS NOW IN PROGRESS.

376. WEBER, J.R., STEPHENS, L.E., DOMINION OBSERVATORY-
GRAVITY SURVEY OVER THE LINCOLN SEA, 1967-68.

IN MAY 1967, DR. J.R. WEBER LED A JOINT CANADA-USA SCIENTIFIC EXPEDITION TO THE NORTH POLE. THE PARTY FLEW FROM ALERT TO A CAMP ON THE ICE PACK WITHIN 20 MILES OF THE POLE. THEY REMAINED ON THE ICE FLOW FOR EIGHT DAYS TAKING SUN AND STAR SHOTS WHICH WERE RELAYED BY AMATEUR RADIO TO A COMPUTER IN MINNEAPOLIS AND THE COMPUTED POSITION WAS RETURNED TO THE PARTY BY THE SAME ROUTE. GRAVITY AND HYDROGRAPHIC MEASUREMENTS FOR GEODETIC PURPOSES WERE MADE IN THE VICINITY OF THE NORTH POLE AND BETWEEN THE POLE AND ELLESMERE ISLAND. THE POSITIONS OF THESE OBSERVATIONS WERE DETERMINED ACCURATELY WITH RESPECT TO BOTH ASTRONOMIC AND GEODETIC COORDINATES. IN ADDITION, A SONAR DEVICE WAS DROPPED ON THE OCEAN FLOOR AS CLOSE TO THE POLE AS POSSIBLE, FOR USE IN VARIOUS GEOPHYSICAL EXPERIMENTS PROPOSED FOR THE NEXT THREE YEARS.

Heat Flow

377. FOU, T.J., MCGILL UNIV.-
HEAT CONDUCTIVITY OF ROCKS, 1966-68, M.SC. THESIS.

378. JESSOP, A.M., JUDGE, A.S., LEWIS, T., DOMINION OBSERVATORY-
GEOTHERMAL RESEARCH, 1962-.
A PROGRAM TO MEASURE HEAT FLOW IN CANADA USING SPECIAL PURPOSE HOLES, COMMERCIAL HOLES DRILLED ORIGINALLY FOR OTHER PURPOSES AND OTHER TECHNIQUES IN OCEAN CHANNELS AND LAKE BOTTOMS. SEE THREE MEASUREMENTS OF HEAT FLOW IN EASTERN CANADA, CAN. J. EARTH SCI., 1967 (IN PRESS).

Magnetic

379. BHATTACHARYYA, B.K., GEOL. SURV. CANADA-
INTERPRETATION OF AEROMAGNETIC DATA OVER THE ARCTIC ISLANDS AND CONTINENTAL SHELF OF CANADA, 1966-68.
THE AREA COVERS THE NORTHWESTERN PART OF QUEEN ELIZABETH ISLAND, POLAR CONTINENTAL SHELF AND A SEGMENT OF THE ARCTIC OCEAN. THE MAPS OF THE RESIDUAL FIELD AND THE CONTINUATION FIELD UP TO A LEVEL OF 1.6 KMS BELOW THE FLIGHT ELEVATION HAVE REVEALED SOME MAJOR GEOLOGICAL FEATURES IN THIS AREA. STUDIES OF SEVERAL INDIVIDUAL ANOMALIES HAVE BEEN MADE IN ORDER TO CALCULATE THE DEPTH OF THE MAGNETIC BASEMENT AND THE POLARIZATION VECTORS ASSOCIATED WITH MAGNETIZED BODIES.

380. BHATTACHARYYA, B.K., MORLEY, L.W., GEOL. SURV. CANADA-
STUDIES ON MAGNETIC ANOMALIES DUE TO DEEP CRUSTAL SOURCES, 1964-72.
THIS PROJECT WAS INITIATED FOR INTERPRETING THE AEROMAGNETIC DATA OVER THE WHOLE OF CANADA IN ORDER TO DELINEATE DEEP CRUSTAL MAGNETIC SOURCES. INTERPRETATION OF AEROMAGNETIC DATA OVER ONTARIO, NEW BRUNSWICK, NOVA SCOTIA, GULF OF ST. LAWRENCE AND A LARGE SEGMENT OF YUKON TERRITORY HAS BEEN PRACTICALLY FINISHED. SEE THE DELINEATION OF DEEP CRUSTAL MAGNETIC BODIES FROM TOTAL FIELD AEROMAGNETIC ANOMALIES, JOUR. GEOMAG, AND GEOELECTRICITY, VOL. 17, NO. 3-4, PP. 237-252.

381. BHATTACHARYYA, B.K., SKIBO, D.N., GEOL. SURV. CANADA-
QUANTITATIVE INTERPRETATION OF MAGNETIC DATA, 1963-.
COMPUTER-ORIENTED METHODS ARE BEING DEVELOPED FOR ANALYSIS AND INTERPRETATION OF ALL AVAILABLE AEROMAGNETIC DATA. SEE A METHOD FOR COMPUTING THE TOTAL MAGNETIZATION VECTOR AND THE DIMENSIONS OF A RECTANGULAR BLOCK-SHAPED BODY FROM MAGNETIC ANOMALIES, GEOPHYSICS, VOL. 31, PP. 74-96, 1966.

382. CHARBONNEAU, B., GEOL. SURV. CANADA-
MAGNETIC GEOLOGIC CORRELATION ALONG THE SOUTHEAST SIDE OF THE GRENVILLE FRONT, 1967-69.

INVOLVES FIELD CHECKING THE GEOLOGY WITH MAGNETIC PROPERITES OF SURFACE ROCKS. THE ORIGIN OF THE LONG BROAD LOW MAGNETIC AREA ALONG THE GRENVILLE FRONT AND THE DETERMINATION OF ITS CAUSE IS ALSO BEING STUDIED.

383. HALL, D.H., UNIV. OF MANITOBA-
REGIONAL MAGNETIC ANOMALIES IN MANITOBA - A CONTINUING PROJECT.
A MAP OF THE REGIONAL MAGNETIC ANOMALIES IN MANITOBA IS UNDER PREPARATION, USING NUMERICAL FILTERING OF AEROMAGNETIC MAPS. IT IS HOPED THIS WILL AID IN MAPPING THE CONRAD DISCONTINUITY AND IN GEOLOGIC STUDIES OF THE GRANITIC LAYER OF THE CRUST. RESIDUAL MAPS ARE ALSO BEING PREPARED, USING A MECHANICAL PLOTTER ON LINE WITH THE UNIVERSITY COMPUTER, WITH THE HOPE OF PROVIDING MORE USEFUL MAGNETIC MAPS FOR GEOLOGICAL STUDIES. DEVELOPMENT OF INTERPRETATION METHODS AND POWER-SPECTRAL ANALYSES OF MAGNETIC MAPS ARE BEING CARRIED ON IN CONNECTION WITH THE PROJECT.

384. HOOD, P.J., GEOL. SURV. CANADA-
MAGNETIC VERTICAL GRADIENT MEASUREMENTS, 1963-.
THE OBJECTIVE IS TO INVESTIGATE THE APPLICATIONS OF MAGNETIC VERTICAL GRADIENT MEASUREMENTS AND TO DEVELOP TECHNIQUES FOR THE INTERPRETATION OF THE MEASUREMENTS. SEE GRADIENT MEASUREMENTS IN AEROMAGNETIC SURVEYING, GEOPHYSICS, VOL. 30, PP. 891-902, 1965.

385. HOOD, P.J., GROSS, H., GEOL. SURV. CANADA-
FIELD SUSCEPTIBILITY METER, 1965-.
THE OBJECTIVE IS TO DEVELOP AN INDUCTION DEVICE FOR MEASURING THE MAGNETIC SUSCEPTIBILITY OF ROCKS IN SITU TO AID IN THE FIELD CORRELATION OF MAGNETIC DATA AND GEOLOGY. SEE THE CAREY FOSTER IN SITU SUSCEPTIBILITY METER, GEOL. SURV. CAN., PAPER 65-22, 1967.

386. HOOD, P.J., SAWATZKY, P., BOWER, M.E., GEOL. SURV. CANADA, GODBY, E.A., BAKER, R.C., DAVIS, N., NATIONAL AERONAUTICAL ESTABLISHMENT-
COOPERATIVE HIGH SENSITIVITY AEROMAGNETIC PROJECT, 1962-.
THE OBJECTIVES ARE TO DEVELOP NEW AEROMAGNETIC INSTRUMENTATION, SURVEY TECHNIQUES AND METHODS OF COMPILATION AND INTERPRETATION AND TO CONDUCT AND INTERPRET HIGH SENSITIVITY AEROMAGNETIC SURVEYS OVER THE OCEAN AND CONTINENT. SPECIAL EMPHASIS IS BEING PLACED ON THE CONTINENTAL SHELVES AND THE DEEP OCEAN, ESPECIALLY THE MID-OCEAN RIDGE SYSTEM. SEE PROGRESS

REPORT ON LOW-LEVEL AEROMAGNETIC PROFILES OVER THE LABRADOR SEA, BAFFIN BAY, AND ACROSS THE NORTH ATLANTIC OCEAN, GEOL. SURV. CAN., PAPER 66-58, 1967.

387. KORNIK, L.J., MORLEY, L.W., MACLAREN, A.S., HALEY, E., CHARBONNEAU, B., GEOL. SURV. CANADA-
MAGNETIC ANOMALY MAP OF CANADA, 1965-.
THIS INVOLVES THE TECHNIQUE OF REMOVING THE REGIONAL MAGNETIC GRADIENT IN STEPS. THE PRESENT MAP, TO BE PUBLISHED IN COLOUR PRIOR TO MAY 1968, WILL COVER 1,250,000 SQUARE MILES. ADDITIONS WILL BE MADE TO THIS MAP AS AEROMAGNETIC DATA BECOMES AVAILABLE, PROBABLY AT 3 OR 5 YEAR INTERVALS. THIS MAP WILL BE ON A SCALE OF 1-5,000,000.

388. LAROCHELLE, A., GEOL. SURV. CANADA-
PALAEOMAGNETIC RESEARCH ON INTRUSIVE ROCKS OF PALAEOZOIC AND YOUNGER AGES IN THE APPALACHIAN GEOLOGICAL PROVINCE, 1967-70.
TO PROVIDE RELIABLE DATA FOR A POLAR WANDERING CURVE WHICH COULD BECOME A VERY USEFUL TOOL IN DATING ROCKS OR STUDYING THEIR STRUCTURAL HISTORY.

389. LAROCHELLE, A., GEOL. SURV. CANADA, AND GEOLOGICAL STAFF, INTERNATIONAL NICKEL CO.
PALAEOMAGNETIC RESEARCH IN THE SUDBURY BASIN, 1964-68.
AN ATTEMPT TO USE PALAEOMAGNETIC METHODS IN STUDYING THE STRUCTURAL HISTORY OF THE SUDBURY BASIN.

390. MCGRATH, P.H., UNIV. OF MANITOBA-
ROCK MAGNETISM, 1964-67.

391. NORRIS, D.K., LAROCHELLE, A., GEOL. SURV. CANADA-
STRUCTURAL AND PALAEOMAGNETIC FABRIC OF THE MACKENZIE DEFLECTION, 1966-69.
A DETAILED ANALYSIS OF THE REGIONAL AND LOCAL STRUCTURE AND OF THE PALAEOMAGNETIC FABRIC OF THE MACKENIZE DEFLECTION TO ASSESS ITS ORIGIN AND TECTONIC SIGNIFICANCE.

392. PEARCE, G.W., LAROCHELLE, A., GEOL. SURV. CANADA-
PALAEOMAGNETIC RESEARCH ON SEDIMENTARY AND VOLCANIC ROCKS IN THE MARITIME PROVINCES, 1967-70.
TO PROVIDE RELIABLE DATA FOR A POLAR WANDERING CURVE WHICH IS HOPEFULLY TO BE USED IN FUTURE IN THE SOLUTION OF GEOLOGICAL PROBLEMS.

GEOPHYSICS

393. ROBERTSON, W.A., ROY, J.L., DOMINION OBSERVATORY-
PALAEOMAGNETISM OF THE PROTEROZOIC OF CANADA, 1967-80.
THE DETERMINATION OF THE DIRECTION AND INTENSITY OF THE EARTH S MAGNETIC FIELD AS EXPRESSED IN THE PROTEROZOIC ROCKS, PARTICULARLY THE KEEWEENAWAN OF CANADA. THE WORK WILL INCLUDE DETAILED STUDIES (BOTH OF DIRECTION AND INTENSITY) OF RESTRICTED AGE RANGES TO OBTAIN THE AGE RELATION OF NORMALLY AND REVERSELY MAGNETIZED ROCKS, AND TO SET UP PALAEOMAGNETIC TIME HORIZONS IN CONJUNCTION WITH RADIOGENIC DATING. WHERE POSSIBLE, RESULTS WILL BE USED TO TEST THE VALIDITY OF EXTRAPOLATING THE HYPOTHESIS OF THE DIPOLE FIELD AND SECULAR VARIATION BACK INTO PRECAMBRIAN TIME. SEE DATING THE PRECAMBRIAN PALAEOMAGNETICALLY, CAN. JOUR. EARTH SCI. (IN PRESS).

394. ROY, J.L., ROBERTSON, W.A., PARK, J.E., DOMINION OBSERVATORY-
PALAEOMAGNETISM OF THE CARBONIFEROUS ROCKS OF EASTERN CANADA, 1959-69.
DIRECTIONS OF REMANENT MAGNETIZATION OF CARBONIFEROUS ROCKS FROM THE MARITIME PROVINCES ARE BEING TESTED FOR STABILITY, AND POLE POSITIONS CALCULATED FROM THOSE THAT APPEAR TO BE MAGNETIZED IN THE DIRECTION OF THE MAGNETIC FIELD WHEN THEY WERE FORMED. THE AIM OF THE WORK IS TO ELUCIDATE THE MOVEMENT OF NORTH AMERICA RELATIVE TO THE POLE IN THE CARBONIFEROUS PERIOD AND GIVE THE PATTERN OF REVERSALS OF THE EARTH S MAGNETIC FIELD FOR THIS PERIOD FOR COMPARISON WITH OTHER CONTINENTS. SEE THE STABILITY OF THE MAGNETIZATION OF THE HURLEY CREEK FORMATION, JOUR. GEOPHYS. RES., 1967 (IN PRESS).

395. SCHWARZ, E.J., GEOL. SURV. CANADA-
DESIGN AND CONSTRUCTION OF THERMOMAGNETIC BALANCE, 1966-67.
THE OBJECTIVE WAS TO ACHIEVE A SENSITIVE INSTRUMENT THAT PROVIDES AUTOMATIC RECORDING OF THE MAGNETIZATION OF MINERALS AND ROCK SPECIMENS AS A FUNCTION OF APPLIED MAGNETIC FIELD OR OF THE TEMPERATURE.
CLASSIFICATION OF REMANENT MAGNETIZATION IN BAKED EARTHS AND ROCKS, 1966-69.
PROJECT MAY RESULT IN NEW TECHNIQUES OF DIRECT INTEREST TO GEOLOGISTS. SEE JOUR. GEOPHYS. RES., VOL. 71, PP. 5357-5363, 1967.
THERMOMAGNETIC PROPERTIES OF PYRRHOTITE, 1966-67.
THERMOMAGNETIC PROPERITES OF RED AND GREEN SEDIMENTS, NEW BRUNSWICK, 1967-69.
THIS PROJECT WILL BE CARRIED OUT IN COOPERATION WITH MR. H.W. VAN DE POLL, NEW BRUNSWICK DEPARTMENT OF NATURAL RESOURCES.

GEOPHYSICS

396. SCHWARZ, E.J., SYMONS, D.T.A., GEOL. SURV. CANADA-
INTENSITY OF PALAEOMAGNETIC FIELD, 1967-69.
THE DIRECTION OF THE PALAEOMAGNETIC FIELD HAS BEEN DETERMINED FOR ROCKS OF VARIOUS AGES FROM ALL CONTINENTS. WORK ON THE POSSIBLE VARIATION OF THE INTENSITY OF THE PALAEOMAGNETIC FIELD WAS UNDERTAKEN RECENTLY. THE INTENSITY PROJECT IS CONCERNED MAINLY WITH RADIOMETRICALLY DATED PRECAMBRIAN AND PALAEOZOIC ROCKS.

397. SYMONS, D.T.A., GEOL. SURV. CANADA-
PRELIMINARY PALAEOMAGNETIC STUDY OF PRECAMBRIAN ROCKS IN THE COBALT AREA OF ONTARIO, 1967-68.
SAMPLES HAVE BEEN COLLECTED FROM THE HURONIAN COBALT SERIES AND THE NIPISSING DIABASE SILL TO TEST THEIR REMANENCE STABILITY.
PALAEOMAGNETISM OF CENOZOIC LAVA FLOWS ON MOUNT EDZIZA, BRITISH COLUMBIA, 1966-68.
FROM THE PALAEOMAGNETIC STRATIGRAPHY, IT IS HOPED TO DATE AND CORRELATE THESE FLAT-LYING CENOZOIC LAVA FLOWS. PALAEOMAGNETISM OF BASIC DIKES IN THE COAST RANGES OF BRITISH COLUMBIA, 1966-68.
SEVERAL SWARMS OF CRETACEOUS AND TERTIARY BASIC DIKES INTRUDE THE ACIDIC INTRUSIVE COMPLEX OF THE COAST RANGES IN BRITISH COLUMBIA. USING PALAEOMAGNETISM IT IS HOPED TO CLASSIFY AND DATE THESE DIKES SO THAT THEY CAN BE USED AS GEOLOGIC TIME MARKERS.

398. WASHKURAK, S., GEOL. SURV. CANADA-
OVERHAUSER MAGNETOMETER, 1963-.
TO DESIGN, CONSTRUCT AND TEST AN OVERHAUSER CONTINUOUS READING NUCLEAR MAGNETOMETER. SEE A MASER PROTON PRECESSION MAGNETOMETER, GEOL. SURV. CAN., PAPER 66-2, PP. 29-30, 1966.

Radioactivity

399. DARNLEY, A.G., GEOL. SURV. CANADA-
EXPERIMENTAL AIRBORNE GAMMA-RAY SPECTROMETER SURVEYS AT BANCROFT AND ELLIOT LAKE, ONTARIO, 1967.
WORK IS BEING UNDERTAKEN IN CONJUNCTION WITH ATOMIC ENERGY OF CANADA LTD., TO OBTAIN SPECIFICATIONS FOR AN AIRBORNE GAMMA-RAY SPECTROMETER SYSTEM TO BE OPERATED IN A FIXED-WING AIRCRAFT. THIS SYSTEM WILL BE USED TO MAP THE DISTRIBUTION OF POTASSIUM, URANIUM AND THORIUM IN ROCKS AND OVERBURDEN.

400. FLEET, M., CARSON, J., GEOL. SURV. CANADA-
GROUND GAMMA-RAY SPECTROMETER SURVEY NEAR BANCROFT,

ONTARIO, 1967.
TO PROVIDE GROUND DATA FOR USE IN EVALUATING AN EXPERIMENTAL AIRBORNE SURVEY IN THE SAME AREA.

401. KILLEEN, P.G., GEOL. SURV. CANADA-
GROUND GAMMA-RAY SPECTROMETER SURVEY IN ELLIOT LAKE AREA, ONTARIO, 1966-67.
TO PROVIDE GROUND DATA FOR USE IN EVALUATING AN EXPERIMENTAL AIRBORNE SURVEY IN THE SAME AREA.

Seismic

402. BARR, K.G., TYRLIK, W.T., BERRY, M.J., DOMINION OBSERVATORY-
CRUSTAL STUDIES IN YELLOWKNIFE AREA, NORTHWEST TERRITORIES, 1966-68.
AN EXPERIMENT USING 18 SHOT POINTS AND ELEVEN OBSERVING CREWS WAS UNDERTAKEN IN 1966 TO DETERMINE THE SUB-MOHO VELOCITY AND TIME TERMS AT POINTS INSIDE AND OUTSIDE THE SLAVE PROVINCE, AND TO SHOOT A PROFILE THROUGH YELLOWKNIFE AT DISTANCES BRACKETING THE CROSS OVER LISTANCE, ACROSS THE BEAR-SLAVE PROVINCIAL BOUNDARY AND CROSS THE MCDONALD FAULT. PARTICULAR ATTENTION WILL BE PAID TO THE CRUSTAL CALIBRATION OF THE YELLOWKNIFE ARRAY, AND TO AN EVALUATION OF DIGITAL PROCESSING TECHNIQUES. SEE UPPER MANTLE STRUCTURE IN CANADA FROM SEISMIC OBSERVATIONS USING CHEMICAL EXPLOSIONS, CAN. J. EARTH SCI., VOL. 4, PP. 961-976, 1967.
CRUSTAL STUDIES IN CANADIAN ARCTIC, 1962-.
REFRACTION SEISMIC PROFILES IN THE ARCTIC ARCHIPELAGO WITH SPECIAL INTEREST IN ANOMALOUS FEATURES IN THE WESTERN ARCTIC ISLANDS AND THE CONTINENTAL MARGIN. ATTEMPTS ARE BEING MADE TO RELATE THE SEISMIC REFRACTION RESULTS TO OTHER GEOPHYSICAL RESULTS IN THE SAME AREA. DURING 1967 A REVERSED PROFILE WAS RUN ACROSS THE CONTINENTAL SHELF 200 KM. N.W. FROM PRINCE PATRICK ISLAND. SEE DEEP SEISMIC REFRACTION INVESTIGATION IN THE CANADIAN ARCTIC ARCHIPELAGO, GEOPHYSICS, VOL. 30, P. 87, 1965.

403. BELL, C.K., GEOL. SURV. CANADA-
SEISMIC PROFILE ACROSS CHURCHILL-SUPERIOR BOUNDARY, MANITOBA, 1967-68.

404. BIDGOOD, D.E.T., NOVA SCOTIA RESEARCH FOUNDATION-
HAMMER SEISMIC SURVEYS IN GROUNDWATER STUDIES, 1965-.
REFRACTION AND REFLECTION HAMMER SEISMIC METHODS ARE USED TO STUDY DEPTH OF BEDROCK SURFACE AND NATURE OF SUPERFICIAL DEPOSITS. THIS WORK IS CARRIED OUT IN

CONJUNCTION WITH THE GROUNDWATER DIVISION OF THE NOVA SCOTIA DEPARTMENT OF MINES.

405. BONE, M.N., BARR, K.G., BERRY, M.J., DOMINION OBSERVATORY-
CRUSTAL STUDIES IN THE CORDILLERA - A CONTINUING PROJECT.
A PROGRAM OF SEISMIC REFRACTION STUDIES TO OUTLINE THE MAJOR CRUSTAL AND UPPER MANTLE FEATURES OF THE CORDILLERAN REGION. OBSERVATIONS PARALLEL TO THE WEST COAST AND A REVERSED PROFILE FROM MERRIT TO QUESNELL HAVE BEEN PUBLISHED. THE LATEST WORK CONSISTS OF A REVERSAL OF AN ACROSS STRIKE PROFILE. A RE-EVALUATION AND INTERPRETATION OF ALL DATA ACQUIRED SINCE 1964 IS UNDERWAY. SEE SEISMIC REFRACTION SURVEYS IN BRITISH COLUMBIA, 1964-1966- A PRELIMINARY INTERPRETATION, AGU MONOGRAPH, 1967 (IN PRESS).

406. BROWN, J., HALL, D.H., UNIV. OF MANITOBA-
ISOSTATIC STUDIES OF ENGLISH RIVER GNEISSIC BELT FROM THE RESULTS OF DEEP CRUSTAL SEISMIC SOUNDING, 1967-68.

407. BURKE, K.B.S., GEOL. SURV. CANADA (PART TIME), UNIV. OF SASKATCHEWAN-
STUDY OF AMPLITUDE AND FREQUENCY CHARACTERISTICS OF SEISMIC WAVES IN SURFICIAL DEPOSITS OF THE CANADIAN PRAIRIES, 1966-67.
VELOCITY CORRELATIONS WITH LITHOLOGY ARE COMMON BUT THE STUDY OF THE AMPLITUDE AND FREQUENCY CHARACTERISTICS OF SEISMIC WAVES TRANSMITTED IN SURFICIAL DEPOSITS MAY FURTHER IDENTIFY THESE MATERIALS. UPHOLE WAVEFRONT SURVEYS IN SOME AREAS INDICATE WHETHER OR NOT THERE ARE DIFFERENT VELOCITIES ASSOCIATED WITH SURFICIAL MATERIALS AND BEDROCK.

408. BURKE, K.B.S., FINLAYSON, G.B., UNIV. OF SASKATCHEWAN-
SEISMIC INVESTIGATIONS OF SURFICIAL DEPOSITS, 1966-68-M.SC. THESIS (FINLAYSON).
SEE PROBLEMS OF SEISMIC PROSPECTING FOR GROUNDWATER DEPOSITS - CANADIAN CENTENNIAL CONFERENCE ON MINING AND GROUNDWATER GEOPHYSICS, NIAGARA FALLS, 1967.

409. BURKE, K.B.S., GANTELA, C., UNIV. OF SASKATCHEWAN-
INTERPRETATION OF HUDSON BAY CRUSTAL STRUCTURE,1966-68.
A SIMPLE PLUS-MINUS INTERPRETATION OF THE SEISMIC REFRACTION FIRST ARRIVALS HAS BEEN MADE FOR THE WEST-EAST PROFILE. THIS SHOWS A THINNING OF THE CRUST FROM 35 KM IN THE WEST, TO 32 KM IN THE CENTRE, TO 35

KM IN THE EAST, THE INTERPRETATION BEING RESTRICTED TO THE CENTRAL 300 KM OF THE WEST-EAST PROFILE. AN ALTERNATIVE INTERPRETATION OF THE DATA COULD BE A HIGHER VELOCITY CRUST TOWARDS THE CENTRE. A MORE COMPREHENSIVE INTERPRETATION INVOLVING THE SECONDARY ARRIVALS, IS NOW IN PROGRESS.

410. GURBUZ, M.B., UNIV. OF MANITOBA-
VEOLOCITY VARIATIONS IN CRUST AND UPPER MANTLE AND BODYWAVE ATTENUATION IN CRUST FOR UNIVERSITY OF MANITOBA CRUSTAL SOUNDINGS AND DATA FROM PROJECT EARLY RISE, 1966-69- PH.D. THESIS.

411. GURBUZ, B., HALL, D.H., UNIV OF MANITOBA-
LATER ARRIVALS ON RECORDS FROM PROJECT **EARLY RISE**, 1966-69.
AMPLITUDE AND SPECTRAL STUDIES OF ARRIVALS ON PROJECT **EARLY RISE** RECORDS ARE BEING STUDIED IN ORDER TO EXAMINE MORE CLOSELY THE NATURE OF THE ARRIVALS. ARRIVALS FROM THE CONRAD DISCONTINUITY AND CONVERTED WAVES ARE OF INTEREST IN THIS PROJECT.

412. HAJNAL, Z., UNIV. OF MANITOBA-
CRUSTAL SEISMOLOGY, 1966-70- PH.D. THESIS.

413. HAJNAL, Z., HALL, D.H., UNIV. OF MANITOBA-
DETAILED STUDY OF CONRAD DISCONTINUITY AND-DEEP FAULTS IN THE PROJECT PIONEER AREA, EASTERN MANITOBA, 1967-69.
A CONTINUOUS SEISMIC REFRACTION AND WIDE-ANGLE REFLECTION SURVEY IS BEING CONDUCTED OVER A 60-MILE LINE IN AN ATTEMPT TO OBTAIN CONTINUOUS INFORMATION ON SEISMIC DISCONTINUITIES IN THE CRUST IN THE AREA OF **PROJECT PIONEER**. DATA ENHANCEMENT USING DIGITAL TECHNIQUES IS BEING EMPLOYED.

414. HALL, D.H., HAJNAL, Z., UNIV. OF MANITOBA-
DEEP SEISMIC SOUNDING IN MANITOBA - A CONTINUING PROJECT.
A CONTOUR MAP OF THE CONRAD AND MOHOROVICIC DISCONTINUITY IS BEING EXTENDED FROM ITS PRESENT COVERAGE (RED LAKE, ONTARIO-KENORA, ONTARIO-LAKE WINNIPEG, MANITOBA) WESTWARD ACROSS LAKE MANITOBA. RESULTS ARE BEING RELATED TO PRECAMBRIAN GEOLOGY. IN CONJUNCTION WITH PROJECTS BY H.D.B. WILSON AND W.C. BRISBIN, THE RESULTS WILL BE USED TO INFER REGIONAL AND CRUSTAL GEOLOGY IN THE COVERED AREAS.

GEOPHYSICS

415. HASEGAWA, H.S., DOMINION OBSERVATORY-
CRUSTAL STUDIES (DECONVOLUTION) IN THE CANADIAN SHIELD NEAR YELLOWKNIFE, NORTHWEST TERRITORIES, 1966-68.
SLOW SPEED FREQUENCY-MODULATED TAPE SYSTEMS ARE USED TO UNDERSTAND HOW LOCAL CRUSTAL STRUCTURE AFFECTS THE CHARACTER OF THE SEISMIC SIGNAL. RESEARCH IN BOTH THE TIME AND FREQUENCY DOMAINS IS NECESSARY ON THE DIGITAL TAPES GENERATED.

416. HOBSON, G.D., GEOL. SURV. CANADA-
SEISMIC METHODS IN THE CANADIAN SHIELD, 1963-.
SEISMIC REFRACTION AND REFLECTION METHODS AS APPLIED TO PETROLEUM EXPLORATION CAN BE ADAPTED TO ASSIST IN THE EXPLORATION FOR MINERALS. PROTEROZOIC BASINS WITHIN THE SHIELD CAN BE DELINEATED AND INTERFACES HAVE BEEN DETECTED AT DEPTH. IT MAY BE POSSIBLE TO DEFINE STRUCTURES WITHIN THE PRECAMBRIAN BY TRACING FOLDING AND FAULTING ETC. IT MAY ALSO BE POSSIBLE TO DELINEATE OREBODIES THROUGH A STUDY OF VELOCITIES AND FREQUENCIES. SEE DOWN-HOLE GEOPHYSICAL STUDIES ON THE MUSKOX INTRUSION, COPPERMINE RIVER AREA, DISTRICT OF MACKENZIE, GEOL. SURV. CAN., PAPER 66-44, 1967.
SEISMIC METHODS, GULF OF ST. LAWRENCE, 1964-69.
TWO-SHIP MARINE SEISMIC REFRACTION EXPERIMENTS TO INVESTIGATE THE THICKNESS, NATURE AND ATTITUDE OF THE SEDIMENTARY ROCKS UNDERLYING THE GULF OF ST. LAWRENCE TO THE DEPTH OF THE CRYSTALLINE BASEMENT. SEE MARINE SEISMIC REFRACTION INVESTIGATION IN THE VICINITY OF THE ORPHEUS GRAVITY ANOMALY, GEOL. SURV. CAN., PAPER 66-38, 1966
SHALLOW REFRACTION AND REFLECTION SEISMOGRAPH TECHNIQUES, 1962-.
SHALLOW SEISMIC METHODS, BOTH REFRACTION AND REFLECTION TECHNIQUES, CAN BE APPLIED TO THE DEFINITION OF PROBLEMS IN MINING, ENGINEERING AND GROUNDWATER STUDIES. MODIFICATIONS TO INSTRUMENTS TO ADAPT THEM TO SHALLOW METHODS MUST BE DEVELOPED. NEW FIELD TECHNIQUES MUST ALSO BE DEVELOPED TO ADAPT THE METHOD TO THE SOLUTION OF SHALLOW PROBLEMS. SEE THICKNESS OF DRIFT, LEBEL, GAUTHIER, BOSTON AND MCELROY TOWNSHIPS, ONTARIO, GEOL. SURV. CAN., PAPER 11-67, 1967.

417. LEBLANC, G., LAVAL UNIV.-
MICRO-SEISMICITY OF THE QUEBEC-SAGUENAY REGION, 1967-69.
CRUSTAL DETERMINATION BASED ON SPECTRAL ANALYSIS OF SIESMIC SIGNALS AND CRUSTAL TRANSFER FUNCTIONS, 1965-69.
SEISMIC SIGNALS ARE MODIFIED BY THE CRUST BEFORE BEING RECORDED. BY DERIVING CRUSTAL FILTERS FOR PROBABLE MODELS, AND USING THEM AS INVERSE FILTERS ON

THE SPECTRUM OF RECORDED SIGNAL, IT BECOMES POSSIBLE, WHEN AN OPTIMUM FILTER IS FOUND, TO SELECT A FREFERABLE CRUSTAL MODEL. THE PROCESS ALSO USES THE FACT THAT THE SOURCE SPECTRUM CAN BE APPROXIMATED FROM AVERAGING MANY SPECTRA FROM CAREFULLY GROUPED STATIONS. SEE TRUNCATED CRUSTAL TRANSFER FUNCTIONS AND FINE CRUSTAL DETERMINATION BULL. SEISMOL. SOC. AMER., VOL. 57, PP. 719-733, 1967.

418. MANCHEE, E.B., WEICHERT, D.H., ANGLIN, F., BASHAM, P.W., WHITHAM, K., DOMINION OBSERVATORY-
ARRAY SEISMOLOGY, 1962-.
THIS PROJECT EMBRACES RESEARCH INTO DETECTION AND IDENTIFICATION METHODS FOR CHEMICAL EXPLOSIONS AS WELL AS GENERAL RESEARCH INTO THE CHARACTERISTICS OF EARTHQUAKES AS THEY MAY BE DELINEATED BY A MEDIUM APERTURE ARRAY. THE OUTPUTS OF U.K.A.E.A.-TYPE ARRAYS ARE ANALYZED BY ANALOGUE-DIGITAL MEANS IN OTTAWA. SEE EPICENTRAL UNCERTAINTIES AND DETECTION PROBABILITIES FROM THE YELLOWKNIFE SEISMIC ARRAY DATA, BULL, SEISM. SOC. AM., 1967 (IN PRESS).

419. MILNE, W.G., SMITH, W.E.T., WHITHAM, K., DOMINION OBSERVATORY-
SEISMIC REGIONALIZATION OF CANADA - A CONTINUING PROJECT.
SEISMICITY OF CANADA INCLUDING EPICENTRAL AND MAGNITUDE DETERMINATIONS, STRAIN RELEASE MAPS, EARTHQUAKE RECURRENCE RELATIONS AND EXTREME VALUE THEOREM ESTIMATES OF GROUND ACCELERATIONS AND INTENSITIES. IN ADDITION STRONG MOTION STUDIES ARE BEING CONDUCTED ON THE WEST COAST, AND MICROEARTHQUAKE STUDIES PURSUED IN THE ARCTIC, BRITISH COLUMBIA, AND ELSEWHERE. SEE EARTHQUAKE EPICENTRES AND STRAIN RELEASE IN CANADA, CAN. J. EARTH SCI., VOL. 4, PP. 797-814, 1967.

420. OVERTON, A., GEOL. SURV. CANADA-
SEISMIC METHODS, ELLIOT LAKE, ONTARIO, 1966-67.
PURPOSE OF SURVEY IS TO ASSESS THE FEASIBILITY OF USING SEISMIC TECHNIQUES TO MEASURE STRATA THICKNESSES AND ATTITUDES OVERLYING THE URANIUM PAY ZONE. BOTH REFRACTION AND REFLECTION (COMMON DEPTH POINT) TECHNIQUES HAVE BEEN APPLIED.

421. STEVENS, A.E., HODGSON, J.H., DOMINION OBSERVATORY-
EARTHQUAKE MECHANISMS FROM P AND S WAVES - CONTINUING PROJECT.
P-NODAL SOLUTIONS FOR EARTHQUAKES OF 1963 HAVE RECENTLY BEEN DETERMINED. A REVIEW OF THE SOLUTIONS

CONTAINED IN THE CATALOGUE OF SOLUTIONS FROM EARTHQUAKES BETWEEN 1922 AND 1962 IS BEING PREPARED FOR PUBLICATION. SEE COMPUTER RE-EVALUATION OF EARTHQUAKE MECHANISM SOLUTIONS 1922-1962, PUB. DOM. OBS., VOL. 33, NO. 1, 1967.

422. TAKE, W.F., NOVA SCOTIA RESEARCH FOUNDATION-
GEOLOGICAL INTERPRETATION OF HAMMER SEISMIC BEDROCK DATA, 1967-.
THE DEVELOPMENT OF A PRACTICAL METHOD WHEREBY BEDROCK FORMATIONS AND LITHOLOGIES MAY BE IDENTIFIED BY A CONSIDERATION OF THE POSSIBLE FORMATIONS INVOLVED, THEIR LITHOLOGICAL ASSOCIATIONS, SEISMIC VELOCITIES AND EXPRESSIVE TOPOGRAPHY. THIS TECHNIQUE MAY PERMIT SOME LOW-COST GEOLOGICAL STUDIES AND MINERAL EXPLORATION IN DRIFT COVERED AREAS.

423. WICKENS, A.J., DOMINION OBSERVATORY-
SURFACE WAVE STUDIES, 1962-.
A STUDY OF MEAN CRUSTAL AND UPPER MANTLE STRUCTURE FOR ALL MAJOR GEOLOGICAL UNITS IN CANADA USING THE SEISMIC NETWORK OF LONG PERIOD INSTRUMENTS. SEE THEORETICAL DISPERSION TABLES FOR LOVE WAVES PROPAGATING IN A WEDGE AND IN A SINGLE NON-HOMOGENEOUS LAYER WITH A LINEAR VELOCITY GRADIENT, PUB. DOM. OBS., VOL. 35, NO. 1, 1966.

General Problems

424. BIDGOOD, D.E.T., BLANCHARD, F.E., TAKE, W.F., NOVA SCOTIA RESEARCH FOUNDATION-
GEOPHYSICAL INVESTIGATIONS OF EVAPORITES IN NOVA SCOTIA, 1956-.
GRAVITY, MAGNETIC, SEISMIC, BORE-HOLE GEOPHYSICAL AND GEOLOGICAL LOGS, PROVIDE DATA ON OCCURRENCE AND MINERAL PROSPECTS OF SALT INTRUSIONS IN NOVA SCOTIA. SEE GEOPHYSICAL INVESTIGATIONS OF EVAPORITES IN NOVA SCOTIA- PROCEEDINGS CANADIAN CENTENNIAL CONFERENCE ON MINING AND GROUNDWATER GEOPHYSICS, NIAGARA FALLS, 1967 (IN PRESS).

425. BURKE, K.B.S., GENDZWILL, D.J., UNIV. OF SASKATCHEWAN-
APPLICATION OF GEOPHYSICAL DATA TO SOLUTION OF GEOLOGICAL PROBLEMS, 1963-68- PH.D. THESIS (GENDZWILL).

426. BURKE, K.B.S., WYDER, J.E., UNIV. OF SASKATCHEWAN-
AN EVALUATION OF GEOPHYSICAL METHODS FOR LOCATION OF SHALLOW AQUIFERS, 1964-68- PH.D. THESIS (WYDER).

GEOPHYSICS

427. DENCE, M.R., ROBERTSON, P.B., DOMINION OBSERVATORY-
SHOCK METAMORPHISM IN CANADA CRATERS, 1962-.
DEFORMATION ATTRIBUTED TO HIGH-PRESSURE SHOCK WAVES HAS BEEN IDENTIFIED AT FIFTEEN CANADIAN CRATERS. THE SIMILARITY BETWEEN NATURAL MASKELYNITE, AN ISOTROPIC FORM OF PLAGIOCLASE, AND ARTIFICALLY SHOCKED MASKELYNITE HAS BEEN DEMONSTRATED BY OPTICAL, X-RAY AND INFRARED SPECTROSCOPIC METHODS. DIAMOND DRILLING AT SEVERAL CRATERS HAS SHOWN A SYSTEMATIC DECREASE IN THIS DEFORMATION WITH DEPTH, CORROBORATING AN ORIGIN BY HYPERVELOCITY METEORITE IMPACT. SEE NASA CONFERENCE ON SHOCK METAMORPHISM OF NATURAL MATERIALS, 1967 (IN PRESS).

428. DENCE, M.R., ROBERTSON, P.B., INNES, M.J.S., HALLIDAY, K., GRIFFIN, A.A., DOMINION OBSERVATORY-
GEOLOGICAL AND GEOPHYSICAL STUDIES OF CANADIAN CRATERS, 1953-.
THE CONTINUING SEARCH FOR POSSIBLE ANCIENT METEORITE CRATERS IN CANADA HAS LED TO THE INVESTIGATION OF 6 CRATERS BY DIAMOND DRILLING, 12 BY GRAVITY SURVEYS, 8 BY MAGNETIC AND 6 BY SEISMIC METHODS. RECENT WORK HAS BEEN LARGELY CONCERNED WITH THE BRENT, DEEP BAY, WEST HAWK LAKE, LAC COUTURE, PILOT LAKE, NICHOLSON LAKE AND LA MALBAIE CRATERS WITH FURTHER ANALYSIS OF DATA FROM THE NEW QUEBEC, CLEARWATER LAKE, CARSWELL AND MANICOUAGAN CRATERS ALSO IN PROGRESS. SEE CONTR. DOM. OBS., VOL. 31, NO. 10 AND NASA SYMPOSIUM ON SHOCK METAMORPHISM OF NATURAL MATERIALS, 1967 (IN PRESS).

429. FITZPATRICK, M.M., QUEEN*S UNIV.-
SEISMIC AND RESISTIVITY METHODS APPLIED TO THE DETERMINATION OF THE DEPTH TO THE PALAEOZOIC-PRECAMBRIAN INTERFACE IN THE KINGSTON AREA, ONTARIO, 1965-69.
SINCE THE PRECAMBRIAN-PALAEOZOIC INTERFACE IS THE MAIN AQUIFER IN THE AREA, THIS IS ESSENTIALLY A WATER SUPPLY PROBLEM.

430. GENDZWILL, D.J., SASKATCHEWAN RESEARCH COUNCIL-
GEOPHYSICAL MEASUREMENTS IN SASKATCHEWAN POTASH MINES, 1964-68.
GEOPHYSICAL METHODS ARE BEING USED TO MONITOR SALT FORMATION THICKNESS IN SASKATCHEWAN POTASH MINES.

431. GENDZWILL, D.J., DYCK, J.H., PEPPER, T.P., SASKATCHEWAN RESEARCH COUNCIL-
GEOPHYSICAL PROSPECTING FOR GROUNDWATER IN SOUTHERN

SASKATCHEWAN, 1963-70.
EVALUATION AND DEVELOPMENT OF GEOPHYSICAL METHODS, PARTICULARLY ELECTRICAL, GRAVITY, SEISMIC, AND WELL LOGGING TECHNIQUES IN THEIR APPLICATION TO GROUNDWATER PROBLEMS. SEE GEOPHYSICAL METHODS FOR HYDROLOGIC SEARCH, 1966, ENCYCLOPEDIA OF EARTH SCIENCES, REINHOLD PUBLICATIONS (IN PRESS).

432. JONES, G.H.S., DIEHL, C.H.H., AND SUPPORTING STAFF, DEFENCE RESEARCH BOARD, DEPT. NATIONAL DEFENCE-
MORPHOLOGY OF CRATERS AND MECHANICS OF CRATERING, 1958-.
THE STUDY OF CRATERS AT DEFENCE RESEARCH ESTABLISHMENT, SUFFIELD STARTED AS A PRAGMATIC STUDY AIMED AT ELUCIDATING CRATER SCALING LAWS IN ORDER TO PROVIDE PLANNING DATA FOR LARGE SCALE TRIALS. WITH THE DEVELOPMENT OF A VARIETY OF NEW TECHNIQUES FOR STUDYING THE SUBSURFACE DEFORMATIONS ASSOCIATED WITH CRATERS, THIS STUDY EXPANDED TO INCLUDE MORE BASIC INVESTIGATIONS OF CRATER MORPHOLOGY.
A GREAT INCREASE IN INTEREST AND IMPORTANCE AROSE WHEN IT WAS FOUND THAT THE CRATERS PRODUCED WITH CHARGES OF MORE THAN A FEW TONS OF TNT DEVELOPED CENTRAL UPLIFT STRUCTURES. THIS BECAME MOST PRONOUNCED WITH THE 500 TON (SNOWBALL) CRATER WHICH DUPLICATED MANY FEATURES COMMON TO ASTROBLEMES BUT NOT PREVIOUSLY FOUND IN ASSOCIATION WITH EXPERIMENTALLY PRODUCED CRATERS. SINCE THE FORMATION OF THE SNOWBALL CRATER IN 1964 MUCH EFFORT HAS BEEN DEVOTED TO A DETAILED STUDY OF ITS MORPHOLOGY, AND SUBSEQUENTLY SEVERAL ADDITIONAL CRATERS HAVE BEEN PRODUCED WITH CENTRAL UPLIFTS, SOME OF WHICH CONTAIN ADDITIONAL FEATURES NOT NOTED ON SNOWBALL. THIS WORK IS CONTINUING WITH THE SUPPORT OF U.S. AGENCIES (AND FUNDING) AND IN ASSOCIATION WITH THE DOMINION OBSERVATORY AND THE USGS BRANCH OF ASTROGEOLOGIC STUDIES. SEE THE SNOWBALL CRATER - GENERAL INFORMATION AND BACKGROUND, SUFFIELD TECHNICAL NOTE NO. 187.

433. KORNIK, L.J., GEOL. SURV. CANADA-
REGIONAL STRUCTURAL STUDY OF A PORTION OF THE CHURCHILL PROVINCE, 1965-68.-PH.D. THESIS UNIV. OF MANITOBA
INVOLVES THE EXAMINATION OF MAGNETIC, SEISMIC AND GRAVITY DATA AND THE DEGREE OF METAMORPHISM OVER A BROAD AREA TO DETERMINE THE STRUCTURAL SETTING. GEOLOGIC-AEROMAGNETIC CORRELATION WAS CHECKED BY MEASURING IN SITU MAGNETIC SUSCEPTIBILITIES AND REMANENT MAGNETISM.

GEOPHYSICS

434. LENNOX, D.H., RESEARCH COUNCIL OF ALBERTA-
GEOPHYSICAL METHODS IN GROUNDWATER EXPLORATION, 1964-70.
EVALUATION OF THE UTILITY OF SEISMIC, RESISTIVITY, GRAVITY AND OTHER GEOPHYSICAL METHODS IN GROUNDWATER EXPLORATION. SEE A GENERALIZED METHOD OF NUMERICAL RESISTIVITY ANALYSIS, GEOPHYSICS, VOL. 31, NO. 3, PP. 625-626.

435. LENNOX, D.H., CARLSON, V.A., RESEARCH COUNCIL OF ALBERTA-
GEOPHYSICAL EXPLORATION FOR BURIED VALLEYS IN AN AREA NORTH OF TWO HILLS, ALBERTA, 1961-67.
GEOPHYSICS IN GROUNDWATER EXPLORATION, 1957-67.
SEE GEOMETRIC COEFFICIENTS FOR USE IN NUMERICAL RESISTIVITY ANALYSIS, RES. COUN. OF ALBERTA, BULL. 19, 1966.

436. MCGRATH, P., HOOD, P.J., GEOL. SURV. CANADA-
GEOPHYSICAL STUDY OF THE APPALACHIAN REGION, 1967-.
THIS IS A STUDY OF ALL AVAILABLE GEOPHYSICAL DATA IN ORDER TO THROW LIGHT ON THE GEOLOGY OF THE APPALACHIAN REGION WITH PARTICULAR EMPHASIS ON AREAS WHERE THE SEDIMENTS MIGHT BE OIL-BEARING. SEE GEOPHYSICAL SURVEYS OF THE CONTINENTAL SHELF SOUTH OF NOVA SCOTIA, MARITIME SEDIMENTS, VOL. 3, NO. 1, PP. 6-11.

437. MORRISON, B., SASKATCHEWAN RESEARCH COUNCIL-
NATURAL POTENTIAL STUDIES, 1967-69.
INVESTIGATION OF SOURCES OF ATMOSPHERIC, TREE, AND SNOW POTENTIALS AND THEIR RELATION TO MINERAL DEPOSITS.

438. PEPPER, T.P., SASKATCHEWAN RESEARCH COUNCIL-
APPLICATION OF GEOPHYSICAL METHODS AS AIDS IN PROSPECTING FOR AQUIFERS, 1964-.
STUDY OF GEOPHYSICAL METHODS, WITH EMPHASIS ON ELECTRICAL TECHNIQUES, TO AID IN DELIMITING AQUIFERS IN SOUTHERN SASKATCHEWAN.

439. SLANEY, V.R., GEOL. SURV. CANADA-
AIRBORNE INFRARED SURVEYS AS A GEOLOGICAL TOOL, AND MULTIBAND AERIAL PHOTOGRAPHY, 1967-.

440. TUREK, A., HAUGH, I., MCRITCHIE, D., WEBER, W., SCOATES, R.F.J., PHILLIPS, K.A., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES- ANDERSON, D.T., BRISBIN, W.C., CHURCH, N.B., HALL, D.H., TURNOCK, A.C.,

GEOPHYSICS

WILSON, H.D.B., AND GRADUATE STUDENTS, UNIV. OF MANITOBA-
PROJECT PIONEER, 1965-71.

A COOPERATIVE COMPREHENSIVE FIELD AND LABORATORY STUDY OF THE RICE LAKE-BERESFORD LAKE AREA OF SOUTH-EASTERN MANITOBA. INCLUDES DETAILED MAPPING, PHOTO-GEOLOGIC INTERPRETATION, AEROMAGNETIC INTERPRETATION, DEEP CRUSTAL SEISMIC SURVEY, GRAVITY, ROCK MAGNETISM, REGIONAL AND LOCAL DETAILED STRUCTURAL ANALYSES, GAMMA-RAY SPECTROMETRY, PETROLOGY, MINERALOGY, CHEMISTRY, TRACE ELEMENTS, GEOCHRONOLOGY, ECONOMIC GEOLOGY, AND STUDIES OF VOLCANICITY, SEDIMENTATION, AND META-MORPHISM.

MINERAL DEPOSITS

Base Metals

441. ALLEN, D.G., CLARK, A.H., QUEEN*S UNIV.-
MINERALOGY AND GEOCHEMISTRY OF THE GALORE CREEK COPPER DEPOSIT, BRITISH COLUMBIA, 1967-70, PH.D. THESIS (ALLEN).
A STUDY OF THE SULPHIDE AND ALTERATION MINERALS OF A PORPHYRY COPPER DEPOSIT, INCLUDING CONSIDERATION OF SULPHIDE-OXIDE-SILICATE PHASE RELATIONS IN THE **SYSTEM** BIOTITE-K-FELDSPAR-PYRITE-MAGNETITE.

442. BEALES, F., OLDERSHAW, A.E., UNIV. OF TORONTO-
STRATIGRAPHY AND PALEOECOLOGY OF PALEOZOIC AND RECENT LIMESTONES - A CONTINUING PROJECT.
A STUDY OF THE CONDITIONS OF DEPOSITION OF ANCIENT LIMESTONES AND THEIR SUBSEQUENT DIAGENESIS INCLUDING PARTICULAR INTEREST IN THE ORIGIN AND SUBSEQUENT DEVELOPMENT OF POROSITY IN LIMESTONES. THE SEDIMENTS OF THE BRENT METEORITE CRATER ARE BEING STUDIED AS AN EXAMPLE OF ACCUMULATION, AND DIAGENESIS, IN A CONTROLLED SETTING. SEE AN ASPECT OF SEDIMENTARY BASIN EVOLUTION - THE CONCENTRATION OF MISSISSIPPI VALLEY TYPE ORES DURING THE LATE STAGES OF DIAGENESIS, BULL. CAN. PETROL., VOL. 16, 1967.

443. BELAND, J., GENTILE, F., UNIV. DE MONTREAL-
STRUCTURE ET STRATIGRAPHIE DU DOME LEMIEUX, GASPESIE, QUEBEC, 1965-68, THESE DE MAITRISSE (GENTILE).
RELATIONS D UNE MINERALISATION DE CUIVRE, PLOMB ET ZINC A UNE SERIE DE BRECHES TECTONIQUES FORMEES EN BORDURE ET A L INTERIEUR DE DOME. ORIGINE ET MODE DE FRACTURATION DU DOME.

444. BERTRAND, C., HAFEZ, A., UNIV. OF WESTERN ONTARIO-
A STUDY OF THE PETROFABRIC OF DEFORMED ROCKS AND OF THE CRYSTAL STRUCTURES OF DEFORMED MINERALS, 1966-68, PH.D. THESES.
CLAUDE BERTRAND IS WORKING ON A DEFORMED MASSIVE SULPHIDE OREBODY AT NORMETAL, QUEBEC. THE DEFORMATIONAL FEATURES OF THE SULPHIDES ARE BEING STUDIED IN RELATIONSHIP BOTH TO THE DEFORMATION OF THE SURROUNDING SILICATE ROCKS AND TO THE CHANGES IN METAMORPHIC GRADE. ALEYA HAFEZ IS WORKING ON A DEFORMED CONGLOMERATE FROM FUNZIE, SHETLAND ISLANDS, RELATING THE FAILURE OF THE ROCKS AND MINERALS TO THE STRAIN AS INDICATED BY THE DEFORMED PEBBLES OF THE CONGLOMERATE. SEE ON THE RELATIONSHIP OF PERICLINE AND ALBITE TWINNING TO THE COMPOSITION AND STRUCTURAL STATE OF PLAGIOCLASE FELDSPARS, SCHWEIZERISCHE MINERALOGISCHE UND PETROGRAPHISCHE MITTEILUNGEN, VOL. 47, PP. 257-268, 1967.

MINERAL DEPOSITS

445. BISHOP, D., NOVA SCOTIA DEPT. OF MINES-
DETERMINATION OF SILVER CONTENT OF MANGANESE ORES AS A GUIDE TO BASE METAL DEPOSITS, 1967-68.

446. BLAIS, R.A., DAVID, M., ECOLE POLYTECHNIQUE-
GEOSTATISTICS OF A TYPICAL PB-ZN DEPOSIT AT PINE POINT, NORTHWEST TERRITORIES, 1967-68.
STUDY OF THE SPATIAL CORRELATIONS BETWEEN PB-ZN-FE ASSAY VALUES OF ABOUT 10,000 DRILL HOLE SAMPLES AVAILABLE FOR THE FIRST TWO LIFTS IN THIS OPEN-PIT, STUDY OF THE CORRELATIONS BETWEEN VARIOGRAM FUNCTIONS AND POLYNOMIAL FUNCTIONS OF TREND SURFACE ANALYSIS. SEE APPLICATION OF GEOSTATISTICS IN ORE RESERVE ESTIMATION AND GRADE CONTROL, C.I.M. L ESTEREL CONFERENCE, 1967.

447. BLAIS, R.A., DE ROSEN, A. (MISS), ECOLE POLYTECHNIQUE-
VOLCANOLOGY AND ASSOCIATED SULPHIDE DEPOSITS OF THE NORANDA AREA, NORTHWESTERN QUEBEC, 1966-70.
LONG-TERM PROJECT INVOLVING DETAILED PETROGRAPHIC AND GEOCHEMICAL INVESTIGATIONS OF VOLCANIC HORIZONS, STUDY OF METAMORPHIC EFFECTS AROUND INTRUSIVES AND IN DALMATIANITE PIPES, AND STRUCTURAL STRATIGRAPHIC STUDIES. SEE LA TRANSFORMATION DE L HEDENBERGITE MANGANESIFERE EN ILVAITE DANS LES SULFURES DE CUIVRE ET DE ZINC DE LA REGION DE NORANDA, BULL. SOC. FR. MINER. CRIST, VOL. 100, 1966.

448. BLAIS, R.A., GENTILE, F., ECOLE POLYTECHNIQUE-
PETROLOGY AND METALLOGENIC ANALYSIS OF THE DISRAELI VOLCANIC BELT, EASTERN TOWNSHIPS, 1967-69, PH.D. THESIS (GENTILE).
INCLUDES A DETAILED GEOLOGICAL STUDY OF THIS LITTLE KNOWN BELT OF VOLCANICS AND OF ITS COPPER MINERALIZATIONS, AS WELL AS A DETAILED STUDY OF THE GEOLOGY AND GEOSTATISTICS OF THE CUPRA COPPERMINE AND A GEOLOGICAL RE-EVALUATION OF THE SOLBEC MINES.

449. BLAIS, R.A., GRENIER, J., ECOLE POLYTECHNIQUE-
GEOLOGY OF MINE DE POIRIER, JOUTEL, NORTHWESTERN QUEBEC, 1965-68, M.SC. THESIS (GRENIER).
DETAILED GEOLOGICAL STUDY OF THE OREBODIES AND WALL-ROCKS FOR THREE MAIN LEVELS OF THE MINE, DETAILED INVESTIGATION OF THE ORIGINAL TEXTURE OF THE HIGHLY CHLORITIZED ORE-BEARING VOLCANIC HORIZON.

450. BLECHA, M., MCGILL UNIV.-
GEOLOGY OF THE TRIBAG COPPER DEPOSIT, ONTARIO, 1964-68,

MINERAL DEPOSITS

PH.D. THESIS.

451. BROWN, A., AMBROSE, J.W., QUEEN S UNIV.-
GEOLOGY OF THE OPEMISKA MINE, QUEBEC, 1961-68, PH.D. THESIS (BROWN).
AN INTENSIVE AND DETAILED INVESTIGATION OF THE STRUCTURAL ELEMENTS ASSOCIATED WITH THE OPEMISKA ORE-BODY.

452. CARR, J.M., ELLIOTT, T.M., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
BRENDA LAKE AREA NEAR PERCHLAND, BRITISH COLUMBIA, 1966-67.
GEOLOGICAL MAPPING OF A PART OF THE OKANAGAN BATHOLITH CONTAINING THE BRENDA COPPER-MOLYBDENUM DEPOSIT. SEE B.C. MINISTER OF MINES ANNUAL REPT. 1966.

453. CARTER, N.C., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
INVESTIGATION OF PORPHYRY TYPE COPPER DEPOSITS, BABINE LAKE AREA AND OF PORPHYRY TYPE MOLYBDENITE DEPOSITS, ALICE ARM AREA, BRITISH COLUMBIA, 1965-. SEE B.C. MINISTER OF MINES ANNUAL REPT. 1966, PP. 44-46, 48, AND 92-102.
POTASSIUM-ARGON AGE DETERMINATIONS OF PORPHYRY-TYPE COPPER AND MOLYBDENITE OCCURRENCES, NORTH-CENTRAL BRITISH COLUMBIA, 1967-, PH.D. THESIS, UNIV. OF BRITISH COLUMBIA.

454. CHAMBERLAIN, J.A., GEOL. SURV. CANADA-
GEOLOGY OF CANADIAN NICKEL DEPOSITS, 1963-68.
AS PART OF THE STUDY, DATA PROCESSING FORMS ARE BEING USED TO RECORD AND, IT IS HOPED, CORRELATE INFORMATION. THE RESULTS OF THE OVERALL STUDY TOGETHER WITH A MAP SHOWING DISTRIBUTION AND GEOLOGICAL AFFILIATION OF NICKEL IN CANADA WILL BE PUBLISHED AS AN ECONOMIC GEOLOGY SERIES BY THE GEOLOGICAL SURVEY OF CANADA. SEE NICKEL DISTRIBUTION IN SERPENTINITES FROM PUDDY LAKE, ONTARIO, GEOL. ASSOC. CAN., VOL. 18, 1967.

455. CLARK, A.H., QUEEN*S UNIV.-
PYRRHOTITE RELATIONSHIPS IN SELECTED ORE DEPOSITS AND ROCKS, 1963-.
ALTHOUGH IT IS CLEAR THAT STRAIGHTFORWARD APPLICATION OF THE **PYRRHOTITE AND PYRITE GEOTHERMOMETER** IS RARELY, IF EVER, POSSIBLE, IT IS HOPED THAT DETAILED STUDY OF THE COMPOSITIONAL AND TEXTURAL RELATIONSHIPS OF THIS MINERAL IN DEPOSITS OF DIFFERING ORIGIN AND

POST-MINERALIZATION HISTORY (E.G. THE NIGADOO RIVER DEPOSIT, N.B., AND THE VIHANTI DEPOSIT, FINLAND) WILL YIELD EVIDENCE OF THE MODE OF DEVELOPMENT OF THE ORES.

MINERALOGY AND GEOCHEMISTRY OF THE YIOJARVI COPPER-TUNGSTEN DEPOSIT, SOUTHWEST FINLAND, 1960-68.

WORK IS CONTINUING ON SEVERAL ASPECTS OF THE MINERALOGY OF THIS UNMETAMORPHOSED PRECAMBRIAN DEPOSIT, IN AN ATTEMPT TO BUILD UP A COMPREHENSIVE PICTURE OF ITS DEPOSITIONAL HISTORY. THE VARIED MINERAL ASSEMBLAGES OF THE DEPOSIT MAKE IT UNUSUALLY SUITABLE FOR RIGOROUS ASSESSMENT OF A WIDE RANGE OF SULPHIDE, OXIDE, AND SILICATE **GEOTHERMOMETERS**. SEE THE MINERALOGY AND GEOCHEMISTRY OF THE YIOJARVI COPPER-TUNGSTEN DEPOSIT, SOUTHWEST FINLAND, MACKINAWITE-PYRRHOTITE-TROILITE ASSEMBLAGES, COMPTES RENDUS SOC. GEOL. FINLANDE, VOL. 38, PP. 331-342, 1966.

456. CLARK, A.H., QUEEN*S UNIV., ZENTILLI, M., INSTITUTO DE INVESTIGACIONES GEOLOGICAS, CHILE-

THE GENESIS OF DISSEMINATED, STRATA-BOUND COPPER DEPOSITS, NORTHERN CHILE, 1967-70.

SYSTEMATIC STUDIES OF THE VOLCANIC ENVIRONMENT, GEOCHEMISTRY, AND MINERALOGY OF THESE EXTENSIVE, LOW-GRADE DEPOSITS HAS BEEN UNDERTAKEN IN ORDER TO ESTABLISH THEIR SPATIAL AND GENETIC RELATIONSHIPS WITH THE EXTRUSIVE HOST ROCKS.

457. CLARK, L.A., MCGILL UNIV.-

GEOLOGY AND GENESIS OF STRATIFORM BASE METAL SULFIDE DEPOSITS OF VOLCANIC AFFINITY INCLUDING KUROKO DEPOSITS OF JAPAN, CUPRIFEROUS PYRITE DEPOSITS OF CYPRUS, AND METAMORPHOSED DEPOSITS OF THIS TYPE IN CANADA AND JAPAN, 1965-69.

DEPOSITS OF THIS TYPE IN CANADA ARE GEOLOGICALLY INTERESTING AND ECONOMICALLY IMPORTANT, BUT MOST OF THE EVIDENCE BEARING ON THEIR GENESIS IS MASKED BY SUBSEQUENT METAMORPHIC EFFECTS. TO GAIN A BETTER UNDERSTANDING OF THEIR GENESIS, UNMETAMORPHOSED DEPOSITS OF THIS TYPE HAVE BEEN STUDIED IN JAPAN AND IN CYPRUS. LABORATORY INVESTIGATION OF THE COLLECTED MATERIALS IS CONTINUING.

458. DARLING, R., UNIV. OF WESTERN ONTARIO-

RELATIONSHIP OF METADIABASE DIKES TO SULPHIDE ORES AT THE HORNE MINE, NORANDA, QUEBEC, 1967-68.

459. DE ROMER, H.S., QUEBEC DEPT. OF NATURAL RESOURCES-

LAC MADELEINE AREA, TOWNSHIPS OF LESSEPS, DEVILLE AND DESLANDES, COUNTY OF GASPE-NORD, 1,000 FEET TO

1 INCH, 1966-.
DETAILED MAPPING OF THE VOLCANIC AND SEDIMENTARY FORMATIONS. PROJECT WAS STARTED ON SOUTH SIDE OF THE GRANITIC MASS IN 1964 BY J.L. ROBERT WHO CARRIED IT EASTWARDLY IN 1965 AND 1966 (PREL. REPTS. 540, 549 AND 562), THE PROJECT WAS CARRIED NORTHWARD, ON THE WEST SIDE OF THE INTRUSION BY P. GIRARD IN 1965 (PREL. REPT. 563), ON THE EAST SIDE IT IS BEING CARRIED NORTHWARD BY H.S. DE ROMER. THE AREA IS THE SITE OF COPPER MINERALIZATION.

460. FOLINSBEE, R.E., FRITZ, P., KROUSE, H.R., CUMMING, G.L., SASAKI, A., JACKSON, S.A., GREIG, J., SINGH, R.N., UNIV. OF ALBERTA-
STUDIES OF MISSISSIPPI VALLEY TYPE LEAD ZINC DEPOSITS, 1964-, PH.D. THESIS (JACKSON), M.SC. THESES (GREIG AND SINGH).
THESE COMPREHENSIVE STUDIES USING ISOTOPES OF PB, S, O AND C ARE AN ATTEMPT TO DEFINE THE GENESIS OF THIS IMPORTANT TYPE OF ORE DEPOSIT. DEPOSITS OF PINE POINT, N.W.T. AND WALSORTIAN REEF COMPLEX OF IRELAND ARE CURRENTLY UNDERWAY. SEE PINE POINT, N.W.T., CANADA- A LEAD-ZINC DEPOSIT FORMED FROM HYDROTHERMAL CONNATE BRINES (ABSTRACT), INTERNATIONAL ASSOCIATION ON THE GENESIS OF ORE DEPOSITS, SYMPOSIUM AT ST. ANDREWS, SCOTLAND, SEPTEMBER 8-17, 1967.

461. FOLINSBEE, R.E., SASAKI, A., CHRISMAS, L., UNIV. OF ALBERTA-
ECONOMIC GEOLOGY OF THE CRAIGMONT MINE, BRITISH COLUMBIA, 1966-68, M.SC. THESIS (CHRISMAS).
A STUDY OF THE ECONOMIC GEOLOGY OF THE CRAIGMONT DEPOSITS USING MODERN METHODS IN ECONOMICS AND APPLYING STABLE ISOTOPES TO ESTABLISH THE GENESIS OF THE DEPOSIT.

462. FYLES, J.T., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
THE JORDAN RIVER AREA, BRITISH COLUMBIA, 1967-68.
STUDY OF THE STRUCTURE AND LEAD-ZINC MINERALIZATION IN ROCKS OF THE SHUSWAP METAMORPHIC COMPLEX. PART OF THE CORDILLERAN STRUCTURE PROJECT.

463. GIRARD, P., MCGILL UNIV.-
GEOLOGY OF WEXFORD COPPER DEPOSIT, QUEBEC, 1965-69, PH.D. THESIS.

464. GRAHAM, R.A.F., UNIV. OF WESTERN ONTARIO-
NATURE AND GENESIS OF THE MOGUL STRATIFORM MASSIVE

SULPHIDE DEPOSIT, CO. TIPPERARY, IRELAND, 1967-70, PH.D. THESIS.

465. HUTCHINSON, R.W., FISHER, D., HATTIE, D.W., GRENIER, J., GRAHAM, R.A., UNIV. OF WESTERN ONTARIO-
GENETIC STUDIES OF MASSIVE SULFIDE ORE DEPOSITS, 1964-.
INVESTIGATIONS ARE ON A BROAD BASIS INVOLVING EXPERIMENTAL STUDIES, COMPARATIVE STUDIES AND FIELD STUDIES. THEY ALSO COVER THE TWO STAGES OF SULPHIDE ORIGIN, PRIMARY (OR SYNGENETIC) AND METAMORPHIC. SEE ORIGIN OF CANADIAN MASSIVE SULFIDE ORES RECONSIDERED BY COMPARISON TO CYPRUS DEPOSITS, CIMM BULL., VOL. 58, NO. 641, PP. 972-986 AND 992-993, 1965 + LATER DISCUSSIONS.

466. HUTCHINSON, R.W., MACRAE, N.D., UNIV. OF WESTERN ONTARIO-
ELECTRON PROBE INVESTIGATIONS OF COMPOSITIONS OF METALLIC SULFIDES, 1966-68.
THIS INVESTIGATION HAS PARTICULAR PERTINENCE TO THE THERMAL METAMORPHISM OF SULPHIDE ORES.

467. JOHNSON, A.E., CLARK, A.H., QUEEN S UNIV.-
THE ROLE OF METAMORPHISM IN THE DEVELOPMENT OF THE MINERAL ASSEMBLAGES OF MASSIVE SULPHIDE DEPOSITS, 1967-70, PH.D. THESIS (JOHNSON).
THE EFFECTS OF METAMORPHISM ON THE TEXTURES, MINERALOGY, AND GEOCHEMISTRY OF MASSIVE, STRATA-BOUND SULPHIDE ORES OF VOLCANIC AFFINITIES WILL BE ASSESSED BY COMPARATIVE STUDIES OF DEPOSITS OCCURRING IN HOST ROCKS OF DIFFERENT METAMORPHIC GRADES.

468. KINDLE, E.D., GEOL. SURV. CANADA-
COPPER DEPOSITS OF CANADA, 1960-68.
VOLUME 1 COVERING THE CORDILLERAN REGION WILL CONTAIN SUMMARIES OF OVER 1,600 COPPER PROPERTIES IN TABLE FORM.

469. KISH, L., QUEBEC DEPT. NATURAL RESOURCES-
BLONDEAU TOWNSHIP, COUNTY OF TEMISCAMING, 1 INCH TO 1,000 FEET, 1965-67.
STUDY OF A BELT OF VOLCANIC AND ASSOCIATED INTRUSIVE ROCKS WHERE CU-NI MINERALIZATION HAS BEEN ENCOUNTERED. SEE EAST HALF OF GABOURY TOWNSHIP, QUEBEC DEPT. NAT. RES., P.R. 554.

470. MALIK, O.P., ARNOLD, R.G., UNIV. OF SASKATCHEWAN-
PHASE EQUILIBRIUM STUDIES IN THE FE-NI-S SYSTEM, 1966-

68, M.SC. THESIS (MALIK).
HIGH TEMPERATURE MELTING RELATIONS ARE BEING INVESTIGATED BY QUENCHING EXPERIMENTS.

471. MCALLISTER, A.L., MACFARLANE, P.W., UNIV. OF NEW BRUNSWICK-
GEOLOGY OF A-C-D ZONES, HEATH STEELE SULPHIDE DEPOSITS, NEW BRUNSWICK, 1964-69- M.SC. THESIS (MACFARLANE).
SEE MASSIVE SULPHIDES IN NEW BRUNSWICK- BULL. CAN. INST. MIN. MET., FEBRUARY, 1966.

472. MILNE, V.G., ONTARIO DEPT. OF MINES-
CUNI PBZN MINERAL INVENTORY, ONTARIO, 1966-68.

473. MOOKHERJEE, A., UNIV. OF WESTERN ONTARIO-
RELATIONSHIP OF LATE DIABASE TO MASSIVE SULPHIDES, HORNE MINE, QUEBEC, 1966-67.

474. NALDRETT, A.J., UNIV. OF TORONTO-
STUDY OF EQUILIBRIA BETWEEN SULFIDE-OXIDE LIQUIDS AND SILICATE MELTS, 1968-.
SEE MELTING RELATIONSHIPS IN A PORTION OF THE FE-S-O SYSTEM AND THE CRYSTALLIZATION OF SULFIDE-OXIDE ORE MAGMAS, ABSTRACT PROGRAM OF 1967, GEOL. SOC. AMER. ANNUAL MEETING.
STUDY OF SUB-SOLIDUS REACTIONS BETWEEN FE-NI OLIVINES AND FE-NI SULFIDES, 1967-69.
TO DETERMINE EXPERIMENTALLY WHETHER REACTIONS BETWEEN SULFUR AND NICKEL-BEARING OLIVINE TO FORM SULFIDE ORE, PROPOSED ON THE BASIS OF FIELD STUDIES, WILL OCCUR UNDER CONDITIONS LIKELY TO BE FOUND IN NATURE.
SEE THE ROLE OF SULFURIZATION IN THE GENESIS OF IRON-NICKEL SULFIDE DEPOSITS OF THE PORCUPINE DISTRICT, ONTARIO, BULL. CAN. INST. MIN. MET., VOL. 59, PP. 489-497, 1966.

475. NALDRETT, A.J., MOORHOUSE, W.W., JEN, L.S., GREENMAN, L., HEWINS, R.M., UNIV. OF TORONTO-
STUDY OF THE MARGINAL ROCKS OF THE NICKEL IRRUPTIVE AND ADJACENT FOOTWALL ROCKS ALONG THE NORTH RANGE OF THE SUDBURY BASIN, ONTARIO, 1966-, PH.D. THESES (JEN, GREENMAN AND HEWINS).
SEE A STUDY OF THE STRATHCONA MINE AND ITS BEARING ON THE ORIGIN OF THE NICKEL-COPPER ORES OF THE SUDBURY DISTRICT, ONTARIO, JOUR. PETROL., VOL. 8, PP. 453-531.

476. O*DONNELL, N.D., UNIV. OF WESTERN ONTARIO-
INVESTIGATION OF AN INDICATOR TRAIN OF SULPHIDE ORE AT GULL POND, NEWFOUNDLAND, 1967-69, M.SC. THESIS.

477. PROCYSHYN, E.L., UNIV. OF MANITOBA-
THE MORPHOLOGY OF SULFIDE ORE DEPOSITS IN THE CANADIAN SHIELD, 1965-67- M.SC. THESIS.

478. ROSCOE, W.E., MCGILL UNIV.-
GEOLOGY OF THE ANACONDA CARIBOU SULFIDE DEPOSIT, NEW BRUNSWICK, 1967-69, M.SC. THESIS.

479. SANGAMESHWAR, S., BYERS, A.R., ARNOLD, R.G., UNIV. OF SASKATCHEWAN-
MINERALOGICAL AND TRACE ELEMENT STUDIES IN SULFIDES OF THE OSBORNE LAKE MINE, MANITOBA, 1966-68- M.SC. THESIS (SANGAMESHWAR).

480. SANGSTER, D.F., GEOL. SURV. CANADA-
GEOCHEMISTRY OF LEAD-ZINC DEPOSITS IN CARBONATE ROCKS, 1965-.
AT LEAST FOUR MAJOR GEOLOGICAL TYPES OF LEAD-ZINC DEPOSITS IN CARBONATE ROCKS HAVE BEEN RECOGNIZED TO OCCUR IN CANADA. RESEARCH ON THESE DEPOSITS IS TWO-FOLD- (1) FURTHER DEFINITION OF GEOLOGICAL TYPES, AND (2) STUDIES OF MAJOR METAL RATIOS, TRACE ELEMENT CONTENT, AND STABLE ISOTOPE RATIOS TO REVEAL ANY GEOCHEMICAL CHARACTERISTICS. PRELIMINARY FINDINGS INDICATE THAT ALTHOUGH RATHER DISTINCT GEOCHEMICAL TYPES CAN BE RECOGNIZED, THESE SHOW ONLY WEAK CORRELATION WITH THE GEOLOGICAL TYPES.
SULPHUR ISOTOPES IN ANCIENT SEAS AND STRATA-BOUND SULPHIDE DEPOSITS, 1966-68.
FROM DATA FOR 65 STRATA-BOUND SULPHIDE DEPOSITS A PARALLELISM EXISTS BETWEEN AVERAGE SULPHUR ISOTOPE RATIOS IN THE ORE AND IN CONTEMPORANEOUS OCEAN WATER. SULPHIDE MINERALS IN THE ORE ARE DEPLETED IN S34 RELATIVE TO SEAWATER SULPHATE. THESE DATA STRONGLY SUGGEST THAT ALL OR MOST OF THE SULPHUR IN THESE STRATA-BOUND DEPOSITS, RANGING IN AGE FROM PRECAMBRIAN TO TERTIARY, WAS DERIVED FROM CONTEMPORANEOUS OCEAN WATER SULPHATE AND WAS REDUCED TO SULPHIDE BY BACTERIAL ACTION.

481. SCHWARCZ, H.P., GROOTENBOER, J., MCMASTER UNIV.-
EQUILIBRIUM SULFUR ISOTOPE FRACTIONATION BETWEEN GALENA, SPHALERITE AND PYRITE, 1966-69, PH.D. THESIS (GROOTENBOER).
PBS, ZNS AND FES2 ARE SYNTHESIZED AT SELECTED

TEMPERATURES IN THE PRESENCE OF EXCESS SULFUR AND FRACTIONATION OF S-ISOTOPES DETERMINED. COMPARISON WILL BE MADE WITH THEORETICAL CALCULATIONS AND MEASUREMENTS FROM ORE DEPOSITS.

482. SCOTT, S.A. (MRS.), MCGILL UNIV.-
TRACE-ELEMENT STUDY, TEMAGAMI MINE ORE, ONTARIO, 1965-68, M.SC. THESIS.

483. SLANKIS, J.A., GEOL. SURV. CANADA-
THE APPLICATION OF THE MAGNETO-TELLURIC METHOD FOR SULPHIDE ORE PROSPECTING, 1966-68.
THE PURPOSE IS TO STUDY THE USE OF THE MAGNETO-TELLURIC METHOD AT A SINGLE FREQUENCY OF 8 HZ TO DETERMINE IF THE METHOD CAN BE USED FOR SULPHIDE ORE DETECTION.

484. SUFFEL, G.G., HUTCHINSON, R.W., UNIV. OF WESTERN ONTARIO-
GENESIS OF SOME TURKISH MASSIVE SULPHIDE ORES AND COMPARISON WITH FEATURES SEEN IN CANADIAN DEPOSITS, 1965-.
SEE REMARKS ON SOME SULPHIDE DEPOSITS IN VOLCANIC EXTRUSIVES, CAN. MIN. MET. BULL., VOL. 58, NO. 642, PP. 1057-1063, 1965.

485. TEMPELMAN-KLUIT, D.J., GEOL. SURV. CANADA-
ANVIL-VANGORDA CREEK, TAY RIVER DISTRICT, YUKON TERRITORY, 1 INCH TO 1 MILE, 1967-.
STRATIGRAPHIC AND STRUCTURAL STUDIES AS AN AID TO MINERAL EXPLORATION.

486. VAN DE WALLE, M., QUEBEC DEPT. OF NATURAL RESOURCES-
NORTHWEST QUARTER OF LESUEUR TOWNSHIP, LAKE BACHELOR AREA, COUNTY OF ABITIBI-EAST, 1 INCH TO 1,000 FEET, 1966-68.
STUDY OF A BELT OF FLOW, PYROCLASTIC AND SEDIMENTARY ROCKS WHERE CU, ZN MINERALIZATION HAS BEEN ENCOUNTERED. SEE SOUTHEAST QUARTER OF NELLIGAN TOWNSHIP, QUEBEC DEPT. NAT. RES., P.R. 568.

487. WANLESS, R.K., LOVERIDGE, W.D., BOYLE, R.W., STEVENS, R.D., PETERS, C., LEECH, G.B., ROSCOE, S.M., GEOL. SURV. CANADA-
ISOTOPIC STUDY OF CANADIAN LEAD ORES, 1956-.
TO DETERMINE THE LEAD (AND POSSIBLY SULPHUR) ISOTOPE DISTRIBUTION IN LEAD ORES, TO INVESTIGATE POSSIBLE ISOTOPE VARIATIONS WITH GEOLOGICAL ENVIRON-

MENT, TO DETERMINE THE DIRECTION AND MAGNITUDE OF ISOTOPIC FRACTIONATION OF LEAD ISOTOPES AS A RESULT OF CHEMICAL AND PHYSICAL PROCESSES IN NATURE, WHEN APPLICABLE, TO ESTABLISH THE AGE, EMPLOYING THE **COMMON LEAD** METHOD OF DATING.

488. WILSON, H.D.B., UNIV. OF MANITOBA-
NICKEL DEPOSITS RELATED TO ULTRAMAFIC INTRUSIONS, 1963-.
SEE NICKEL SULPHIDE ORES RELATED TO ULTRABASIC INTRUSIONS IN CANADA- SOC. ECON. GEOL., SYMPOSIUM ON MAGMATIC ORE DEPOSITS (IN PRESS).

Ferrous Metals

489. BLAIS, R.A., ECOLE POLYTECHNIQUE-
GEOLOGY AND GEOSTATISTICS OF THE BAFFINLAND IRON DEPOSIT, 1963-68.
DETAILED MINERALOGY OF THESE VERY HIGH-GRADE IRON ORES, TOGETHER WITH A COMPLETE STRUCTURAL STUDY AND A DETAILED INVESTIGATION OF THE DISTRIBUTION OF METAL VALUES IN THIS VERY LARGE OREBODY. ALL GEOSTATISTICS FOR THIS DEPOSIT ARE BEING OBTAINED BY ELECTRONIC DATA PROCESSING.

490. BLAIS, R.A., GUILLOUX, L., ECOLE POLYTECHNIQUE-
GEOLOGY OF THE HULL IRON SKARN DEPOSIT, 1967-68, M.A.SC. THESIS (GUILLOUX).
MINERALOGICAL, PETROGRAPHIC AND STRUCTURAL STUDY OF THE WALL-ROCKS AND DETAILED GEOLOGICAL STUDY OF THIS TABULAR BODY OF MASSIVE MAGNETITE.

491. DORR, A., MCGILL UNIV.-
IRON DEPOSITS, CHIBOUGAMAU DISTRICT, QUEBEC, 1967-69, M.SC. THESIS.

492. FISHER, D.F., UNIV. OF WESTERN ONTARIO-
GENESIS OF THE NO. 5 ORE ZONE, HORNE MINE, NORANDA, QUEBEC, 1967-68, M.SC. THESIS.

493. GROSS, G.A., GEOL. SURV. CANADA-
GEOLOGY OF IRON-FORMATIONS AND IRON DEPOSITS OF CANADA, 1957-.
A TYPICAL STRATIGRAPHIC SECTION OF CARBONATE AND SULPHIDE FACIES OF ALGOMA TYPE IRON-FORMATION IN THE MICHIPICOTEN AREA OF ONTARIO WAS EXAMINED AND MINERALOGICAL AND PETROLOGICAL STUDIES CARRIED OUT. GEOLO-

GICAL DATA FROM CONTINUING RESEARCH ON IRON-FORMATION WERE USED AS A PRIMARY BASIS FOR A SPECIAL APPRAISAL OF POTENTIAL IRON ORE AND IRON ORE RESERVES IN CANADA AS A CONTRIBUTION TO A UNITED NATIONS SPONSORED SURVEY OF WORLD IRON ORE RESERVES. SEE GEOLOGY OF IRON DEPOSITS IN CANADA, VOL. II-IRON DEPOSITS IN THE APPALACHIAN AND GRENVILLE REGIONS OF CANADA, GEOL. SURV. CAN., ECON. GEOL. REPT. NO. 22.

494. JOLLIFFE, A.W., RILEY, R.A., QUEEN S UNIV.-
CHARACTER AND ORIGIN OF STEEPROCK BAUXITE, STEEPROCK LAKE, ONTARIO, 1965-68, M.SC. THESIS (RILEY).

495. MCALLISTER, A.L., BHATIA, D.M.S., UNIV. OF NEW BRUNSWICK-
FACIES CHANGE IN IRON FORMATION, BRUNSWICK NO. 12 MINE, BATHURST, NEW BRUNSWICK, 1966-69- M.SC. THESIS (BHATIA).

496. MCLEOD, C.R., GEOL. SURV. CANADA-
GEOLOGY OF IRON DEPOSITS IN CANADA - OCCURRENCES OF MAGHEMITE, 1967.
THE OBJECTIVE IS TO CONFIRM THE PRESENCE OF MAGHEMITE IN STEEP ROCK LAKE **BUCKSHOT ORE** AND MAGNETITE-HEMATITE DEPOSITS IN BAFFIN ISLAND.

497. RILEY, R.A., ONTARIO DEPT. OF MINES-
CHARACTER AND ORIGIN OF THE STEEP ROCK BUCKSHOT- A FERRUGINOUS LATERITE, 1965-68, M.SC. THESIS.
A CHEMICAL AND MINERALOGICAL STUDY OF THE FERRUGINOUS, CONCRETIONARY LATERITIC TYPE DEPOSIT FOUND IN THE ERRINGTON OREBODY AT STEEP ROCK LAKE.

498. SHKLANKA, R., ONTARIO DEPT. OF MINES-
IRON DEPOSITS OF ONTARIO - A MINERAL INVENTORY, 1967-68.
SEE ONT. DEPT. MINES, MISC. PAPER 11, 1967, P. 73.

499. WILTON, H.P., UNIV. OF MANITOBA-
IRON DEPOSITS OF THE TEMAGAMI REGION, ONTARIO, 1965-68- PH.D. THESIS.

Radioactive Deposits

500. BARUA, M.C., MCCARTNEY, W.D., QUEEN*S UNIV.-
GEOLOGY OF URANIUM - MOLYBDENUM MINERALIZATION, MAKKOVIC AREA, LABRADOR, 1967-68, M.SC. THESIS

(BARUA).

501. BECK, L.S., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
RADIOACTIVE OCCURRENCES IN THE ATHABASCA REGION, NORTHERN SASKATCHEWAN, 1962-68, PH.D. THESIS, UNIV. OF LEEDS.
STUDIES OF ORIGIN, TIME RELATIONSHIPS, AND STRUCTURE OF RADIOACTIVE DEPOSITS IN THE ATHABASCA (BEAVERLODGE) REGION. SEE PRELIMINARY REPORT OF URANIUM DEPOSITS IN THE ATHABASCA REGION, SASKATCHEWAN, D.M.R. REPORT NO. 112, 1967.

502. MACDONALD, J.A., MCGILL UNIV.-
SURFACE MIGRATION OF URANIUM, BEAVERLODGE, SASKATCHEWAN, 1964-68, PH.D. THESIS.

503. OVERTON, A., GEOL. SURV. CANADA-
SEISMIC METHODS, ELLIOT LAKE, ONTARIO, 1966-67.
PURPOSE OF SURVEY IS TO ASSESS THE FEASIBILITY OF USING SEISMIC TECHNIQUES TO MEASURE STRATA THICKNESSES AND ATTITUDES OVERLYING THE URANIUM PAY ZONE. BOTH REFRACTION AND REFLECTION (COMMON DEPTH POINT) TECHNIQUES HAVE BEEN APPLIED.

504. ROBERTSON, J.A., ONTARIO DEPT. MINES-
URANIUM-THORIUM DEPOSITS OF NORTHERN ONTARIO, 1966-68. REGIONAL STUDIES, ELLIOT LAKE AREA, ONTARIO.
SEE ONT. DEPT. MINES, M.P. NO. 9, MAPS 2113 AND 2114.

505. SMITH, A.Y. GEOL. SURV. CANADA-
GEOCHEMICAL PROSPECTING RESEARCH - URANIUM, 1967-68.
THIS PROJECT IS DESIGNED TO TEST RECONNAISSANCE AND DETAILED GEOCHEMICAL PROSPECTING TECHNIQUES EMPLOYING STREAM SEDIMENTS, WATERS AND SOILS FOR THE DETECTION OF URANIUM DEPOSITS IN THE CANADIAN SHIELD. IT IS INTENDED TO PROVIDE SOME GENERAL PRINCIPLES OF THE DISPERSION OF URANIUM IN THE VARIOUS SURFICIAL ENVIRONMENTS OF THE SHIELD.

Other Metals

506. BAADSGAARD, H., STELMACH, A., UNIV. OF ALBERTA-
GEOCHEMICAL PROSPECTING FOR AG UTILIZING AS AS A PATHFINDER, 1966-68.
SILVER MINERALIZATION IN METASEDIMENTARY ROCKS OF THE GREAT BEAR LAKE AREA, N.W.T. CAN BE LOCATED BY

MINERAL DEPOSITS

GEOCHEMICAL PROSPECTING IN THE BEDROCK UTILIZING AS AS A PATHFINDER.

507. BLAIS, R.A., FORTIN, N., ECOLE POLYTECHNIQUE-
GEOSTATISTICS OF GOLD MINERALIZATION AT THE SULLIVAN CONSOLIDATED GOLD MINE, NORTHWESTERN QUEBEC, 1966-68, M.A.SC. THESIS (FORTIN).
INCLUDES A PETROGRAPHIC STUDY OF THE MAIN WALL-ROCKS, AN EXAMINATION OF WALL-ROCK ALTERATION, AND A GEOSTATISTICAL STUDY OF A FEW TYPICAL GOLD-BEARING QUARTZ VEINS. THE 5,000 ASSAY VALUES USED ARE STUDIED BY ELECTRONIC DATA PROCESSING, USING A CDC-3100 COMPUTER.

508. CHURCH, D.K., CROCKET, J.H., MCMASTER UNIV.-
PRECIOUS METALS IN THE SILVER ORES OF COBALT, ONTARIO, 1967-68, M.SC. THESIS (CHURCH).
NEUTRON ACTIVATION ANALYSIS WILL BE USED TO DETERMINE THE CONCENTRATIONS OF AU, PD AND POSSIBLY, OS IN THE SILVER RICH ORES OF COBALT, ONTARIO.

509. CLARK, A.H., FARRAR, E., QUEEN*S UNIV.-
RELATIONSHIPS BETWEEN GRANITIC DIFFERENTIATION AND TIN-TUNGSTEN MINERALIZATION IN THE SOUTHERN PART OF THE HERCYNIAN METALLOGENETIC PROVINCE OF PORTUGAL, 1967-70.
THE INTER-RELATIONSHIPS BETWEEN GRANITIC INTRUSION AND DIFFERENTIATION AND TIN-TUNGSTEN MINERALIZATION ARE BEING STUDIED THROUGH GEOCHEMICAL AND ISOTOPIC INVESTIGATIONS OF BARREN AND ORE-BEARING INTRUSIONS. SEE PRELIMINARY STUDY OF THE TEMPERATURES AND CONFINING PRESSURES OF GRANITE EMPLACEMENT AND MINERALIZATION, PANASQUEIRA, PORTUGAL, TRANS. INSTN. MINING AND METALL., VOL. 73, PP. 813-824, AND VOL. 74, PP. 663-672, 1964 AND 1965.

510. FERGUSON, S.A., ONTARIO DEPT. MINES-
GEOLOGY OF DEEP DEVELOPMENTS OF SOME GOLD MINES IN NORTHWESTERN ONTARIO, 1966-67.
SEE ONT. DEPT. MINES, P.R. 1966-1, 1966, PP. 22-23.

511. JAMBOR, J.L., GEOL. SURV. CANADA-
MINERALOGY OF NON-METALLIC VEIN AND WALLROCK MINERALS, COBALT-GOWGANDA SILVER DEPOSITS, ONTARIO, 1966-69.
DETAILED STUDY OF THE CHEMISTRY AND MINERALOGY OF THE CARBONATES AND WALLROCK ALTERATION MINERALS, PREDOMINANTLY IN THE DIABASE HOST ROCKS OF GOWGANDA.

MINERAL DEPOSITS

512. JOHNSTON, F.J., ONTARIO DEPT. MINES-
MOLYBDENUM DEPOSITS OF ONTARIO, 1965-68.
A COMPILATION OF REPORTED MOLYBDENUM OCCURRENCES IN THE PROVINCE.

513. MAHAJAN, S.K., MCGILL UNIV.-
MOLYBDENITE DEPOSITS OF PREISSAC TOWNSHIP, QUEBEC, 1967-69, PH.D. THESIS.

514. MAJMUNDAR, H.H., FRIEDLAENDER, C.G.I., DALHOUSIE UNIV.-
RHENIUM CONTENT IN NOVA SCOTIAN MOLYBDENITES, 1966-68.
STUDY OF DISTRIBUTION OF RHENIUM CONTENT IN MOLYBDENITES FROM VARIOUS LOCALITIES OF NOVA SCOTIA.

515. MARTINDALE, R.D., CROCKET, J.H., MCMASTER UNIV.-
GOLD IN THE ELLIOT LAKE URANIFEROUS CONGLOMERATES, ONTARIO, 1966-68, M.SC. THESIS (MARTINDALE).
THE GOLD CONTENT OF APPROXIMATELY 30 PYRITE CONCENTRATES FROM THE ELLIOT LAKE URANIFEROUS CONGLOMERATE CORES HAS BEEN DETERMINED. THE AVERAGE CONCENTRATION IS APPROXIMATELY 0.5 PPM AND RANGES FROM 0.1 TO 1.6 PPM. FEW EXTREME VALUES ARE NOTED. PT HAS ALSO BEEN FOUND IN SOME SAMPLES. ITS CONCENTRATION IS PROBABLY IN THE PPM RANGE.

516. MULLIGAN, R., GEOL. SURV. CANADA-
LITHIUM CONTENT OF CANADIAN GRANITES, 1965-.
THE OBJECT IS TO COMPARE THE LITHIUM CONTENT OF SAMPLES OF GRANITE FROM GEOLOGICAL PROVINCES IN WHICH LITHIUM DEPOSITS ARE SCARCE OR ABSENT WITH THOSE FROM PROVINCES IN WHICH DEPOSITS ARE ABUNDANT.

517. MULLIGAN, R., JAMBOR, J.L., GEOL. SURV. CANADA-
TIN IN SILICATES FROM SKARN IN THE CASSIAR DISTRICT, NORTHERN BRITISH COLUMBIA, 1965-67.
TWO SKARNS ARE CHARACTERIZED BY THE PRESENCE OF UP TO 0.9 PERCENT SNO2 IN A UNIQUE IRON-RICH ASSEMBLAGE OF ANDRADITE, EPIDOTE, FERRACTINOLITE AND HEDENBERGITE. NO NORMAL TIN MINERALS ARE PRESENT, AND INDICATIONS ARE THAT THE TIN IS PRINCIPALLY IN THE LATTICE OF GARNET AND EPIDOTE, PROBABLY AS SN4+, SUBSTITUTING FOR FE3+. SEE TIN IN SILICATES FROM SKARN IN THE CASSIAR DISTRICT, NORTHERN BRITISH COLUMBIA, CANADIAN MINERALOGIST (IN PRESS)).

518. PETRUK, W., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-

MINERALOGY OF THE SILVER DEPOSITS IN THE COBALT AND GOWGANDA AREAS, ONTARIO, 1964-69.

A SYSTEMATIC STUDY IS BEING MADE TO OBTAIN DETAILED INFORMATION ON THEIR MINERALOGICAL AND CHEMICAL CHARACTERISTICS. THIS STUDY HAS ALREADY SHOWN THAT THE ORE VEINS BELOW THE NIPISSING DIABASE ARE ZONED WITH RESPECT TO TYPE OF ARSENIDE MINERALS AND GRADE OF SILVER ORE, AND THAT THE ZONING IS CONSISTENT IN ALL THE VEINS. PRELIMINARY WORK SUGGESTS THAT THE ORE VEINS ABOVE THE NIPISSING DIABASE ARE ALSO ZONED, BUT THE ZONING IN THESE VEINS IS A MIRROR REFLECTION OF THAT IN THE VEINS BELOW THE DIABASE. A PRELIMINARY ASSESSMENT OF THE TEXTURES OF THE MINERALS SUGGESTS THAT THE ORE WAS NOT NECESSARILY PRECIPITATED FROM A COLLOID AS SUGGESTED BY PREVIOUS WORKERS. SEE PRELIMINARY MINERALOGICAL STUDY OF THE SILVER DEPOSITS IN THE COBALT AREA, ONTARIO, INFORMATION CIRCULAR 179, MINES BRANCH.

519. POULIOT, G., ECOLE POLYTECHNIQUE-

CARBONATE MINERALS IN CARBONATITE INTRUSION, OKA, QUEBEC, 1966-68.

APPROXIMATELY 150 SPECIMENS OF CARBONATE BEARING ROCKS HAVE BEEN COLLECTED. THESE COMPRISE HAND SPECIMENS FROM THE VARIOUS PHASES OF THE COMPLEX AS WELL AS CORE SAMPLES FROM TWO SECTIONS ACROSS THE ORE ZONE AT THE ST. LAWRENCE MINE. AFTER DETERMINING BULK NB2O5 OF THE SAMPLES, CARBONATE MINERALS WERE SEPARATED FROM THESE AND A NUMBER OF PHYSICAL PROPERITES INVESTIGATED. THESE INCLUDE- FLUORESCENCE IN U.V, LATTICE SPACINGS (211), (122), R.I, 2V, INFRARED SPECTRA (2 4 FUNDAMENTALS). TRACE ELEMENT DETERMINATION USING X-RAY FLUORESCENCE (BA, SR, MN, FE) AND ATOMIC ABSORPTION (MG, SI, AL) SHOULD BE COMPLETED IN 1968. IT IS HOPED TO CORRELATE THESE VARIOUS DATA WITH, PHYSICAL PROPERTIES, TYPES OF CARBONATITES AND POSSIBLY NB2O5 CONTENT OF THE SAMPLES.

520. PROCHNAU, J., MCGILL UNIV.-

GOLD DISTRIBUTION IN THE CHIBOUGAMAU DISTRICT, QUEBEC, 1965-68, M.SC. THESIS.

521. RUCKLIDGE, J.C., UNIV. OF TORONTO-

ELECTRON PROBE STUDY OF THE VARIATION OF GOLD-SILVER RATIOS IN CERTAIN ONTARIO GOLD MINES, 1966-68.

SEE THE APPLICATION AND SIGNIFICANCE OF GOLD-SILVER RATIOS AT VAL D OR, QUEBEC, ECON. GEOL., VOL. 62, PP. 502-516.

MINERAL DEPOSITS

522. SIZGORIC, T.M. (MRS.), MCGILL UNIV.-
GAS TRANSFER OF MOLYBDENUM SULPHIDE, 1966-68, M.SC. THESIS.

523. STEPHENSON, J.F., UNIV. OF MANITOBA-
GOLD DEPOSITION IN THE PROJECT PIONEER AREA, RICE LAKE, MANITOBA, 1967-70- PH.D. THESIS.

Industrial Minerals

524. BABET, P.H., RESEARCH COUNCIL OF ALBERTA-
COMPILATION OF DATA ON INDUSTRIAL MINERALS IN ALBERTA, 1965-.
SEE SOME ASPECTS OF BENTONITE IN ALBERTA, RES. COUNCIL OF ALBERTA, REPT. 66-2.

525. BANNATYNE, B.B., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES-
CLAY AND SHALE DEPOSITS OF MANITOBA, 1962-68.

526. BECK, L.S., SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
INDUSTRIAL MINERALS INVESTIGATIONS IN THE PASQUIA HILLS AREA, SASKATCHEWAN, 1967-69.
RECONNAISSANCE OF AN AREA OF ABOUT 8,000 SQ. MILES FOR PUBLICATION ON A SCALE OF 4 MILES TO 1 INCH, AND INVESTIGATION OF DEPOSITS OF OIL SHALE AND SILICA SAND. SEE PRELIMINARY REPORT IN SUMMARY OF GEOLOGICAL SURVEYS CONDUCTED IN SASKATCHEWAN, 1967.

527. BIDGOOD, D.E.T., BLANCHARD, F.E., TAKE, W.F., NOVA SCOTIA RESEARCH FOUNDATION-
GEOPHYSICAL INVESTIGATIONS OF EVAPORITES IN NOVA SCOTIA, 1956-.
GRAVITY, MAGNETIC, SEISMIC, BORE-HOLE GEOPHYSICAL AND GEOLOGICAL LOGS, PROVIDE DATA ON OCCURRENCE AND MINERAL PROSPECTS OF SALT INTRUSIONS IN NOVA SCOTIA. SEE GEOPHYSICAL INVESTIGATIONS OF EVAPORITES IN NOVA SCOTIA- PROCEEDINGS CANADIAN CENTENNIAL CONFERENCE ON MINING AND GROUNDWATER GEOPHYSICS, NIAGARA FALLS, 1967 (IN PRESS).

528. CHAGNON, J.Y. QUEBEC DEPT. OF NATURAL RESOURCES-
STUDY OF CLAYS NEAR DESBIENS, LAKE ST-JOHN AREA, 1967-68.
A SEISMIC SURVEY AND A DRILLING PROGRAM WERE CARRIED OUT TO LEARN SOMETHING OF THE THICKNESS AND PHYSICAL PROPERTIES OF THE CLAYS IN THE AREA. SAMPLES

WILL BE STUDIED FOR THEIR MECHANICAL BEHAVIOUR AND THEIR POSSIBLE USE IN THE CERAMICS INDUSTRY.

529. DEAN, R.S., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGY OF ARGILLACEOUS MATERIALS IN CANADA, 1958-.
SEE MINERALOGICAL EXAMINATION OF SANDSTONE AND SILTSTONE, THELON FORMATION (PROTEROZOIC), NORTHWEST TERRITORIES, MINES BRANCH IR 67-28.

530. DELANCEY, P., UNIV. OF MANITOBA-
GEOLOGY OF THE TAREFARE FLUORITE DEPOSIT, NEWFOUNDLAND, 1966-68- M.SC, THESIS.

531. GIBBS, G.W., MCGILL UNIV.-
OILS AND WAXES IN ASBESTOS, 1967-69, M.SC. THESIS.

532. GILES, P.S., ACADIA UNIV.-
THE ORIGIN OF CRETACEOUS GYPSUM AT LA BEUREGUITA, S.L.P., MEXICO, 1966-68, M.SC. THESIS.

533. GITTINS, J., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME), UNIV. OF TORONTO-
MARMETTE LAKE AREA, QUEBEC, 1967-68.
A SPECIAL PROJECT TO PROVIDE A PETROLOGICAL STUDY AND ECONOMIC EVALUATION OF A NEPHELINE SYENITE BODY IN TOUSSAINT TOWNSHIP.

534. GUILLET, G.R., ONTARIO DEPT. MINES-
CLAY AND SHALE RESOURCES OF ONTARIO, 1962-68.
CHEMICAL AND MINERALOGICAL STUDIES, AND OF CERAMIC EVALUATION OF CLAYS AND SHALES OF ONTARIO. SEE ONT. DEPT. MINES, INDUSTRIAL MINERAL REPT. NO. 22, 1967.
TALC IN ONTARIO, 1963-.
MINERAL FILLERS IN ONTARIO, 1964-.
MARL IN ONTARIO, 1964-67.
CHEMICAL AND PHYSICAL EVALUATION OF ONTARIO MARLS.
KAOLIN, FIRECLAY, SILICA SAND, AND LIGNITE OF THE MOOSE RIVER BASIN, ONTARIO, 1966-.
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535. HALFERDAHL, L.B., RESEARCH COUNCIL OF ALBERTA-
FORT MCMURRAY CLAY, ALBERTA, 1965-68.
ANALYSES OF SAMPLES OF CLAY UNDERLYING THE OIL SANDS NEAR FORT MCMURRAY HAVE SHOWN THAT THE CLAY, AT

THE LOCALITY SAMPLED AT LEAST, DOES NOT HAVE PROMISING CERAMIC PROPERTIES.

536. HAMILTON, J.B., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
INDUSTRIAL MINERAL INVESTIGATIONS, NEW BRUNSWICK, 1963-70.
THE LIMESTONE, BARITE, SILICA, GYPSUM AND DIATOMITE DEPOSITS OF NEW BRUNSWICK ARE BEING INVESTIGATED. DETAILED STRATIGRAPHIC AND STRUCTURAL STUDIES WERE UNDERTAKEN IN THE VICINITY OF SAINT JOHN DURING THE SUMMER OF 1967, AND THE GYPSUM DEPOSITS OF THE PROVINCE WILL BE EXAMINED IN 1968. REPORTS ON BARITE AND SILICA WILL BE PUBLISHED IN 1968. SEE LIMESTONE IN NEW BRUNSWICK, MINES BRANCH, NEW BRUNSWICK DEPARTMENT OF LANDS AND MINES, MINERAL RESOURCES REPORT NO. 2.

537. HAMILTON, W.N., RESEARCH COUNCIL OF ALBERTA-
SALT FORMATIONS, ELK POINT GROUP, EAST-CENTRAL ALBERTA, 1966-68.
THE MAPPING OF FOUR SALT FORMATIONS WITH REGARD TO DISTRIBUTION, THICKNESS, DEPTH, PURITY, AND **BRINEABILITY**.
ALBERTA DOLOMITES, 1967-69.
A RECONNAISSANCE SURVEY OF THEIR PHYSICAL AND CHEMICAL PROPERTIES TO DETERMINE THEIR SUITABILITY FOR INDUSTRIAL USE.

538. HARRIS, I., FLEMING, J., BUTLER, J., BARTLETT, G., NEWFOUNDLAND DEPT. OF MINES, AGRICULTURE AND RESOURCES-
SILICA ASSESSMENT PROJECT, 1965-68.
THE INVESTIGATION INVOLVES GEOLOGICAL MAPPING, DIAMOND DRILLING AND QUANTITATIVE ANALYSIS FOR SIO2, FE2O3, AL2O3, MGO, CAO, NA2O, K2O, P.

539. HEWITT, D.F., ONTARIO DEPT. MINES-
SAND AND GRAVEL DEPOSITS IN SOUTHERN ONTARIO, 1967-69.

540. HOLTER, M.E. SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
THE MIDDLE DEVONIAN PRAIRIE EVAPORITE FORMATION OF SASKATCHEWAN, 1965.
A STUDY OF THE STRATIGRAPHY OF THE PRAIRIE EVAPORITE FORMATION WITH PARTICULAR REFERENCE TO THE POTASH-RICH ZONES IN THE UPPER PORTION, BASED LARGELY ON EXAMINATION OF DRILL CORE, CUTTINGS, AND WELL LOGS.

541. HUTCHINSON, R.W., UNIV. OF WESTERN ONTARIO-
ORIGIN OF SYLVITE BEARING EVAPORITES, 1966-67.
RESULTS ARE SUMMARIZED IN TWO PAPERS CURRENTLY IN PRESS. THE MOST SIGNIFICANT FINDING IS AN EXPLANA-

TION OF THE ORIGIN OF SYLVITE-RICH ORE SO COMMON ABOVE CARNALLITIC BEDS IN NATURAL EVAPORITE SEQUENCES. SEE POTASH BEARING EVAPORITES IN THE DANAKIL AREA, ETHIOPIA, ECONOMIC GEOLOGY (IN PRESS).

542. KUPSCH, W.O., TRUSCOTT, (MRS) M.G., UNIV. OF SASKATCHEWAN-
STRATIGRAPHY OF THE STURGEON LAKE MARL, SASKATCHEWAN, 1967-69- M.A. THESIS (MRS. TRUSCOTT).

543. MAURICE, O.D., SIROIS, R., PAQUET, R., QUEBEC DEPT. OF NATURAL RESOURCES-
INVESTIGATIONS OF INDUSTRIAL MINERALS AND BUILDING STONE OCCURRENCES IN QUEBEC.
A CONTINUING PROGRAM OF INVESTIGATION, WITH THE PURPOSE OF ADVISING OWNERS AS TO THE VALUE OF INDUSTRIAL MINERAL DEPOSITS AND TO FURNISH INFORMATION REGARDING THE EXTRACTION AND MARKETING OF THEIR PRODUCTS.

544. MURRAY, D.A., NOVA SCOTIA DEPT. OF MINES-
ECONOMIC APPRAISAL OF THE LIMESTONE AND DOLOMITE DEPOSITS, MAINLAND, NOVA SCOTIA, 1967-, M.A. THESIS.

545. SOLES, J.A., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGY AND PETROGRAPHY OF CONSTUCTION MATERIALS AND THEIR RESPONSE TO ENVIRONMENTAL CONDITIONS, 1957-.
INVESTIGATION OF LONG TERM STABILITY OF SIDEWALK CONCRETES, EFFECTS OF ENTRAINED AIR AND AGGREGATE. SEE SUITABILITY OF THE BUFF AND RED SANDSTONE FROM TROIS-PISTOLES, P.Q. FOR USE AS A DIMENSION STONE, MINES BRANCH IR 66-75.

546. TAKE, W.F., NOVA SCOTIA RESEARCH FOUNDATION-
PHOTOLINEAR PATTERNS ASSOCIATED WITH INTRUSIVE SALT BODIES IN NOVA SCOTIA, 1967-.
STRONG PHOTOLINEAR PATTERNS, APPARENTLY CAUSED BY CONTINUED MOVEMENT OF INTRUSIVE SALT BODIES, ASSIST IN THE INTERPRETATION OF GRAVITY DATA AND THE LOCATION OF NEAR SURFACE EXTENSIONS OF SALT.

547. TIPHANE, M., QUEBEC DEPT. OF NATURAL RESOURCES-
STUDY OF GYPSUM DEPOSITS, MAGDALEN ISLANDS, 1967.
DETAILED STUDY OF THE GYPSUM DEPOSITS TO DETERMINE THEIR POSSIBLE ECONOMIC UTILIZATION. MANY HOLES

WERE DRILLED TO INVESTIGATE THE SIZE OF THE DEPOSITS.

548. WARDLAW, N.C., UNIV. OF SASKATCHEWAN-
CARNALLITE-SYLVITE RELATIONSHIPS IN THE MIDDLE DEVONIAN PRAIRIE EVAPORITE FORMATION, SASKATCHEWAN, 1965-67.
ABRUPT LATERAL AND VERTICAL CHANGES FROM RED CARNALLITE (CARNALLITE-HALITE ROCK) TO RED SYLVINITE (SYLVITE-HALITE ROCK) OCCUR IN THE PRAIRIE EVAPORITE FORMATION BETWEEN WATROUS AND KANDAHAR, SASKATCHEWAN. SUCH CHANGES ARE OF CONSIDERABLE ECONOMIC IMPORTANCE, SINCE CARNALLITE IS TO BE AVOIDED IN POTASH MINING OPERATIONS. STRATIGRAPHIC, MINERALOGICAL AND GEOCHEMICAL ASPECTS OF THE RELATIONSHIP HAVE BEEN INVESTIGATED AND CONCLUSIONS OF SIGNIFICANCE IN EXPLORATION DRAWN. SEE CARNALLITE-SYLVITE RELATIONSHIPS IN THE MIDDLE DEVONIAN PRAIRIE EVAPORITE FORMATION, SASKATCHEWAN- GEOL. SOC. AMER. BULL. (IN PRESS).

549. WRIGHT, J.D., FOWLER, J., NOVA SCOTIA DEPT. OF MINES-
EVALUATION OF CLAY FOR CERAMIC AND OTHER USES, 1966-.
THIS INVESTIGATION IS DIRECTED TO LOCATING REFRACTORY CLAYS DEPOSITED IN PRE-PLEISTOCENE TIME.

Petroleum

550. ACHAM, P., UNIV. OF ALBERTA-
THE MANNVILLE GROUP (LOWER CRETACEOUS) IN THE WINTERING HILLS - HUSSAR - CARBON GAS AREA, CENTRAL ALBERTA, 1966-68, M.SC. THESIS.

551. AHMAD, G., UNIV. OF ALBERTA-
THE MEDICINE HAT GAS FIELD (UPPER CRETACEOUS) SOUTHEASTERN ALBERTA, 1967-68, M.SC. THESIS.

552. BURK, C.F. JR., GEOL. SURV. CANADA-
COMPUTER FILE OF DATA ON FOSSIL FUELS DEPOSITS, 1965-69.
THE STUDY CONCERNS THE DEVELOPMENT OF STANDARDS OF DESCRIPTION FOR OIL AND GAS POOLS, COAL DEPOSITS AND RELATED ECONOMIC SEDIMENTARY DEPOSITS, WITH THE VIEW TO ESTABLISHING A COMPREHENSIVE NATIONAL FILE OF GEOLOGICAL DATA ON KNOWN ECONOMIC DEPOSITS OF THIS TYPE. SEE A NATIONAL SYSTEM FOR STORAGE AND RETRIEVAL OF GEOLOGICAL DATA IN CANADA, NATIONAL ADV. COMM. RES. GEOL. SCIENCES, PP. 68-78, 1967.

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553. CARRIGY, M.A., RESEARCH COUNCIL OF ALBERTA-
MCMURRAY FORMATION STUDIES, ALBERTA, 1953-67.
SEE THE PHYSICAL AND CHEMICAL NATURE OF A TYPICAL TAR SAND. PART 1- BULK PROPERTIES AND BEHAVIOUR, PROC. 7TH WORLD PETROL. CONG., MEXICO CITY.

554. CARTIER, G., UNIV. OF ALBERTA-
THE BELLSHELL LAKE OILFIELD (LOWER CRETACEOUS) EAST-CENTRAL ALBERTA, 1966-69, M.SC. THESIS.

555. CHARBONNIER, R.P., DRAPER, R.G., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
DIRECTORY OF CANADIAN OIL RESERVOIRS, 1964-.
DIRECTORY WILL CONTAIN DETAILED ANALYSES OF NUMEROUS CANADIAN OIL SAMPLES AND GEOLOGICAL, RESERVOIR AND SECONDARY RECOVERY DATA ON SELECTED OIL POOLS FROM WHICH THESE SAMPLES WERE TAKEN.

556. CURRIE, L.J., MCGILL UNIV.-
PETROLEUM POTENTIAL OF TRENTON GROUP, QUEBEC, 1965-68, M.SC. THESIS.

557. DRAPER, R.G., MONTGOMERY, D.S., MINES BRANCH, AND WANLESS, R.K., GEOL. SURV. CANADA-
VARIATION OF SULPHUR ISOTOPE RATIO OF THE BITUMINOUS SAND FROM THE MCMURRAY FORMATION AS A FUNCTION OF THE OXYGEN CONTENT OF THE BITUMEN, 1967-.

558. HOWIE, R.D., GEOL. SURV. CANADA-
SUBSURFACE AND REGIONAL STUDIES IN EASTERN CANADA AS RELATED TO OIL AND GAS, 1966-.

559. MASON, G.D., QUEBEC DEPT. OF NATURAL RESOURCES-
STRATIGRAPHIC STUDY IN THE EAST GASPE BASIN, 1967-68.
A TWO-YEAR FIELD INVESTIGATION OF THE PETROLEUM POSSIBILITIES IN THE LOWER DEVONIAN FORMATIONS OF EASTERN GASPE PENINSULA, WITH SPECIAL EMPHASIS ON THE GASPE LIMESTONE-GASPE SANDSTONE TRANSITION.

560. MCGRATH, P., HOOD, P.J., GEOL. SURV. CANADA-
GEOPHYSICAL STUDY OF THE APPALACHIAN REGION, 1967-.
THIS IS A STUDY OF ALL AVAILABLE GEOPHYSICAL DATA IN ORDER TO THROW LIGHT ON THE GEOLOGY OF THE APPALACHIAN REGION WITH PARTICULAR EMPHASIS ON AREAS WHERE THE SEDIMENTS MIGHT BE OIL-BEARING. SEE GEOPHYSICAL SURVEYS OF THE CONTINENTAL SHELF SOUTH OF NOVA SCOTIA, MARITIME SEDIMENTS, VOL. 3, NO. 1, PP. 6-11.

MINERAL DEPOSITS

561. SANFORD, B.V., GEOL. SURV. CANADA-
SUBSURFACE STUDIES OF EACH OF THE PALAEOZOIC SYSTEMS OF SOUTHWESTERN ONTARIO, 1958-.
TO DESCRIBE AND INTERPRET THE GEOLOGICAL FEATURES OF THE FORMATIONS OF EACH SYSTEM, AND TO ASSESS THEIR ECONOMIC POTENTIALITIES. SEE GEOL. SURV. CAN., PAPER 65-30, 1965.

Coal and Peat

562. BOTHAM, J.C., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
STUDY OF COKING CHARACTERISTICS OF COAL RELEVANT TO ITS PETROGRAPHIC CONSTITUTION, 1956-.
A COOPERATIVE PROJECT WITH COAL RESEARCH LABORATORY, GEOLOGICAL SURVEY OF CANADA.

563. BURK, C.F. JR., GEOL. SURV. CANADA-
COMPUTER FILE OF DATA ON FOSSIL FUELS DEPOSITS, 1965-69.
THE STUDY CONCERNS THE DEVELOPMENT OF STANDARDS OF DESCRIPTION FOR OIL AND GAS POOLS, COAL DEPOSITS AND RELATED ECONOMIC SEDIMENTARY DEPOSITS, WITH THE VIEW TO ESTABLISHING A COMPREHENSIVE NATIONAL FILE OF GEOLOGICAL DATA ON KNOWN ECONOMIC DEPOSITS OF THIS TYPE. SEE A NATIONAL SYSTEM FOR STORAGE AND RETRIEVAL OF GEOLOGICAL DATA IN CANADA, NATIONAL ADV. COMM. RES. GEOL. SCIENCES, PP. 68-78, 1967.

564. HACQUEBARD, P.A., CAMERON, A.R., DONALDSON, J.R., BIRMINGHAM, T.F., BARSS, M.S., GEOL. SURV. CANADA-
MICROSCOPIC COAL RESEARCH IN FIELDS OF COAL PETROLOGY AND CARBONIFEROUS PALYNOLOGY, A CONTINUING PROGRAM.
THE MICROSCOPIC STUDIES ARE CARRIED OUT FOR GEOLOGICAL AND COAL UTILIZATION PURPOSES, AND PROVIDE INFORMATION ON- (1) CORRELATION OF COAL SEAMS, (2) ORIGIN, SEDIMENTATION AND LATERAL VARIATIONS IN COMPOSITION, QUALITY AND THICKNESS OF COAL SEAMS, (3) STRATIGRAPHY OF THE CARBONIFEROUS AND PERMIAN AND AGE DETERMINATIONS BY MEANS OF FOSSIL SPORES ON TERRESTRIAL DEPOSITS OF UPPER PALAEOZOIC AGE, (4) COAL PREPARATION, COAL CLEANING AND COAL CARBONIZATION, (5) ASPECTS OF COAL RESEARCH FOR WHICH MICROSCOPIC STUDIES ARE REQUIRED. SEE CARBONIFEROUS AND PERMIAN SPORES OF CANADA, GEOL. SURV. CAN., PAPER 67-11, 1967.

565. POLLETT, F., NEWFOUNDLAND DEPT. OF MINES, AGRICULTURE AND RESOURCES-

PEAT MOSS SURVEY, 1965-67.
INVESTIGATION OF PEAT MOSS IN NEWFOUNDLAND HAS BEEN CONDUCTED, INTERMITTENTLY, OVER A PERIOD OF THIRTEEN YEARS. A NUMBER OF WORKERS HAVE BEEN INVOLVED IN THE PROJECT. SEE PEAT MOSS IN NEWFOUNDLAND, MINERAL RESOURCES REPORT, NFLD. DEPT. MINES, AGR. AND RES. (IN PRESS).

General Problems

566. AGTERBERG, F.P., GEOL. SURV. CANADA-
COMPUTER ORIENTED ANALYSIS OF MINERAL DEPOSITS, 1964-.
METHODS OF MATHEMATICAL STATISTICS ARE APPLIED TO SETS OF MINING ASSAYS TO PREDICT THE AVERAGE ELEMENT CONCENTRATION VALUE FOR BLOCKS OF ORE AND TO CALCULATE THE PRECISION OF THE PREDICTED VALUES. SEE APPLICATION OF TREND ANALYSIS IN THE EVALUATION OF THE WHALESBACK MINE, NEWFOUNDLAND, SPECIAL VOLUME OF THE CANADIAN INSTITUTE MIN. MET. ON ORE RESERVE ESTIMATION AND GRADE CONTROL (IN PRESS).

567. ALLARD, G.O., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME), ATHENS UNIV.-
NORTHEAST QUARTER, LEMOINE TOWNSHIP, DISTRICT OF CHIBOUGAMAU, 1,000 FEET TO 1 INCH, 1966-68.
A DETAILED STUDY OF THE DORE LAKE COMPLEX AND THE CHIBOUGAMAU LAKE GRANITIC COMPLEX, AND DETAILED SURVEY OF STRUCTURES WHICH MIGHT BE WORTH EXPLORING FOR ORE DEPOSITS. SEE PRELIMINARY REPORT ON NORTHWEST QUARTER RINFRET TOWNSHIP, QUEBEC DEPT. NAT. RES., P.R. 567 (IN PRESS).

568. AMUKUN, S.E., UNIV. OF MANITOBA-
CARBONATE AND GEOTHERMOMETRY STUDY OF SOME QUARTZ VEINS IN THE PIONEER AREA, NORTHEASTERN MANITOBA, 1966-68- M.SC. THESIS.

569. ARNOLD, R.G., SASKATCHEWAN RESEARCH COUNCIL-
STUDIES OF ORE DEPOSITS, 1959-.
IN THIS WORK THE PHYSICO-CHEMICAL RELATIONSHIPS OF NATURAL AND SYNTHETIC ORE-FORMING MINERALS ARE STUDIED. SEE RANGE IN COMPOSITION AND STRUCTURE OF 82 NATURAL TERRESTRIAL PYRRHOTITES, CAN. MIN., VOL. 9, P. 31, 1967.

570. ASSARIA, L.-M., LAVAL UNIV.-
MERCURY HALOES, 1967-69.
SEE ANALYTICAL AND EXPERIMENTAL ASPECTS OF GEO-

CHEMICAL PROSPECTING FOR MERCURY (ABSTRACT), MINING ENGINEERING, VOL. 19, NO. 8, P. 26, 1967.

571. AUMENTO, F., GEOL. SURV. CANADA-
MINERAL RESOURCES OF THE SEA, 1967-.
THE MINERALOGICAL, CHEMICAL AND ECONOMIC ASPECTS OF MANGANESE DEPOSITS OF THE MORE ACCESSIBLE OCEANIC AREAS ARE UNDER INVESTIGATION. SEE THE MANGANESE PAVEMENT ON SAN PABLO SEAMOUNT, GEOL. SURV. CAN. (IN PRESS).

572. BAILES, A. H., UNIV. OF MANITOBA-
GEOLOGY AND GEOCHEMISTRY OF THE GOLD LAKE PROPERTY, RICE LAKE AREA, MANITOBA, 1966-67- M.SC. THESIS.

573. CHYI, L.L., CROCKET, J.H., MCMASTER UNIV.-
RADIOACTIVATION DETERMINATION OF PD, OS, IR AND AU IN ROCKS AND MINERALS OF THE MT. ALBERT UTRABASIC PLUTON, GASPE, QUEBEC, 1966-68, M.SC. THESIS (CHYI).
NEUTRON ACTIVATION ANALYSIS WAS USED TO MEASURE THE CONCENTRATIONS OF PD, OS, IR AND AU IN SILICATE AND OXIDE MINERALS IN THE MT. ALBERT ULTRABASIC PLUTON. ALSO PRECIOUS METAL FRACTION BETWEEN SERPENTINIZED AND UNSERPENTINIZED ROCKS WAS INVESTIGATED. ENRICHMENT TRENDS IN LATE CHROMITE SEGREGATIONS WAS ALSO STUDIED. RESULTS TO DATE INDICATE THAT ALL METALS ARE IN THE 1 TO 10 PPM RANGE, THAT THERE IS LITTLE FRACTIONATION BETWEEN OXIDES (CHROMITE) AND SILICATES AND THAT REDISTRIBUTION OF PRECIOUS METALS DURING SERPENTINIZATION IS UNLIKELY.

574. CLARK, A.H., QUEEN S UNIV.-
PHASE EQUILIBRIA IN ORE MINERAL SYSTEMS, 1967-.
EXPERIMENTAL WORK ON MINERAL SYSTEMS HAS BEEN INITIATED, WITH EMPHASIS ON LOW TEMPERATURE PHASE RELATIONSHIPS IN SULPHIDE-TYPE SYSTEMS, AND HIGHER TEMPERATURE INVESTIGATION OF SILICATE-OXIDE-SULPHIDE RELATIONSHIPS, PARTICULARLY THOSE FUNDAMENTAL TO AN UNDERSTANDING OF THE FORMATION OF ORE DEPOSITS ASSOCIATED WITH INTERMEDIATE-ACIDIC IGNEOUS ROCKS. SEE STABILITY FIELD OF MONOCLINIC PYRRHOTITE, TRANS. INSTN. MINING AND METALL., APPLIED EARTH SCIENCES SECTION, VOL. 75, B232-235, 1966.
RELATIONSHIPS BETWEEN SUPERGENE MINERAL ALTERATION AND GEOMORPHOLOGICAL HISTORY IN THE COPIAPO REGION OF THE SOUTHERN ATACAMA DESERT, CHILE, 1965-70.
THE CRUCIAL ROLE OF GEOMORPHOLOGY IN THE DEVELOPMENT AND PRESERVATION OF ECONOMICALLY-SIGNIFICANT

ENRICHMENT AND OXIDATION ZONES IN COPPER AND SILVER DEPOSITS, AND OF ZONES OF MARTITIZATION IN IRON DEPOSITS IS UNDER STUDY. ELECTRON MICROPROBE ANALYSIS IS SYSTEMATICALLY APPLIED TO THE CLARIFICATION OF THE COMPLEX MINERALOGICAL RELATIONSHIPS EXHIBITED BY THE ALTERATION ZONES. SEE RELATIONSHIPS BETWEEN SUPERGENE MINERAL ALTERATION AND GEOMORPHOLOGY, SOUTHERN ATACAMA DESERT, CHILE, TRANS. INSTN. MINING AND METALL., APPLIED EARTH SCIENCES SECTION, VOL. 76, PP. 89-96, 1967.

REGIONAL GEOCHRONOLOGY AND METALLOGENESIS OF THE ANDEAN MOBILE BELT, NORTHERN CHILE, 1966-70.

AN INVESTIGATION IN COOPERATION WITH N.J. SNELLING, INST. OF GEOL. SCIENCES, UNITED KINGDOM, OF THE ENVIRONMENT OF MINERALIZATION IN THE ANDEAN MOBILE BELT ON THE BASIS OF ISOTOPIC DATING OF INTRUSIVE, VOLCANIC, METAMORPHIC, AND SEDIMENTARY ROCKS AND THEIR ASSOCIATED ORE DEPOSITS. SEE IMPLICATIONS OF THE ISOTOPIC AGES OF IGNIMBRITE FLOWS, SOUTHERN ATACAMA DESERT, CHILE, NATURE (LOND.), VOL. 215, PP. 723-724, 1967.

575. CROCKET, J.H., HARRISS, R.C., STAINTON, M., MCMASTER UNIV.-
PD, IR AND AU CONCENTRATIONS IN MANGANESE NODULES FROM MARINE WATERS, 1967-68.

PD, IR AND AU HAVE BEEN DETERMINED BY NEUTRON ACTIVATION ANALYSIS IN MANGANESE NODULES FROM THE BLAKE PLATEAU, THE MID-PACIFIC RISE AND THE ARCTIC OCEAN. THE CONCENTRATION RANGE FOR THESE METALS IS 1 TO 10 PPM. THEY ARE HOMOGENEOUS WITH RESPECT TO AU AND PD. PD IS ENRICHED IN THE PACIFIC OCEAN NODULES BY A FACTOR OF 2 TO 3 RELATIVE TO THE ATLANTIC OCEAN NODULES.

576. DASTIDAR, P.G., UNIV. OF NEW BRUNSWICK-
CHEMISTRY OF APPALACHIAN ORE DEPOSITS, 1966-68- PH.D. THESIS.

MAJOR AND TRACE ELEMENT ANALYSIS OF CO-EXISTING SULPHIDE-OXIDE-GANGUE MINERAL ASSEMBLAGE TO DETERMINE CONCENTRATION AND DISTRIBUTION OF ELEMENTS WITHIN PARTICULAR MINERAL ASSEMBLAGES.

577. DELAVAULT, R.E., MANSON, R., BRABEC, D., UNIV. OF BRITISH COLUMBIA-
GEOCHEMISTRY OF ARSENIC, MERCURY AND SILVER, AND OTHER ELEMENTS, 1965-70, PH.D. THESIS (BRABEC).

STUDIES OF THE RELATIONSHIPS BETWEEN MINOR ELEMENTS IN ROCKS, AND THEIR CONSTITUENT MINERALS, AND IN THE CONTENTS OF SOILS AND PLANTS DERIVED FROM THESE ROCKS. SEE THE ARSENIC CONTENT OF DOUGLAS FIR AS A

GUIDE TO SOME GOLD AND SILVER DEPOSITS, PAPER PRESENTED CAN. INST. MIN. MET., PRINCE GEORGE MEETING, 1967.

578. DUGAS, J. AND OTHERS, QUEBEC DEPT. OF NATURAL RESOURCES-
METALLOGENIC MAP OF THE PROVINCE OF QUEBEC, 1965-.
LEGENDS FOR MINERAL DEPOSIT MAPS AND FOR METALLOGENIC MAPS HAVE BEEN DEVISED. CLASSIFICATION OF ORE DEPOSITS AND EXPERIMENTATION OF THE LEGENDS IS IN PROGRESS. A MINERAL DEPOSITS MAP OF THE NORANDA AREA BY J.I. SHARPE IS BEING PREPARED FOR PUBLICATION. SEE ANNOTATED BIBLIOGRAPHY ON METALLIC MINERALIZATION IN THE REGIONS OF NORANDA, MATAGAMI, VAL-D OR, CHIBOUGAMAU, QUEBEC DEPT. NAT. RES., SPECIAL PAPER 2.

579. DYCK, W., GEOL. SURV. CANADA-
LABORATORY STUDY OF TRACE ELEMENT COPRECIPITATION WITH HYDROUS IRON OXIDE, 1965-68.
ADSORPTION AND COPRECIPITATION STUDIES INVOLVING SILVER AND BOTH LABORATORY PREPARED AND NATURAL HYDROUS OXIDES OF IRON AND MANGANESE ARE BEING MADE. SEE THE ADSORPTION AND COPRECIPITATION OF SILVER ON HYDROUS FERRIC OXIDES, CAN. JOUR. OF CHEMISTRY (IN PRESS).

580. GALE, G.H., MEMORIAL UNIV. OF NEWFOUNDLAND-
DISTRIBUTION OF SOME TRACE ELEMENTS IN SELECTED SULFIDE DEPOSITS IN THE HALLS BAY AREA, NEWFOUNDLAND, 1967-68, M.SC. THESIS.
MINERAL SEPARATES FROM THE ORE ZONES AND WHOLE ROCK AND THE HOST ROCKS ARE ANALYZED BY AN ATOMIC ABSORPTION SPECTROPHOTOMETER.

581. EASTWOOD, G.E.P., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
BRITISH COLUMBIA MINERAL INVENTORY, 1967-.
AVAILABLE INFORMATION ON EACH PROPERTY IS ENTERED ON A COMPREHENSIVE PRINTED CARD. INITIALLY THE DATA ARE GATHERED FROM PUBLISHED AND UNPUBLISHED REPORTS, BUT THESE ARE INADEQUATE FOR MANY PROPERTIES, AND IT IS ANTICIPATED THAT SOME EXAMINATIONS WILL BE NECESSARY.

582. ECKSTRAND, N.L., MCGILL UNIV.-
FLOW OF PYRRHOTITE UNDER ELEVATED TEMPERATURE AND PRESSURE, 1966-, M.SC. THESIS.

583. GILL, J.E., DAVIES, R., MCGILL UNIV.-
SULPHIDE RESEARCH - STUDY OF COMMON SULPHIDES UNDER

ELEVATED TEMPERATURES AND PRESSURES AND THE RESULTING TEXTURES, 1959-.
SEE RECENT RESEARCH ON SULPHIDES AT MCGILL UNIVERSITY, BULL. CAN. INST. MINING AND METALL., PP. 994-996, 1965.

584. GROVE, E.W., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
GEOLOGY AND MINERAL DEPOSITS OF THE STEWART-LONG LAKE AREA, NORTHWESTERN BRITISH COLUMBIA, 1964-66.
EMPHASIS ON LITHOLOGY OF THE HAZELTON AND BOWSER GROUPS, THE RELATIONSHIP OF MINERAL DEPOSITS, THE DISTRIBUTION OF PLUTONS OF THE COAST CRYSTALLINE BELT, SPECIAL TRACE ELEMENT RELATIONSHIPS WITHIN AND BETWEEN MINERAL DEPOSITS. SEE B.C. REPT. OF THE MINISTER OF MINES, ANNUAL REPT. 1964-66.
GEOLOGY AND MINERAL DEPOSITS OF THE ANYOX AREA, BRITISH COLUMBIA, 1964-.
SPECIAL EMPHASIS ON STRUCTURAL RELATIONSHIPS, STUDY OF TRACE ELEMENT DISPERSION, MINERALIZATION, VARIATIONS WITHIN THE COAST CRYSTALLINE BELT. SEE GRANBY BAY AREA, B.C. REPT. OF THE MINISTER OF MINES, PP. 57-61, 1965.
GEOLOGY OF THE UNUK-BOWSER-BEAR RIVER PORTION OF THE STEWART COMPLEX, NORTHWESTERN BRITISH COLUMBIA, 1964-67.
STRUCTURE AND LITHOLOGY OF THE TAKLA-HAZELTON-BOWSER ASSEMBLAGES, DISTRIBUTION AND COMPOSITION OF THE COAST CRYSTALLINE BELT PLUTONS, SPECIAL EMPHASIS ON THE METAMORPHIC ZONES AND DISTRIBUTION OF MINERAL DEPOSITS.

585. HALE, W.E., CHRZANOWSKI, N., UNIV. OF NEW BRUNSWICK-
APPALACHIAN CARBONIFEROUS METALLOGENETIC EPOCH,1967-.

586. HORNBROOK, E.H., FORTESCUE, J.A.C., GEOL. SURV. CANADA-
BIOGEOCHEMICAL RESEARCH, 1963-.
SEE PROGRESS REPORT ON BIOGEOCHEMICAL RESEARCH AT THE GEOLOGICAL SURVEY OF CANADA- GEOL. SURV. CAN., PAPER 67-23 PART I (1967).

587. HUTCHINSON, R.W., UNIV. OF WESTERN ONTARIO-
NATURE AND ORIGIN OF PEGMATITES AND PEGMATITIC MINERAL DEPOSITS, 1967-.
THE MONTGARY, OR CHEMALLOY PEGMATITE IN SOUTH-EASTERN MANITOBA IS ONE OF THE WORLD S MOST COMPLEX RARE-ELEMENT PEGMATITES AND ON THIS BASIS ALONE MERITS BROADLY BASED INVESTIGATIONS. SUCH WORK IS NOW BEING INITIATED AND WILL CONTINUE FOR SOME TIME. SEE GEOLOGY

OF THE MONTGARY PEGMATITE, ECON. GEOL., VOL. 54, NO. 8, 1959.

588. JACKSON, E.V., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
WELSFORD GRANITE STUDY, 1966-68.
A COMPREHENSIVE SURVEY OF THE GEOLOGY, STRUCTURE, PETROGRAPHY, MINERALOGY AND CHEMISTRY OF ONE SQUARE MILE OF GRANITE IN COOPERATION WITH THE NEW BRUNSWICK RESEARCH AND PRODUCTIVITY COUNCIL TO DETERMINE THE FEASIBILITY OF A MUCH BROADER STUDY OF OTHER GRANITIC ROCKS OF NEW BRUNSWICK. SPECIAL EMPHASIS WILL BE PLACED ON THE APPLICATION OF THIS INFORMATION TO THE SEARCH FOR ASSOCIATED W, MO AND SN DEPOSITS. IT IS HOPED THAT ALL DATA WILL BE TREATED STATISTICALLY BY COMPUTER.

589. JOLLIFFE, A.W., QUEEN*S UNIV.-
THE GEOCHEMISTRY OF U-AG-CO-NI-BI VEINS, 1966-68.
A CHEMICAL AND MINERALOGICAL COMPARATIVE STUDY OF EXAMPLES OF THIS DEPOSIT TYPE (INCLUDING URANIUM-FREE SUBTYPES) OF WIDELY DIFFERENT AGES IN CANADA AND EUROPE.

590. JOLLIFFE, A.W., GEORGE, P.T., QUEEN*S UNIV.-
ELEMENT DISTRIBUTION PATTERNS IN ORE DEPOSITS OF THE PORCUPINE AREA, 1965-68, M.SC. THESIS (GEORGE).

591. KAIMAN, S., HUGHSON, M.R., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGICAL INVESTIGATION OF ORE SAMPLES - A CONTINUING PROJECT.
THE OBJECT OF THESE INVESTIGATIONS IS TO PROVIDE MINERALOGICAL INFORMATION IN CONNECTION WITH ORE TREATMENT STUDIES.

592. KELLY, R., IMREH, L., QUEBEC DEPT. OF NATURAL RESOURCES-
GEOCHEMICAL SURVEY OF THE LAKE KIPAWA AREA, COUNTY OF TEMISCAMING, 1967.
SAMPLING OF STREAM SEDIMENTS IN AN AREA WHERE A URANIUM-BEARING FORMATION IS KNOWN. SAMPLES WILL BE ANALYZED FOR A TOTAL OF 12 ELEMENTS. PRELIMINARY STUDIES OF THE RESULTS INDICATE ANOMALIES FOR URANIUM, COBALT AND ZINC.

593. KIRKHAM, R.V., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
GEOLOGY AND MINERAL DEPOSITS OF THE HUDSON BAY RANGE,

SMITHERS, BRITISH COLUMBIA, 1963-68, PH.D. THESIS. SEE GLACIAL GULCH MOLYBDENUM DEPOSIT, MINISTER OF MINES, B.C., ANN. REPT. 1966, PP. 86-90.

594. LANG, A.H., GEOL. SURV. CANADA-
ANALYSIS OF MANNER OF DISCOVERY AND OTHER ASPECTS OF CANADIAN MINES BEGINNING PRODUCTION IN 1956-66, 1966-67.
FOR THE NEW EDITION OF PROSPECTING IN CANADA, IT SEEMED DESIRABLE TO HAVE A REASONABLY ACCURATE APPRAISAL OF THE RELATIVE ROLES OF CONVENTIONAL, GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL METHODS IN THE DISCOVERY OF MINES BEGINNING PRODUCTION IN THE LAST DECADE, AND THE TIMES THAT ELAPSED BETWEEN DISCOVERY AND PRODUCTION. SEE 100 YEARS OF PROSPECTING IN CANADA, CAN. MIN. JOUR., MAY 1967.

595. LANGFORD, F.F., UNIV. OF SASKATCHEWAN-
ANALYSIS OF TRACE ELEMENT DATA.
SEE A METHOD TO EVALUATE THE PROBABILITY OF SUCCESS OF A GEOCHEMICAL SURVEY- ECON. GEOL., VOL. 60, NO. 2, 1965.

596. LASALLE, P., QUEBEC DEPT. OF NATURAL RESOURCES-
RECONNAISSANCE STUDY OF HEAVY MINERALS OF THE LOWER PERIBONKA RIVER, LAKE ST-JOHN, QUEBEC, 1967-70.

597. LEE, H.A., LANDY, R.A., GEOL. SURV. CANADA-
GLACIOFOCUS, 1962-.
THE PURPOSE IS TO DEVELOP A GLACIAL GEOLOGICAL METHOD OF MINERAL EXPLORATION. INCLUDES STUDIES OF TILL-BEDROCK LITHOLOGIC, HEAVY MINERAL, CHEMICAL RELATIONSHIP, ESKER BEDROCK LITHOLOGIC, HEAVY MINERAL, CHEMICAL RELATIONSHIP AND ESKERINE SEDIMENTATION. SEE GEOL. SURV. CAN., PAPER 68-1A.

598. LEECH, G.B., GEOL. SURV. CANADA-
METALLOGENIC MAP OF CANADA, 1967-.
THE METALLOGENIC MAP OF CANADA IS A COOPERATIVE PROJECT OF THE GEOLOGICAL SURVEY OF CANADA AND THE VARIOUS PROVINCES WORKING THROUGH THE CANADIAN METALLOGENIC MAP COMMITTEE, WHOSE IMMEDIATE OBJECTIVE IS TO SUPPLY DATA FOR A METALLOGENIC MAP OF NORTH AMERICA, WHICH IS BEING SPONSORED BY THE INTERNATIONAL GEOLOGICAL CONGRESS.

599. LIU, C., MEMORIAL UNIV. OF NEWFOUNDLAND-
GEOCHEMICAL SOIL SURVEY IN SPRINGDALE AREA, NORTH-

CENTRAL NEWFOUNDLAND, 1967-68, M.SC. THESIS.
INCLUDES INVESTIGATION OF THE DISTRIBUTION OF SOME HEAVY ELEMENTS IN BOG SOILS, PREPARATION OF A GEOCHEMICAL DATA MAP, INTERPRETIVE MAP AND GEOLOGICAL MAP OF THE AREA AND SOME INDICATIONS, IF POSSIBLE, OF PROBABLE MINERALIZATION IN THE BEDROCK.

600. LONGE, R.B., MCGILL UNIV.-
GENESIS OF VOLCANIC SULPHIDES, 1965-68, PH.D. THESIS.

601. MACINTOSH, J.A., QUEBEC DEPT. OF NATURAL RESOURCES-
NORTHWEST QUARTER, CLERICY TOWNSHIP, DISTRICT OF ROUYN-NORANDA, 1,000 FEET TO 1 INCH, 1967-68.
STUDY OF AN AREA UNDERLAIN BY MAFIC TO FELSIC FLOW AND PYROCLASTIC ROCKS AND ACID INTRUSIONS. THIS AREA HAS BEEN PROSPECTED SINCE 1920, MOST OF THE WORK HAVING BEEN DONE BETWEEN 1955 AND 1966, THERE ARE INDICATIONS OF GOLD, ZINC AND COPPER.

602. MILLIGAN, G.C., WHITE, B., CHATTERJEE, A.K., DALHOUSIE UNIV.-
INVESTIGATIONS IN GEORGE RIVER SERIES, CAPE BRETON, NOVA SCOTIA, 1962-- PH.D. THESIS (CHATTERJEE).
AN INVESTIGATION OF FEATURES OF KNOWN SULPHIDE OCCURRENCES THAT MIGHT BE USED AS A GUIDE IN THE SEARCH FOR OREBODIES. A PRELIMINARY EXAMINATION OF STRUCTURE, STRATIGRAPHY, AND METAMORPHISM HAS BEEN FOUND NECESSARY AND IS NOW APPROACHING COMPLETION.

603. MOORE, J.C.G., MOUNT ALLISON UNIV.-
ROCK GEOCHEMISTRY AS AN AID IN THE SEARCH FOR MASSIVE SULPHIDE OREBODIES IN NEW BRUNSWICK, 1963-68.
MERCURY SEEMS TO BE THE MOST PROMISING ELEMENT.

604. MORTON, R.D., ROBINSON, B., UNIV. OF ALBERTA-
STUDIES ON THE ORE DEPOSITS OF THE GREAT BEAR LAKE REGION, 1967-70, PH.D. THESIS (ROBINSON).
STUDIES OF THE METALLIFEROUS (AG-U-CU-BI) DEPOSITS ASSOCIATED WITH THE METAMORPHIC ROCKS ADJACENT TO GREAT BEAR LAKE. THE INITIAL PHASE WILL INVOLVE A DETAILED STUDY OF THE ECHO BAY MINE, N.W.T.

605. NICKEL, E.H., PETRUK, W., CABRI, L.J., HARRIS, D.C., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGICAL INVESTIGATION OF CANADIAN ORES IN CONJUNCTION WITH MINERAL PROCESSING RESEARCH, 1953-.

MINERAL DEPOSITS

A WIDE RANGE OF ORES IS CURRENTLY BEING STUDIED MINERALOGICALLY IN CONNECTION WITH THE DEVELOPMENT AND EXPLORATION OF CANADIAN ORE DEPOSITS BY THE MINING INDUSTRY. MUCH OF THE DATA OBTAINED THROUGH STUDIES ARE ALSO USEFUL IN THE FIELD OF ECONOMIC GEOLOGY.

606. PAPEZIK, V.S., GIBBONS, R.V., MEMORIAL UNIV. OF NEWFOUNDLAND-
STUDY OF VOLCANIC ROCKS AND ASSOCIATED ARSENIC-ANTIMONY MINERALS NEAR MORETON S HARBOUR, NOTRE DAME BAY, NEWFOUNDLAND, 1967-69- M.SC. THESIS (GIBBONS).
THE AREA NEAR MORETON S HARBOUR APPEARS TO BE ONE OF SEVERAL MAJOR VOLCANIC CENTERS IN THE ORDOVICIAN VOLCANIC BELT OF NEWFOUNDLAND. PROMINENT VEINS CONTAINING AS-SB MINERALS SHOW SPATIAL RELATIONSHIP TO NUMEROUS DYKES CUTTING BASIC VOLCANICS. THE SEQUENCE OF VOLCANIC ACTIVITY AND MINERALIZATION IS UNDER STUDY. X-RAY ANALYSIS OF ARSENOPYRITE WILL BE USED TO INDICATE P-T CONDITIONS OF MINERALIZATION. SEE NATIVE ARSENIC IN NEWFOUNDLAND- CAN. MINER., VOL.9, PT. 1, PP. 101-108, 1967.

607. POTTER, R.R., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
METALLOGENIC INVESTIGATIONS IN NEW BRUNSWICK, 1965-70.
AFTER COMPLETION OF THE NEW GEOLOGICAL MAP OF NEW BRUNSWICK, METALLOGENIC INVESTIGATIONS WILL BE CONTINUED IN THE ZONE OF ORDOVICIAN AND SILURIAN ROCKS BETWEEN WOODSTOCK AND BATHURST. ALL MINERAL OCCURRENCES WILL BE EXAMINED, AND THE REGIONAL FACTORS CONTROLLING THEIR DISTRIBUTION STUDIED.

608. PROCYSHYN, E.L., MCCARTNEY, W.D., FARRAR, E., QUEEN*S UNIV.-
METALLOGENY OF PART OF SOUTH-CENTRAL BRITISH COLUMBIA, 1967-70, PH.D. THESIS (PROCYSHYN).
THE STUDY SEEKS TO CLASSIFY AND CORRELATE MINERAL DEPOSITS WITH THEIR TECTONIC AND STRATIGRAPHIC SETTING AND THE IGNEOUS HISTORY OF THE REGION AND WILL INCLUDE ABSOLUTE AGE DETERMINATIONS ON CRITICAL IGNEOUS INTRUSIVES AND ALTERATION ZONES RELATED TO MINERAL DEPOSITS. SEE METALLOGENY OF POST-PRECAMBRIAN GEOSYNCLINES, GEOL. SURV. CAN., PAPER 65-6, 1965.

609. RIPLEY, L.G., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROWTH OF SINGLE CRYSTALS OF BASE METAL SULPHIDES OF CONTROLLED COMPOSITION, 1964-.
SINGLE CRYSTALS OF WURTZITE AND SPHALERITE OF CENTIMETER SIZE ARE BEING GROWN BY VAPOUR TRANSPORT AND CHEMICAL VAPOUR TRANSPORT TECHNIQUES RESPECTIVELY.

CURRENT ATTEMPTS ARE BEING MADE TO GROW SINGLE CRYSTALS OF COPPER SULPHIDES, IRON SULPHIDES, AND COPPER-IRON SULPHIDES.

610. ROSCOE, S.M., GEOL. SURV. CANADA-
METALLOGENIC STUDY, LAKE SUPERIOR-CHIBOUGAMAU, 1963-69.
A COMPILATION OF LEAD ISOTOPE DATA AND DISCUSSION OF METALLOGENIC EPOCHS IN THE SOUTHEASTERN CANADIAN SHIELD IS IN PREPARATION. SEE GEOCHEMICAL AND ISOTOPIC STUDIES, NORANDA AND MATTAGAMI AREAS, BULL. CAN. INST. MIN. AND MET., VOL. 58, NO. 641, PP. 965-971, 1965.

611. ROSE, E.R., GEOL. SURV. CANADA-
GEOLOGY OF RARE EARTH DEPOSITS OF CANADA, 1967-72.
THE SUBJECT CURRENTLY UNDER INVESTIGATION IS THE DEVELOPMENT OF FIELD TESTS FOR THE DETECTION AND IDENTIFICATION OF THE RARE EARTH ELEMENTS. SEE RARE EARTHS OF THE GRENVILLE SUBPROVINCE, ONTARIO AND QUEBEC, GEOL. SURV. CAN., PAPER 59-10, 1960.

612. RUITENBERG, A.A., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
GEOLOGY OF MINERALIZED BELT ON THE MASCARENE PENINSULA, AND THE COASTAL AREA BETWEEN DIGDEGUASH HARBOUR AND ST. GEORGE, CHARLOTTE COUNTY, NEW BRUNSWICK, 1967-68.

613. SANGSTER, A.L., MCCARTNEY, W.D., QUEEN*S UNIV.-
METALLOGENIC STUDY IN THE GRENVILLE PROVINCE, EASTERN ONTARIO, 1967-69, PH.D. THESIS (SANGSTER).
THE FIRST OF A PROPOSED SERIES OF STUDIES OF SELECTED CLASSES OF MINERAL DEPOSITS IN GRENVILLE ROCKS.

614. SCHWARCZ, H.P., SCHINDLER, J.N., MCMASTER UNIV.-
ISOTOPIC COMPOSITION OF SULPHUR IN SEDIMENTARY ROCKS AND STRATIFORM ORE DEPOSITS, 1967-70, PH.D. THESIS (SCHINDLER).
STUDY OF ISOTOPIC COMPOSITION OF SULPHIDES IN SHALES, SANDSTONES AND VOLCANIC ROCKS OF VARIOUS AGES. SEARCH FOR SECULAR TREND IN S34/S32 RATIO PARALLEL TO THAT OBTAINED FOR EVAPORITIC SULPHATES.

615. SERGIADES, A.O., HOQUE, M., ONTARIO DEPT. OF MINES-
DATA PROCESSING OF METAL DEPOSITS OF ONTARIO, 1967-.
THE PURPOSE IS TO CORRELATE THE ECONOMIC GEOLOGY OF ORE DEPOSITS WITH THE GENERAL GEOLOGY OF SURROUNDING AREA IN ORDER TO ASSESS THE POTENTIAL OF NEW AREAS

MINERAL DEPOSITS

WHERE ONLY GENERAL GEOLOGY IS KNOWN.

616. SHERWOOD, H.G., UNIV. OF MANITOBA-
QUANTITATIVE MINERALOGY OF ORE DEPOSITS, 1965-67- PH.D. THESIS.

617. SIMS, W.A., MOUNT ALLISON UNIV.-
HEAVY MINERALS AS PROSPECTING GUIDES, GASPE, QUEBEC, 1964-68.

618. SMITHERINGALE, W.G., AND GRADUATE STUDENTS, MEMORIAL UNIV. OF NEWFOUNDLAND-
DISTRIBUTION OF TRACE ELEMENTS IN AND AROUND MINERAL DEPOSITS, 1966-.
DIFFERENT TYPES OF DEPOSITS IN DIFFERENT ENVIRONMENTS WILL BE INVESTIGATED.

619. SUTHERLAND-BROWN, A., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
NATURE AND DISTRIBUTION OF COPPER AND MOLYBDENUM DEPOSITS IN BRITISH COLUMBIA, 1965-.
INVESTIGATION OF MERCURY HALOS, 1965-.
SEE INVESTIGATION OF MERCURY DISPERSION HALOS AROUND MINERAL DEPOSITS IN CENTRAL BRITISH COLUMBIA, SYMPOSIUM ON GEOCHEMICAL PROSPECTING, GEOL. SURV. CAN., PAPER 66-54, 1967.

620. THORPE, R., GEOL. SURV. CANADA-
STUDY OF MINERAL DEPOSITS IN THE NORTHWEST TERRITORES, 1965-.
SEE MINERAL INDUSTRY OF THE NORTHWEST TERRITORIES 1965, GEOL. SURV. CAN., PAPER 66-52, 1966.
METALLOGENIC MAP OF THE NORTHWEST TERRITORIES, 1967.
PREPARATION OF THE METALLOGENIC MAP HAS INCLUDED THE COMPILATION OF AN INDEX OF MINERAL OCCURRENCES.

621. TUREK, A., HAUGH, I., MCRITCHIE, D., WEBER, W., SCOATES, R.F.J., PHILLIPS, K.A., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES- ANDERSON, D.T., BRISBIN, W.C., CHURCH, N.B., HALL, D.H., TURNOCK, A.C., WILSON, H.D.B., AND GRADUATE STUDENTS, UNIV. OF MANITOBA-
PROJECT PIONEER, 1965-71.
A COOPERATIVE COMPREHENSIVE FIELD AND LABORATORY STUDY OF THE RICE LAKE-BERESFORD LAKE AREA OF SOUTHEASTERN MANITOBA. INCLUDES DETAILED MAPPING, PHOTOGEOLOGIC INTERPRETATION, AEROMAGNETIC INTERPRETATION,

DEEP CRUSTAL SEISMIC SURVEY, GRAVITY, ROCK MAGNETISM, REGIONAL AND LOCAL DETAILED STRUCTURAL ANALYSES, GAMMA-RAY SPECTROMETRY, PETROLOGY, MINERALOGY, CHEMISTRY, TRACE ELEMENTS, GEOCHRONOLOGY, ECONOMIC GEOLOGY, AND STUDIES OF VOLCANICITY, SEDIMENTATION, AND METAMORPHISM.

622. USIK, L. (MISS), GEOL. SURV. CANADA-
GEOBOTANY, 1967-.
AN INVESTIGATION OF THE SCOPE, FEASIBILITY, AND APPLICATION OF GEOBOTANY IN CANADA. CONSIDERATION IS BEING GIVEN PRIMARILY TO DEVELOPING GEOBOTANY AS AN ADDITIONAL EXPLORATION TOOL IN THE SEARCH FOR MINERAL DEPOSITS. SEE A REPORT ON CIRCULAR FEATURES IN ORGANIC TERRAIN, GEOL. SURV. CAN., PAPER 66-2, 1966.

623. VAN DE POLL, H.W., RUITENBERG, A.A., HARRIS, F.R., TREMBLAY, J.H., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
GEOLOGY OF THE MOUNT PLEASANT AREA, NEW BRUNSWICK, 1962-67.
IN THIS PUBLICATION A NEW STRATIGRAPHIC TYPE SECTION FOR CARBONIFEROUS ROCKS ALONG THE SOUTHERN MARGIN OF THE CENTRAL BASIN IS PROPOSED. VERTICAL ZONAL VARIATION IN THE MOUNT PLEASANT QUARTZ LATITE ASH-FLOW TUFF DEPOSITS ARE DESCRIBED AND A CALDERA ORIGIN FOR THE HEART-SHAPED SURFACE OUTCROP OF THE SO-CALLED MOUNT PLEASANT APPENDAGE IS PROPOSED. THE ECONOMIC ASPECTS OF THE AREA ARE DISCUSSED AND AREAS OF INTEREST OUTLINED FOR FURTHER EXPLORATION FOR TIN-MOLYBDENUM-BASE METAL MINERALIZATION. SEE CARBONIFEROUS VOLCANIC AND SEDIMENTARY ROCKS OF THE MOUNT PLEASANT AREA, NEW BRUNSWICK, REPORT OF INVESTIGATION NO. 3, DEPARTMENT OF NATURAL RESOURCES, NEW BRUNSWICK.

624. WOLFE, W.J., NEW BRUNSWCK DEPT. OF NATURAL RESOURCES-
REGIONAL GEOCHEMISTRY OF STREAM AND SPRING SEDIMENTS, SOUTHWESTERN NEW BRUNSWICK, 1965-70.
SYSTEMATIC REGIONAL SAMPLING OF STREAM AND SPRING SEDIMENTS, AND ANALYSIS FOR 8 TO 10 TRACE ELEMENTS IS FOLLOWED BY DETAILED EXAMINATION OF SPECIFIC AREAS FOR THE PURPOSES OF- (A) DEVELOPING CRITERIA FOR DISTINGUSHING BETWEEN SIGNIFICANT AND NON-SIGNIFICANT ANOMALIES, AND (B) OBTAINING FUNDAMENTAL INFORMATION ON THE MOBILITY OF ELEMENTS IN THE SURFICIAL ENVIRONMENT. SEE THE CU, PB, ZN, NI, AG, MN, SN, MO AND AS CONTENTS OF STREAM AND SPRING SEDIMENTS, SOUTHWESTERN CHARLOTTE COUNTY, NEW BRUNSWCK, MINES DIVISION, NEW BRUNSWICK DEPARTMENT OF NATURAL RESOURCES, REPORT OF INVESTIGATION NO. 4.

MINERALOGY

Specific Minerals

625. APPLEYARD, E.C., UNIV. OF WATERLOO-
SILICA-POOR AMPHIBOLES FROM IRON-RICH CALC-SILICATE GNEISS NEAR QUADERVILLE, LYNDOCH TOWNSHIP, ONTARIO, 1967-69.
IN THE ROCK UNDER STUDY, ONE OF THE MAJOR CONSTITUENTS IS AN AMPHIBOLE WITH AN APPARENTLY UNIQUELY LOW SILICA CONTENT. THE CURRENT STUDY TREATS THE PARAGENESIS AND CRYSTAL CHEMISTRY OF THIS MINERAL.

626. AUMENTO, F., GEOL. SURV. CANADA-
SERPENTINE MINERALOGY, 1965-69.
TECHNIQUES FOR SEMI-QUANTITATIVE IDENTIFICATION OF THE COMPONENTS IN MIXTURES OF POLYMORPHS OF SERPENTINE HAVE BEEN EVALUATED AND ARE NOW BEING USED TO STUDY THE DISTRIBUTION OF SERPENTINE MINERALS IN ULTRABASIC INTRUSIONS OF DIFFERENT AGES. SEE A SERPENTINE MINERAL SHOWING DIVERSE STRAIN-RELIEF MECHANISMS, AMER. MINERAL., VOL. 52, NO. 9/10, 1967.

627. BARRETT, V.A., UNIV. OF MANITOBA-
AN EXAMINATION AND INTERPRETATION OF THE CRYSTAL STRUCTURE OF SODALITE, 3NAA1SI04.NAC1, 1967-68-
M.SC. THESIS.

628. BERRY, L.G., KRAUSE, J.B., QUEEN*S UNIV.-
STUDY OF SULPHO-SALT MINERALS AND OF PARARAMMELOBERGITE - A CONTINUING PROJECT.
CONTINUING STUDY OF SULPHO-SALT MINERAL SPECIMENS. A FURTHER ATTEMPT AT REFINING THE CRYSTAL STRUCTURE OF PARARAMMELSBERGITE WILL BE MADE USING A NEW COMPUTER PROGRAMME AND A REVISED TRIAL STRUCTURE. SEE CRYSTALLOGRAPHY OF HATCHITE, CAN. MINERAL., VOL. 8, P. 661 (ABSTRACT).

629. BURLEY, B.J., CHEN, S.S.M., MCMASTER UNIV.-
STRUCTURE OF CANCRINITE (HYDROXY), 1967-69, M.SC. THESIS (CHEN).
SEE STUDIES ON CANCRINITE. 1. POLYMORPHISM IN SODIUM CARBONATE RICH CANCRINITE-NATRODAVYNE, CAN. MINERALOGIST, VOL. 7, PT. 4, PP. 631-642, 1963.

630. BURLEY, B.J., LIN, S.B., MCMASTER UNIV.-
CRYSTAL CHEMISTRY OF SCAPOLITES, 1967-70, PH.D. THESIS (LIN).
REFINEMENT OF 17 ISOMORPHOUS SCAPOLITE STRUCTURES WILL BE ATTEMPTED ON A THREE DIMENSIONAL SINGLE

CRYSTAL GONIOMETER. HIGH TEMPERATURE DIFFRACTOMETRY WILL ALSO BE ATTEMPTED.

631. EDGAR, A.D., UNIV. OF WESTERN ONTARIO, HAMILTON, D.L., MANCHESTER UNIV.-
X-RAY METHODS OF DETERMINING TERNARY FELDSPAR COMPOSITIONS, 1965-68.

632. FAWCETT, J.J., JAMES, R.S., UNIV. OF TORONTO-
PHASE RELATIONS OF INTERMEDIATE MG-FE CHLORITES, 1966-69.
SEE PHASE RELATIONSHIPS OF CHLORITES IN THE SYSTEM MGO-AL2O3-SIO2- H2O, AMER. MINERAL., VOL. 51, PP. 353-380, 1966.

633. FERGUSON, R.B., UNIV. OF MANITOBA-
STRUCTURAL STUDIES ON THE FELDSPARS, 1950 -.
IN 1967, COMPUTER PROGRAMS WERE WRITTEN TO CALCULATE THE ELECTROSTATIC CHARGE DISTRIBUTIONS IN THE END-MEMBER FELDSPARS. CALCULATIONS WERE COMPLETED FOR LOW AND HIGH ALBITE WITH SATISFACTORY RESULTS, AND THESE ARE BEING WRITTEN UP FOR PUBLICATION. THE CALCULATIONS WILL BE EXTENDED TO OTHER FELDSPAR STRUCTURES. SEE A THREE-DIMENSIONAL REFINEMENT OF THE STRUCTURE OF LOW ALBITE - NORSK GEOLOGISK TIDSSKRIFT, 1968, VOL. 42, PP. 152-157.

634. GRATEROL, M., HARRIS, D.C., UNIV. OF TORONTO-
STUDIES OF MINERAL SULPHO-SALTS, 1963-.
SEE STUDIES OF MINERAL SULPHO-SALTS- XX - BERRYITE, A NEW SPECIES, CANADIAN MINERAL., VOL. 8, PT. 4, PP. 407-413, 1966.

635. HAUGHTON, D.R., SHAW, D.M., MCMASTER UNIV.-
MINERALOGY OF SCAPOLITE, 1965-68, M.SC. THESIS (HAUGHTON).
STUDY OF THE CRYSTAL CHEMISTRY AND PARAGENESIS OF SCAPOLITE. SEE THE GEOCHEMISTRY OF SCAPOLITE, JOUR. PETROLOGY, VOL. 1, PP. 218-285, 1960.

636. HOGARTH, D.D., UNIV. OF OTTAWA-
OPTICAL ABSORPTION IN PHLOGOPITE FROM QUEBEC, 1964-68.

637. JAMBOR, J.L., GEOL. SURV. CANADA-
SULFOSALTS OF THE PLAGIONITE GROUP, 1967-68.
INCLUDES STUDY OF A NEW MINERAL OF THE PLAGIONITE

MINERALOGY

GROUP AND DISCUSSION OF THE SYSTEMATIC VARIATION IN PROPERTIES AMONG MEMBERS OF THE GROUP.

638. JAMBOR, J.L., SABINA, (MISS) A.P., PLANT, A.G., GEOL. SURV. CANADA-
NEW CARBONATE MINERALS FROM ST. MICHEL, QUEBEC, 1966-69.

639. KINGSTON, P.W., BERRY, L.G., QUEEN*S UNIV.-
STUDY OF GLAUCODOT AND ALLOCLASITE, 1967-69, PH.D. THESIS (KINGSTON).
MINERALOGICAL, CRYSTALLOCHEMICAL AND CRYSTAL STRUCTURE STUDIES OF GLAUCODOT, ALLOCLASITE AND ASSOCIATED MINERALS.

640. LEDOUX, R.L., CIMON, J., LAVAL UNIV.-
FORMATION OF KAOLIN MINERALS FROM ANORTHOSITE AT CHATEAU-RICHER, QUEBEC, 1965-68, M.SC. THESIS (CIMON).
AN INVESTIGATION OF THE NATURE OF THE KAOLIN MINERALS, THEIR HYDRATION AND DEHYDRATION BEHAVIOUR, THE ORDERING OF THEIR STRUCTURE, AND THEIR GENESIS.

641. LIN, H., BERRY, L.G., QUEEN*S UNIV.-
STUDY OF A NEW SILICATE MINERAL FROM KIPAWA, QUEBEC, 1967-68.

642. MAKOVICKY, E., MCGILL UNIV.-
CRYSTALLOGRAPHY OF CYLINDRITE, 1967-69, PH.D. THESIS.

643. MCLEOD, C.R., GEOL. SURV. CANADA-
GEOLOGY OF IRON DEPOSITS IN CANADA - OCCURRENCES OF MAGHEMITE, 1967.
THE OBJECTIVE IS TO CONFIRM THE PRESENCE OF MAGHEMITE IN STEEP ROCK LAKE **BUCKSHOT ORE** AND MAGNETITE-HEMATITE DEPOSITS IN BAFFIN ISLAND.

644. PERRAULT, G., ECOLE POLYTECHNIQUE-
THE STRUCTURE OF EUCOLITE, 1965-68.
CHEMICAL COMPOSITION OF EUCOLITE IS NOW ON HAND.
THE CRYSTAL CHEMISTRY OF NIOBIUM, 1968-75.
INCLUDES BIBLIOGRAPHIC STUDY AND COMPILATION AND ACQUISITION OF NEW DATA ON SPECIFIC MATERIALS INCLUDING NB2O5, THE SILICATE OF NIOBIUM, ALLOYS OF NIOBIUM, ETC.

MINERALOGY

645. PERRAULT, G., LE PAGE, Y., ECOLE POLYTECHNIQUE-
DIFFRACTOMETRY OF CLINOPYROXENES, 1962-68, M.A.SC. THESIS (LE PAGE).

646. RIMSAITE, J.Y.H. (MISS), GEOL. SURV. CANADA-
MINERALOGICAL STUDIES OF MICAS AND PETROLOGICAL STUDIES OF HOST ROCK, 1959-.
RESEARCH CONTINUES ON MICAS FROM UNCOMMON ROCKS (NEPHELINE SYENITE, CARBONATITE, LI-PEGMATITE) AND ON RETENTION AND ADSORPTION OF ARGON AS A FUNCTION OF DEHYDRATION CONDITIONS OF BIOTITE, PHOLOGOPITE AND MUSCOVITE. GEOCHEMICAL, MINERALOGICAL AND PETROLOGICAL DATA ON POLYMICA ROCKS ARE BEING COMPILED. SEE STUDIES OF ROCK FORMING MICAS, GEOL. SURV. CAN., BULL. 149, 1967.

647. SCOTT, J.D., BERRY, L.G., QUEEN*S UNIV.-
STUDY OF FRANCKEITE AND CYLINDRITE, 1967-69, PH.D. THESIS (SCOTT).
MINERALOGICAL, CRYSTALLOCHEMICAL AND CRYSTAL STRUCTURE STUDIES OF FRANCKEITE, CYLINDRITE AND ASSOCIATED MINERALS.

648. SMITH, D.G.W., UNIV. OF ALBERTA-
AN ELECTRONPROBE STUDY OF PSEUDOBROOKITES FROM VARIOUS GEOLOGICAL ENVIRONMENTS, 1967-.
EARLY STUDIES OF THE COMPOSITION OF PSEUDO-BROOKITES FROM A HIGH TEMPERATURE THERMAL METAMORPHIC ENVIRONMENT HAVE SHOWN THAT THE COMPOSITION OF THE MINERAL VARIES VERY SIGIFICANTLY FROM THE IDEAL FORMULA FE2TIO5.

649. SUBBARAO, K.V., FERGUSON, R.B., TURNOCK, A.C., UNIV OF MANITOBA-
COMPOSITION OF ZONES, STRUCTURAL STATE, AND RELATIONSHIPS BETWEEN TWINNING AND ZONING IN IGNEOUS PLAGIOCLASE, 1967-69.
STUDY OF THE ORIGIN OF TWIN-ZONE RELATIONSHIP OF FELDSPARS, WHICH IS STILL ONE OF THE UNSOLVED PROBLEMS IN IGNEOUS PETROLOGY. THE METHODS WILL BE OPTICAL AND X-RAY, STARTING WITH PLAGIOCLASE FROM A QUARTZ DIORITE STOCK FROM NORTHERN MANITOBA (CHURCHILL BLOCK).

650. SYGUSCH, J.E., MCGILL UNIV.-
ISOMORPHISM IN BETA ALUMS, 1967-69, M.SC. THESIS.

MINERALOGY

651. TREMBATH, L.T., UNIV. OF NEW BRUNSWICK-
ZEOLITES IN THOLEIITIC BASALTS, 1965-69.
CORRELATION OF CO-EXISTING AND TOTAL ZEOLITE ASSEMBLAGES IN A GIVEN ENVIRONMENT WITH THE HOST ROCK COMPOSITION IN AN ATTEMPT TO GAIN INFORMATION ON CONDITIONS OF LATE STAGE CRYSTALLIZATION IN A THOLEIITE SILL.

652. VAN LOAN, P.R., MCGILL UNIV.-
CRYSTAL STRUCTURE OF AENIGMATITE, 1960-68, PH.D. THESIS.

General Problems

653. BEATON, W.D., MCGILL UNIV.-
TRACE ELEMENT PARTITION IN SULPHIDES, 1962-68, PH.D. THESIS.

654. CABRI, L.J., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
PHASE EQUILIBRIUM STUDIES IN THE CU-FE-S AND RELATED SYSTEMS, 1965-.
TO CLOSELY DETERMINE EQUILIBRIUM RELATIONS, STABILITY FIELDS AND CONDITIONS FOR METASTABLE RELATIONS IN SULPHIDE SYSTEMS, AND THEREBY TO FURTHER THE KNOWLEDGE OF SULPHIDE ORE DEPOSITS. SEE A NEW COPPER-IRON SULFIDE, ECONOMIC GEOLOGY, VOL. 62, 1967 (IN PRESS).
INVESTIGATION OF PLATINUM GROUP MINERALS, 1965-66.
SEE NEW PALLADIUM MINERALS FROM NORIL SK WESTERN SIBERIA, CANADIAN MINERALOGIST, VOL. 8, PT. 5, PP. 541-550, 1966.
SULPHIDE SYNTHESIS, 1964-.
SULPHIDE MINERALS OF CLOSELY CONTROLLED COMPOSITIONS ARE SYNTHESIZED TO PROVIDE MATERIAL FOR OTHER INVESTIGATIONS, AND TO PROVIDE FUNDAMENTAL DATA ON PHASE EQUILIBRIUM RELATIONSHIPS IN CERTAIN SULPHIDE SYSTEMS. A SERIES OF LOW-IRON SPHALERITES WERE SUCCESSFULLY SYNTHESIZED FOR OTHER INVESTIGATIONS AND AT PRESENT HIGH-IRON SPHALERITES ARE BEING SYNTHESIZED. SEE IRON-IRON INTERACTION IN IRON-CONTAINING ZINC SULFIDE, ANNUAL MEETING, GEOL. SOC. AMER., 1967 (ABSTRACT).

655. DE\N, R.S., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGY OF ARGILLACEOUS MATERIALS IN CANADA, 1958-.
SEE MINERALOGICAL EXAMINATION OF SANDSTONE AND SILTSTONE, THELON FORMATION (PROTEROZOIC), NORTHWEST

TERRITORIES, MINES BRANCH IR 67-28.

656. DONALDSON, J.A., GEOL. SURV. CANADA, DEAN, R.S., MINES BRANCH-
STUDY OF CLAY MINERALS IN PROTEROZOIC SEDIMENTS, 1968-.
INCLUDES ANALYSIS OF SANDSTONE AND SILTSTONE SANDS FROM UNITS OF THE DUBAWNT AND GOULBURN GROUPS, AND ATHABASCA AND MARTIN FORMATIONS.

657. EDGAR, A.D., HUTCHINSON, R.W., ARMSTRONG, C.W., UNIV. OF WESTERN ONTARIO-
MINERALOGY AND PETROLOGY OF LI-BEARING PEGMATITES, 1966-68, PH.D. THESIS (ARMSTRONG).
SEE MINER. MAG., VOL. 36, PP. 578-582.

658. FAYE, G.H., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
CORRELATION OF ABSORPTION SPECTRA WITH STRUCTURES OF INORGANIC COMPLEXES AND MINERALS, 1965-.
OPTICAL ABSORPTION STUDIES ARE ALSO BEING MADE ON CHLORITE, BIOTITE, PHLOGOPITE, VIVIANITE, ERYTHITE, TOURMALINE AND CORDIERITE. SEE THE OPTICAL ABSORPTION SPECTRA OF CERTAIN TRANSITION METAL IONS IN MUSCOVITE, LEPIDOLITE AND FUCHSITE, CAN. J. EARTH SC., 1967 (IN PRESS).

659. FLEET, M.E., UNIV. OF WESTERN ONTARIO-
STRUCTURAL CHEMISTRY OF THE IRON, ZINC SULPHIDE MINERALS, 1966-70.

660. GABE, E.J., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
COMPUTER PROGRAMS FOR X-RAY CRYSTALLOGRAPHY, 1966-.
A COMPREHENSIVE SERIES OF PROGRAMS FOR X-RAY CRYSTALLOGRAPHY AND CRYSTAL STRUCTURE ANALYSIS IS BEING DEVELOPED. COMPLETED PROGRAMS INCLUDE- THE CALCULATION OF INTER-ATOMIC ANGLES AND DISTANCES, THE CALCULATION OF DRILLING JIG SETTINGS FOR THE CONSTRUCTION OF STRUCTURE MODELS, A SEARCHING PROGRAM THAT USES SPACE-GROUP AND ATOMIC-PARAMETER DATA TO SCAN A CRYSTAL STRUCTURE FOR NEIGHBOURING ATOMS TO A VARIABLE LIMIT AND THEN COMPUTES INTER-ATOMIC DISTANCES AND ANGLES FOR ALL THE ATOMS LOCATED, AND A PROGRAM TO GENERATE THE ANGULAR SETTINGS FOR A DIFFRACTOMETER APPLICABLE TO ALL CRYSTAL SYSTEMS. SEE COMPUTER PROGRAMS FOR X-RAY CRYSTALLOGRAPHY, PARTS I AND II, MINES BRANCH RESEARCH REPORTS R189 AND R191.

MINERALOGY

661. GABE, E.J., GOODMAN, R.H., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
DEVELOPMENT OF A DIFFRACTOMETER SYSTEM FOR THE AUTOMATIC COLLECTION OF SINGLE-CRYSTAL X-RAY INTENSITY DATA, 1966-.
A SYSTEM IS BEING DEVELOPED TO PROVIDE THE CAPABILITY OF UNDERTAKING SINGLE-CRYSTAL STRUCTURE ANALYSIS. A 4-CIRCLE DIFFRACTOMETER WILL BE CONTROLLED BY AN ON-LINE TIME SHARED COMPUTER, SO AS TO ALLOW ALL THE AUGULAR SETTINGS AND AJUSTMENTS TO BE MADE AUTOMATICALLY AND TO COLLECT AND RECORD THE NECESSARY INTENSITY DATA.

662. GITTINS, J., AARDEN, D., VAN LOON, J.E., UNIV. OF TORONTO-
MINERALOGY AND PETROLOGY OF AN ALKALINE COMPLEX CONTAINING MEMBERS OF THE WOHLERITE GROUP, 1964-, PH.D. THESIS (AARDEN).

663. HARRIS, D.C., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
ELECTRON PROBE MICROANALYSIS OF SOME ARSENIDE MINERALS FROM THE COBALT AREA, ONTARIO, 1967-.
ELECTRON PROBE MICROANALYSIS OF SEVERAL COPPER ARSENIDE MINERALS FROM THE EAST ARM OF GREAT SLAVE LAKE, NORTHWEST TERRITORIES, 1967-.

664. HOGARTH, D.D., SEMENOV, E.L., UNIV. OF OTTAWA-
RARE EARTH MINERALS IN ONTARIO AND QUEBEC, 1963-68.

665. HORWOOD, J.L., KEYS, J.D., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MAGNETIC SUSCEPTIBILITY OF (ZN,FE)S SOLID SOLUTIONS, 1964-68.
OBJECTIVES ARE TO MEASURE THE MAGNETIC SUSCEPTIBILITY DUE TO UNPAIRED ELECTRON SPINS AND TO RELATE THIS INFORMATION TO THE COHESIVE FORCES OF FE IN (ZN, FE)S.

666. HUGHSON, M.R., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
HIGH TEMPERATURE X-RAY DIFFRACTION ANALYSIS, 1967-.
USE OF RIGAKU DENKI X-RAY DIFFRACTION CAMERA FOR IDENTIFICATION OF CRYSTALLINE SYNTHETIC PHASES AT TEMPERATURES UP TO APPROXIMATELY 1,400 DEGREES C AND FOR STUDYING TRANSFORMATIONS OF CRYSTALLINE STRUCTURES.

MINERALOGY

667. HUTCHINSON, R.W., MACRAE, N.D., UNIV. OF WESTERN ONTARIO-
ELECTRON PROBE INVESTIGATIONS OF COMPOSITIONS OF METALLIC SULFIDES, 1966-68.
THIS INVESTIGATION HAS PARTICULAR PERTINENCE TO THE THERMAL METAMORPHISM OF SULPHIDE ORES.

668. JAMBOR, J.L., GEOL. SURV. CANADA-
MINERALOGY OF NON-METALLIC VEIN AND WALLROCK MINERALS, COBALT-GOWGANDA SILVER DEPOSITS, ONTARIO, 1966-69.
DETAILED STUDY OF THE CHEMISTRY AND MINERALOGY OF THE CARBONATES AND WALLROCK ALTERATION MINERALS, PREDOMINANTLY IN THE DIABASE HOST ROCKS OF GOWGANDA.

669. KAIMAN, S., HUGHSON, M.R., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGICAL INVESTIGATION OF ORE SAMPLES - A CONTINUING PROJECT.
THE OBJECT OF THESE INVESTIGATIONS IS TO PROVIDE MINERALOGICAL INFORMATION IN CONNECTION WITH ORE TREATMENT STUDIES.

670. KEYS, J.D., BALESHTA, T.M., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
ELECTRICAL PROPERTIES OF SULPHIDE MINERALS, 1965-68.
THE OBJECTIVE IS TO DETERMINE THE MECHANISM OF ELECTRICAL CONDUCTIVITY IN SULPHIDE MINERALS.

671. LASALLE, P., QUEBEC DEPT. OF NATURAL RESOURCES-
RECONNAISSANCE STUDY OF HEAVY MINERALS OF THE LOWER PERIBONKA RIVER, LAKE ST-JOHN, QUEBEC, 1967-70.

672. LEVINSON, A.A., UNIV. OF CALGARY-
HYDROTHERMAL MINERAL TRANSFORMATIONS, 1965-.
SEE THE HYDROTHERMAL SYNTHESIS OF MONTMORILLONITE GROUP MINERALS FROM KAYLENITE, QUARTZ AND VARIOUS CARBONATES, AM. MINERAL., VOL. 51, PP. 495-498.

673. MCNUTT, R.H., KRETSCHMAR, U., MCMASTER UNIV.-
A STUDY OF THE FE-TI OXIDES FROM AN ANORTHOSITE NEAR PARRY SOUND, ONTARIO, 1966-68, M.SC. THESIS (KRETSCHMAR).

674. MULLIGAN, R., JAMBOR, J.L., GEOL. SURV. CANADA-
TIN IN SILICATES FROM SKARN IN THE CASSIAR DISTRICT, NORTHERN BRITISH COLUMBIA, 1965-67.
TWO SKARNS ARE CHARACTERIZED BY THE PRESENCE OF

UP TO 0.9 PERCENT SNO2 IN A UNIQUE IRON-RICH ASSEMBLAGE OF ANDRADITE, EPIDOTE, FERRACTINOLITE AND HEDENBERGITE. NO NORMAL TIN MINERALS ARE PRESENT, AND INDICATIONS ARE THAT THE TIN IS PRINCIPALLY IN THE LATTICE OF GARNET AND EPIDOTE, PROBABLY AS SN4+, SUBSTITUTING FOR FE3+. SEE TIN IN SILICATES FROM SKARN IN THE CASSIAR DISTRICT, NORTHERN BRITISH COLUMBIA, CANADIAN MINERALOGIST (IN PRESS)).

675. NICKEL, E.H., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
THE FUNDAMENTAL PROPERTIES OF SULPHIDE MINERALS, 1964-.
THE INVESTIGATION OF THE FUNDAMENTAL PROPERTIES OF SULPHIDE MINERALS INCLUDING STRUCTURE, BONDING, AND OPTICAL AND PHYSICAL PROPERTIES IS DESIGNED TO PROVIDE BASIC INFORMATION THAT MAY PROVE TO BE OF ULTIMATE VALUE IN THE UTILIZATION OF SULPHIDE ORES. SEE STRUCTURE STABILITY OF MINERALS WITH THE PYRITE, MARCASITE, ARSENOPYRITE AND LOLLINGITE STRUCTURES, ANNUAL MEETING OF THE MINERALOGICAL SOCIETY OF AMERICA, NOV. 1967.

676. NICKEL, E.H., BUTTERILL, J.W., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
OPTICAL PROPERTIES OF OPAQUE MINERALS BY REFLECTED LIGHT, 1965-.
THE OPTICAL PROPERTIES OF OPAQUE MINERALS ARE BEING STUDIED BY REFLECTIVITY DISPERSION MEASUREMENTS, BREWSTER ANGLE DETERMINATIONS, AND BY ELLIPSOMETRY. WORK TO DATE HAS SHOWN THAT THE OPTICAL PROPERTIES ARE STRONGLY DEPENDENT ON THE NATURE OF THE SURFACE BEING INVESTIGATED, AND CURRENT RESEARCH IS BEING DIRECTED CHIEFLY TOWARD A STUDY OF THE SURFACE EFFECTS IN POLISHED SECTIONS. SEE THE EFFECT OF SURFACE PROPERTIES ON REFRACTIVE INDEX DETERMINATION BY THE BREWSTER ANGLE METHOD, AM. MIN. VOL. 52, PP. 1247-1250, 1967.

677. NICKEL, E.H., PETRUK, W., CABRI, L.J., HARRIS, D.C., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGICAL INVESTIGATION OF CANADIAN ORES IN CONJUNCTION WITH MINERAL PROCESSING RESEARCH, 1953-.
A WIDE RANGE OF ORES IS CURRENTLY BEING STUDIED MINERALOGICALLY IN CONNECTION WITH THE DEVELOPMENT AND EXPLORATION OF CANADIAN ORE DEPOSITS BY THE MINING INDUSTRY. MUCH OF THE DATA OBTAINED THROUGH STUDIES ARE ALSO USEFUL IN THE FIELD OF ECONOMIC GEOLOGY.

678. PERRAULT, G., ECOLE POLYTECHNIQUE-
MINERALOGY OF MONT ST. HILAIRE, QUEBEC, 1964-70.
SEE POLYLITHIONITE FROM ST. HILAIRE, P.Q.,

PAPER READ AT THE ANNUAL MEETING OF THE M.A.C., 1966.
PREPARATION DE STANDARDS MINERAUX POUR LA MICROSONDE ELECTRONIQUE, 1966-70.
IT IS PROPOSED TO BEGIN WITH COLLECTION, EXAMINATION AND ANALYSIS OF MATERIALS TO COVER THE FELDSPAR FIELD, THE CLINOPYROXENES, THE PYROCHLORE MINERALS AND MANY OTHERS.

679. PERRAULT, G., LE PAGE, Y., ECOLE POLYTECHNIQUE-
PROGRAMMATION ELECTRONIQUE POUR LES RECHERCHES EN CRISTALLOGRAPHIE, 1966-70.
VOIR CALCUL ET TRACES DE SYNTHESES DE FOURIER ET DE PATTERSON PAR UNE CALCULATRICE ELECTRONIQUE, 34E CONGRES ANNUEL DE L ACFAS, QUEBEC, NOV. 1966.

680. PERRAULT, G., POUPARD, M., ECOLE POLYTECHNIQUE-
UNE MODIFICATION A L APPAREIL BOND POUR LA FABRICATION DE SPECIMENS SPHERIQUES POUR LES MESURES RADIOCRISTALLOGRAPHIQUES, 1966-68.
VOIR UN APPAREIL BOND MODIFIE POUR LA PREPARATION D ECHANTILLONS SPHERIQUES POUR LES ETUDES CRISTALLOGRAPHIQUES, 34E CONGRES ANNUEL DE L ACFAS, QUEBEC, NOV. 1966.

681. PETRUK, W., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
MINERALOGY OF THE SILVER DEPOSITS IN THE COBALT AND GOWGANDA AREAS, ONTARIO, 1964-69.
A SYSTEMATIC STUDY IS BEING MADE TO OBTAIN DETAILED INFORMATION ON THEIR MINERALOGICAL AND CHEMICAL CHARACTERISTICS. THIS STUDY HAS ALREADY SHOWN THAT THE ORE VEINS BELOW THE NIPISSING DIABASE ARE ZONED WITH RESPECT TO TYPE OF ARSENIDE MINERALS AND GRADE OF SILVER ORE, AND THAT THE ZONING IS CONSISTENT IN ALL THE VEINS. PRELIMINARY WORK SUGGESTS THAT THE ORE VEINS ABOVE THE NIPISSING DIABASE ARE ALSO ZONED, BUT THE ZONING IN THESE VEINS IS A MIRROR REFLECTION OF THAT IN THE VEINS BELOW THE DIABASE. A PRELIMINARY ASSESSMENT OF THE TEXTURES OF THE MINERALS SUGGESTS THAT THE ORE WAS NOT NECESSARILY PRECIPITATED FROM A COLLOID AS SUGGESTED BY PREVIOUS WORKERS. SEE PRELIMINARY MINERALOGICAL STUDY OF THE SILVER DEPOSITS IN THE COBALT AREA, ONTARIO, INFORMATION CIRCULAR 179, MINES BRANCH.

682. POULIOT, G., ECOLE POLYTECHNIQUE-
CARBONATE MINERALS IN CARBONATITE INTRUSION, OKA, QUEBEC, 1966-68.
APPROXIMATELY 150 SPECIMENS OF CARBONATE BEARING

ROCKS HAVE BEEN COLLECTED. THESE COMPRISE HAND SPECIMENS FROM THE VARIOUS PHASES OF THE COMPLEX AS WELL AS CORE SAMPLES FROM TWO SECTIONS ACROSS THE ORE ZONE AT THE ST. LAWRENCE MINE. AFTER DETERMINING BULK NB2O5 OF THE SAMPLES, CARBONATE MINERALS WERE SEPARATED FROM THESE AND A NUMBER OF PHYSICAL PROPERITES INVESTIGATED. THESE INCLUDE- FLUORESCENCE IN U.V, LATTICE SPACINGS (211), (122), R.I, 2V, INFRARED SPECTRA (2 4 FUNDAMENTALS). TRACE ELEMENT DETERMINATION USING X-RAY FLUORESCENCE (BA, SR, MN, FE) AND ATOMIC ABSORPTION (MG, SI, AL) SHOULD BE COMPLETED IN 1968. IT IS HOPED TO CORRELATE THESE VARIOUS DATA WITH, PHYSICAL PROPERTIES, TYPES OF CARBONATITES AND POSSIBLY NB2O5 CONTENT OF THE SAMPLES.

683. RIPLEY, L.G., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROWTH OF SINGLE CRYSTALS OF BASE METAL SULPHIDES OF CONTROLLED COMPOSITION, 1964-.
SINGLE CRYSTALS OF WURTZITE AND SPHALERITE OF CENTIMETER SIZE ARE BEING GROWN BY VAPOUR TRANSPORT AND CHEMICAL VAPOUR TRANSPORT TECHNIQUES RESPECTIVELY. CURRENT ATTEMPTS ARE BEING MADE TO GROW SINGLE CRYSTALS OF COPPER SULPHIDES, IRON SULPHIDES, AND COPPER-IRON SULPHIDES.

684. SCHWARCZ, H.P., MCMASTER UNIV.-
CRYSTAL FIELD SPECTRA OF MINERALS, 1966-70.
EXPERIMENTAL STUDY OF OPTICAL AND INFRARED SPECTRA OF DIOPSIDE AND OTHER MINERALS DOPED WITH CO, FE2+, FE3+, MN2+, ETC. SEE CRYSTAL FIELD STABILIZATION EFFECTS IN METAMORPHIC MINERALS, GEOCHIM. ET COSMOCHIM. ACTA, VOL. 31, PP. 503-517, 1967.

685. SIROIS, L.L., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
DETERMINATION OF ELECTRICAL CHARACTERISTICS OF METALLIC OXIDES AND SILICATE MINERALS, 1966-.
SEE A STUDY OF SURFACE CHARACTERISTICS OF SELECTED ASBESTOS FIBRE BY ELECTROPHORESIS, MINES BRANCH IR 67-38.

686. SMITH, D.G.W., UNIV. OF ALBERTA-
MINERALOGY OF SOME GARNETIFEROUS PHYLLITES FROM THE DALRADIAN OF ARGYLLSHIRE, SCOTLAND, 1967-70.
A SERIES OF GREENSCHIST FACIES - PHYLLITES HAVE BEEN COLLECTED FROM THE DALRADIAN ROCKS NEAR STRACHN, ARGYLLSHIERE, SCOTLAND. THESE ARE DOMINANTLY MUSCOVITE-CHLORITE-QUARTZ-ALBITE PHYLLITES BUT GARNET

AND BIOTITE BEARING HORIZONS ARE INTERLAYERED. THE MINERALOGY OF THESE ROCKS IS BEING INVESTIGATED IN DETAIL BY CLASSICAL AND ELECTRON PROBE TECHNIQUES.

687. STEVENSON, J.S., MCGILL UNIV.-
COMPREHENSIVE PETROLOGICAL AND MINERALOGICAL STUDY OF THE SUDBURY BASIN IRRUPTIVE, ONTARIO, 1951-.
SEE SUDBURY IN TERMS OF UPPER-MANTLE PETROLOGY, PROCEEDINGS OF THE GEOL. SOC. AMER., P. 18, 1965.

688. STEVENSON, J.S., STEVENSON, L.S. (MRS), MCGILL UNIV.-
MINERALOGICAL STUDY OF TEETH OF CARBONIFEROUS MICROSAURS FROM THE DAWSON COLLECTION, JOGGINS, NOVA SCOTIA, 1963-68.
SEE FOSSIL TEETH FROM JOGGINS, NOVA SCOTIA, PROCEEDINGS OF THE GEOL. ASSOC. CANADA, VOL. 18, PP. 109-114, 1967.

689. VASQUEZ, J.C., MCCARTNEY, W.D., QUEEN*S UNIV.-
GEOTHERMOMETRY OF PINE POINT CALCITES BY FLUID INCLUSION METHOD, 1966-67, M.SC. THESIS (VASQUEZ).
SIX TYPES OF CALCITE ARE RECOGNIZED. THE FIVE TYPES WHICH CONTAIN SUITABLE PRIMARY LIQUID-GAS INCLUSIONS SHOW SYSTEMATIC TEMPERATURES OF HOMOGENIZATION RANGING FROM 145-165 DEGREES C FOR THE OLDEST TO 45-50 DEGREES C FOR THE YOUNGEST CALCITE. SEE BARITE-FLUORITE STUDY, GEOL. SURV. CAN., PAPER 64-2, PP. 75-78, 1964.

690. WIGHTMAN, J.F., ACADIA UNIV.-
SILICA MINERALS ASSOCIATED WITH TRIASSIC BASALTS NEAR DIGBY, NOVA SCOTIA, 1966-69, M.SC. THESIS.

PALAEONTOLOGY

691. ANDERSON, M.M., MEMORIAL UNIV. OF NEWFOUNDLAND-
DEVONIAN FAUNAL GROUPS FROM PADAUKPIN, NORTHERN BURMA, 1960-69.
INCLUDES BRACHIOPODS, STROMATOPOROIDS, CORALS, BRYOZOA, OSTRACODES AND CRINOIDS.

692. BARNES, C.R., UNIV. OF WATERLOO-
CARADOCIAN CONODONTS FROM WALES, 1965-69.
IT IS HOPED TO PRODUCE A MORE COMPLETE SUCCESSION OF CONODONT FAUNAS IN THE WELSH SUCCESSION WHICH CAN THEN BE RELATED TO THE GRAPTOLITE ZONES.

693. BARNES, C.R., UNIV. OF WATERLOO, SASS, D.B., ALFRED UNIV., NEW YORK-
ELECTRON MICROSCOPY OF CONODONTS, 1966-69.
THE INTERNAL STRUCTURE OF CONODONTS IS BEING INVESTIGATED WITH SPECIAL REFERENCE TO DIFFERENCES BETWEEN **LAMELLAR** AND **FIBROUS** FORMS.

694. BARNES, C.R., UNIV. OF WATERLOO, TUKE, M.F., OXFORD UNIV.-
LOWER ORDOVICIAN CONODONTS FROM ST. GEORGE FORMATION, NEWFOUNDLAND, 1966-68.

695. BARNES, C.R., UNIV. OF WATERLOO, UYENO, T.T., GEOL. SURV. CANADA-
LOWER ORDOVICIAN CONODONTS FROM LEVIS, QUEBEC, 1967-68.
CONODONTS ARE BEING DESCRIBED FROM LIMESTONES IN THE CLASSIC GRAPTOLITIC SEQUENCE.

696. BEERBOWER, J.R., BRAY, R.G., MCMASTER UNIV.-
PALAEOECOLOGY OF MIDDLE DEVONIAN AMBOCOELIA AGGREGATIONS, 1965-69, PH.D. THESIS (BRAY).
AN INVESTIGATION OF GEOLOGICAL ALTERATION OF FOSSIL SHELL MATERIAL AND ITS RELATIONSHIP TO AGGREGATION FORMATION.

697. BIHL, G., UNIV. OF ALBERTA-
PALYNOLOGY OF THE SHEERNESS AREA, ALBERTA, 1967-68, M.SC. THESIS.

698. BINDA, P., UNIV. OF ALBERTA-
PETROLOGY AND PALYNOLOGY OF LATE CRETACEOUS WHITEMUD BEDS, 1963-, PH.D. THESIS.

PALAEONTOLOGY

699. BOLTON, T.E., GEOL. SURV. CANADA-
MAINTENANCE OF GEOLOGICAL SURVEY PALAEONTOLOGICAL TYPE COLLECTION, 1956-.
SEE CATALOGUE OF TYPE INVERTEBRATE FOSSILS OF THE GEOLOGICAL SURVEY OF CANADA, VOL. I, 1960, VOL. II, 1965, VOL. III, 1966, VOL. IV, IN PRESS.
SILURIAN CORALLINE FAUNAS OF CANADA, 1952-.
AN INVESTIGATION AND DESCRIPTION OF THE CORAL FAUNA FOUND IN THE SILURIAN STRATA OF MANITOULIN ISLAND, ONTARIO, LAKE TIMISKAMING, ONTARIO, ORDOVICIAN AND SILURIAN STRATA OF ANTICOSTI ISLAND, QUEBEC, AND ARCTIC ARCHIPELAGO. SEE SILURIAN FAUNAS OF ONTARIO, GEOL. SURV. CAN., PAPER 66-5, 1966.

700. BRAUN, W.K., PETRYK, A.A., UNIV. OF SASKATCHEWAN-
MISSISSIPPIAN FORAMINIFERA OF WESTERN CANADA, 1965-68-
PH.D. THESIS (PETRYK).

701. CALDWELL, W.G.E., FISCHBUCH, N.R., FRISON, E.H., UNIV. OF SASKATCHEWAN-
DEVONIAN FAUNAS OF NORTHERN CANADA, 1960-- PH.D. THESES (FISCHBUCH AND FRISON).
FRISON IS STUDYING THE RUGOSE CORALS OF THE LATE MIDDLE DEVONIAN (GIVETIAN ROCKS OF THE MACKENZIE RIVER VALLEY)- FISCHBUCH IS STUDYING THE DEVONIAN SWAN HILLS REEF COMPLEXES OF ALBERTA WITH SPECIAL EMPHASIS ON THE STROMATOPOROIDS. SEE AMBOCOELIID BRACHIOPODS FROM THE MIDDLE DEVONIAN ROCKS OF NORTHERN CANADA- INTERNATIONAL SYMPOSIUM ON THE DEVONIAN SYSTEM, VOL. II, ALBERTA SOC. PETROL. GEOL. (IN PRESS).

702. CARROLL, R.L., MCGILL UNIV.-
STUDY OF THE ANATOMY, TAXONOMY AND RELATIONSHIPS OF THE ORDER MICROSAURIA (PALAEOZOIC LEPOSPONDYL AMPHIBIAN), 1962-67.
SEE AN ADELOGYRINID LEPOSPONDYL AMPHIBIAN FROM THE UPPER CARBONIFEROUS, CAN. JOUR. ZOOL., VOL. 45, PP. 1-16. STUDY OF THE ORIGIN AND EARLY EVOLUTION OF THE CLASS REPTILIA, 1962-.
SEE ROMERISCUS, THE OLDEST KNOWN REPTILE, SCIENCE, VOL. 157, NO. 3784, PP. 56-59.

703. CHAMNEY, T.P., GEOL. SURV. CANADA-
MESOZOIC MICROPALAEONTOLOGY OF ARCTIC CANADA, 1963-.
SEE ALBIAN FORAMINIFERIDA OF THE PEEL RIVER AREA, DISTRICT OF MACKENZIE, GEOL. SURV. CAN., PAPER 64-2, P. 5.

PALAEONTOLOGY

704. CHIANG, K.K., UNIV. OF WESTERN ONTARIO-
SILURIAN BRACHIOPODS OF SOUTHWESTERN ONTARIO, 1968-69, M.SC. THESIS.

705. CHURCHER, C.S., ROYAL ONTARIO MUSEUM-
PLEISTOCENE FAUNAS OF THE ALBERTA AND SASKATCHEWAN PRAIRIES, 1965-.
THIS PROJECT INVOLVES THE GEOLOGICAL AND PALAEONTOLOGICAL INVESTIGATION OF FOSSILIFEROUS SITES MAINLY IN THE SOUTH SASKATCHEWAN RIVER BASIN. NEW OR FIRST RECORDS OF CANADIAN PLEISTOCENE MAMMALS ARE BEING OBTAINED AND STRATIGRAPHIC CORRELATION BETWEEN KNOWN FAUNAS IN THE UNITED STATES IS BECOMING EVIDENT. DATES CAN THUS BE SUGGESTED FOR FLUVIATILE MEMBERS IN SOME PLEISTOCENE SECTIONS WITHIN THIS RIVER SYSTEM. SEE THE PLEISTOCENE UNGULATES FROM THE BOW RIVER GRAVELS AT COCHRANE, ALBERTA, CAN. JOUR. EARTH SCI. (IN PRESS).

706. COPELAND, M.J., GEOL. SURV. CANADA-
ORDOVICIAN AND SILURIAN OSTRACODA, ANTICOSTI ISLAND, QUEBEC.
THIS STUDY IS CONCERNED WITH THE STRATIGRAPHIC OCCURRENCE AND DESCRIPTION OF PREVIOUSLY UNDESCRIBED OSTRACOD FAUNAS FROM THE SURFACE AND SUBSURFACE STRATA OF ANTICOSTI ISLAND.

707. COPELAND, M.J., LEGAULT, (MISS) J.A., GEOL. SURV. CANADA-
RESEARCH ON MIDDLE DEVONIAN, HAMILTON GROUP MICROFOSSILS FROM DRILL CORES, SOUTHWESTERN ONTARIO, 1967-69, PH.D. THESIS, UNIV. OF OKLAHOMA (MISS LEGAULT).
DR. COPELAND IS STUDYING THE OCCURRENCE OF OSTRACODA AND THEIR STRATIGRAPHIC DISTRIBUTION, MISS LEGAULT IS DOING SIMILAR WORK BASED ON CHITINOZOANS.

708. COPPER, P., LAURENTIAN UNIV.-
EVOLUTION, ECOLOGY AND MORPHOLOGY OF ATRYPHID BRACHIOPODS, 1962-.
AN INVESTIGATION OF THE PRIMITIVE ORDOVICIAN-SILURIAN ATRYPIDS OF EASTERN NORTH AMERICA AND REVISION OF THE DEVONIAN ATRYPIDS OF THE SAME AREA. SEE ADAPTATIONS AND LIFE HABITS OF DEVONIAN ATRYPID BRACHIOPODS- PALAEOGEOGR., PALAEOCLIMAT., PALAEOECOL., VOL. 3, PP. 363-379, 1967.

709. COX, R.L., GEOL. SURV. CANADA-
CRETACEOUS DINOFLAGELLATES AND AGRITARCHS FROM

SASKATCHEWAN AND MANITOBA, 1966-68, PH.D. THESIS.
THE MATERIAL USED WAS GATHERED FROM POTASH SHAFT WALLS IN SOUTHERN SASKATCHEWAN AND OUTCROPS IN MANITOBA. THE AGE OF THE FOSSILS RANGES FROM ALBIAN TO MAESTRICHTIAN AND POSSIBLY DANIAN.

710. DINELEY, D.L., UNIV. OF OTTAWA-
DEVONIAN VERTEBRATES FROM THE MACKENZIE MOUNTAINS, NORTHWEST TERRITORIES, 1966-67.
ABUNDANT FOSSILS FROM SEVERAL NEW LOCALITIES IN THE DELORME FROMATION INCLUDE SEVERAL NEW TAXA OF OSTRACODERMS AND ACANTHODIANS. PRESERVATION IS VERY GOOD, ALMOST COMPLETE IN SOME SPECIMENS- THE FOSSILS APPEAR IN DEPOSITS OF A MARINE LAGOONAL ENVIRONMENT.

711. DINELEY, D.L., BROAD, D.S., UNIV. OF OTTAWA-
DEVONIAN VERTEBRATES IN THE CANADIAN ARCTIC ISLANDS, 1965-- M.SC. THESIS (BROAD).
SEVERAL NEW TAXA OF DEVONIAN VERTEBRATES FROM THE PEEL SOUND FORMATION OF SOMERSET AND PRINCE OF WALES ISLAND ARE UNDER STUDY. SEVERAL PAPERS ARE AT PRESENT IN PRESS. SEE GEOLOGICAL STUDIES IN SOMERSET ISLAND, UNIVERSITY OF OTTAWA EXPEDITION 1965- ARCTIC, VOL.19, PP. 270-277, 1966.

712. DIXON, O.A., UNIV. OF OTTAWA-
PALAEONTOLOGICAL STUDIES - ANTICOSTI ISLAND, QUEBEC, 1967-.

713. DREIMANIS, A., UNIV. OF WESTERN ONTARIO-
EXTINCTION OF MASTODONS IN THE GREAT LAKES REGION, 1967-68.
SEE MASTODONS, THEIR GEOLOGIC AGE AND EXTINCTION IN ONTARIO, CANADA, CAN. JOUR. EARTH SCIENCES, VOL. 4, PP. 663-675, 1967.

714. EDMUND, G.A., ROYAL ONTARIO MUSEUM-
FAUNAL STUDY OF THE CYPRESS HILLS FORMATION (OLIGOCENE) NEAR EASTEND, SASKATCHEWAN, 1967-68.
EARLIER COLLECTIONS HAVE NOT BEEN SUFFICIENT TO YIELD A CLEAR PICTURE OF THIS RICH TERTIARY FAUNA. MODERN METHODS FOR THE RECOVERY OF VERY SMALL SPECIMENS HAVE YIELDED SIGNIFICANT NUMBERS OF SMALL MAMMALS, FROGS, FISH, ETC. A NEW QUARRY OPENED IN 1967 HAS PRODUCED LARGE NUMBERS OF SKULLS, JAWS, AND OTHER BONES OF THE THREE PROBLEMATICAL GENERA OF BRONTOTHERES.

PALAEONTOLOGY

715. FAHRAEUS, L.E., UNIV. OF WESTERN ONTARIO-
UPPER SILURIAN CONODONTS OF SOUTHERN ONTARIO, 1967-70.
SILURIAN AND LOWER DEVONIAN CONODONTS HAVE PROVEN USEFUL IN DEFINING THIS BOUNDARY. THE UPPER SILURIAN IN SOUTHERN ONTARIO WILL BE EXAMINED TO DETERMINE THE NATURE OF THE CONODONT FAUNA, IF ANY EXIST.

716. FERGUSON, L., MOUNT ALLISON UNIV.-
SCOTTISH CARBONIFEROUS OSTRACOD GENERA BAIRDIA AND PARAPARCHITES, 1965-70.
GROWTH SERIES OF BOTH BAIRDIA AND PARAPARCHITES FROM RESTICTED VERTICAL INTERVALS ARE BEING COMPARED WITH THE TYPE SPECIMENS OF NUMEROUS **SPECIES** OF THESE GENERA WHICH HAVE BEEN PREVIOUSLY RECORDED FROM THE SAME LOCALITY. THE OBJECT IS TO REDUCE THE NUMBER OF SPURIOUS SPECIES WITHIN EACH GENUS BY **LUMPING** TOGETHER THOSE FORMS WHICH ARE OBVIOUS INSTARS OF ONE SPECIES.
SEXUAL DIMORPHISM IN FOSSIL BRACHIOPODS, 1967-68.
COMPACTION-DISTORTION OF FOSSIL BRACHIOPODS AND ITS BEARING ON TAXONOMY, 1959-69.
SEE DISTORTION OF CRURITHYRIS UREI (FLEMING) FROM THE VISEAN ROCKS OF FIFE, SCOTLAND, BY COMPACTION OF THE CONTAINING SEDIMENTS, J. OF PALAEONTOLOGY, VOL. 36, NO. 1, PP. 115-119, 1962.
PERMO-PENNSYLVANIAN PRODUCTED GENUS WAAGENOCONCHA CHAO FROM THE YUKON AND NORTHWEST TERRITORIES, 1960-70.
INVOLVES CORRELATION OF SHELL SIZE STAGE AT WHICH GENICULATION OCCURS AND THE COARSENESS OF ORNAMENT WITH STRATIGRAPHIC POSITION AND SEDIMENT TYPES.
FAUNAL STUDY OF THE PERMO-PENNSYLVANIAN OF NORTH-CENTRAL ELLESMERE ISLAND, NORTHWEST TERRITORIES, 1961-70.
A STUDY OF SOME ARTHROPODAN TRACKWAYS FROM JOGGINS, NOVA SCOTIA, 1966-70.
SEE THE RECOVERY OF SOME LARGE TRACK-BEARING SLABS FROM JOGGINS, NOVA SCOTIA, MARITIME SEDIMENTS, VOL. 2, NO. 3, JULY, 1966, PP. 128-130.

717. FERRIGNO, K., UNIV. OF WESTERN ONTARIO-
MIDDLE DEVONIAN CONODONTS OF THE DUNDEE LIMESTONE, ST. MARY S, ONTARIO, 1966-68, M.SC. THESIS.
THE CONODONT FAUNA WILL BE DESCRIBED IN DETAIL. IN ADDITION THE STRATIGRAPHIC DISTRIBUTION HAS BEEN DETERMINED AND A DISTINCT VARIABILITY IN THE SUCCESSION HAS BEEN ESTABLISHED.

718. FOX, R.C., UNIV. OF ALBERTA-
FOSSIL VERTEBRATES FROM THE LATE CRETACEOUS AND EARLY TERTIARY, ALBERTA, 1966-.

PALAEONTOLOGY

719. FOX, R.C., COLWELL, J.M., UNIV. OF ALBERTA-
MICROVERTEBRATES FROM THE LATE CRETACEOUS OF ALBERTA, 1966-.
THE CONTINENTAL SEQUENCE OF LATE CRETACEOUS AND EARLY TERTIARY ROCKS IN ALBERTA PROVIDES A UNIQUE OPPORTUNITY TO STUDY THE STRUCTURE AND CHANGE IN VERTEBRATE COMMUNITIES THROUGH TIME. SMALL VERTEBRATES, THE MOST ABUNDANT MEMBERS OF THESE COMMUNITIES, ARE COLLECTED BY LARGE-SCALE UNDERWATER WASHING AND SCREENING OF FOSSILIFEROUS ROCK MATRIX, FIELDWORK IN 1967 SAW TREATMENT OF APPROXIMATELY 30 TONS OF MATRIX QUARRIED FROM SIX SITES IN THE OLDMAN FORMATION. DURING 1968 ADDITIONAL SITES WILL BE QUARRIED, WASHED AND FOSSILS RECOVERED. INITIAL ATTENTION IS BEING PAID THE MAMMALS, THOSE IDENTIFIED SO FAR SUGGEST SIGNIFICANT TAXONOMIC AND FACIES DIFFERENCES FROM **LANCIAN** ASSEMBLAGES.

720. FREBOLD, H., GEOL. SURV. CANADA-
THE JURASSIC SYSTEM OF CANADA, 1950-.
SUBJECTS UNDER INVESTIGATION INCLUDE- (1) JURASSIC BEDS AND FOSSILS IN MANNING PARK AREA (WITH J. COATES), (2) LOWER JURASSIC FAUNAS FROM QUEEN CHARLOTTE ISLANDS, (3) NEW SINEMURIAN FAUNA FROM SOUTHEASTERN BRITISH COLUMBIA, (4) STRATIGRAPHY AND FAUNA OF THE UPPER PLIENSBACHIAN BEDS IN ALBERTA, (5) THE JURASSIC SYSTEM OF CANADA. SEE HETTANGIAN AMMONITE FAUNAS OF THE TASEKO LAKES AREA, B.C., GEOL. SURV. CAN., BULL. 158, 1967, MIDDLE CALLOVIAN SEDIMENTARY ROCKS AND GUIDE AMMONITES FROM SOUTHWESTERN B.C. (WITH H.W. TIPPER), GEOL. SURV. CAN., PAPER 67-21, 1967, NEW OCCURRENCES OF JURASSIC ROCKS AND FOSSILS IN CENTRAL AND NORTHERN YUKON TERRITORY (WITH E.W. MOUNTJOY AND D.J. TEMPELMAN-KLUIT), GEOL. SURV. CAN., PAPER 67-12, 1967.

721. FRITZ, W.H., GEOL. SURV. CANADA-
MIDDLE CAMBRIAN TRILOBITES FROM THE BURGESS SHALE AND STEPHEN FORMATION NEAR FIELD, BRITISH COLUMBIA, CANADA, 1966-68.
LOWER CAMBRIAN TRILOBITES OF THE TYPE SEKWI FORMATION, NORTHWEST TERRITORIES, 1966-69.

722. GREINER, H.R., UNIV. OF NEW BRUNSWICK-
BIOCOENOSE TO THANATOCOENOSE ON A TROPICAL CORAL REEF, 1967-68.

723. HACQUEBARD, P.A., CAMERON, A.R., DONALDSON, J.R., BIRMINGHAM, T.F., BARSS, M.S., GEOL. SURV. CANADA-
MICROSCOPIC COAL RESEARCH IN FIELDS OF COAL PETROLOGY

AND CARBONIFEROUS PALYNOLOGY, A CONTINUING PROGRAM.
THE MICROSCOPIC STUDIES ARE CARRIED OUT FOR GEOLOGICAL AND COAL UTILIZATION PURPOSES, AND PROVIDE INFORMATION ON- (1) CORRELATION OF COAL SEAMS, (2) ORIGIN, SEDIMENTATION AND LATERAL VARIATIONS IN COMPOSITION, QUALITY AND THICKNESS OF COAL SEAMS, (3) STRATIGRAPHY OF THE CARBONIFEROUS AND PERMIAN AND AGE DETERMINATIONS BY MEANS OF FOSSIL SPORES ON TERRESTRIAL DEPOSITS OF UPPER PALAEOZOIC AGE, (4) COAL PREPARATION, COAL CLEANING AND COAL CARBONIZATION, (5) ASPECTS OF COAL RESEARCH FOR WHICH MICROSCOPIC STUDIES ARE REQUIRED. SEE CARBONIFEROUS AND PERMIAN SPORES OF CANADA, GEOL. SURV. CAN., PAPER 67-11, 1967.

724. HARRIS, D., UNIV. OF ALBERTA-
WESTERN CANADA FAVOSITIDS, 1960-68, PH.D. THESIS.

725. HILLS, L.V., UNIV. OF CALGARY-
PALYNOLOGY OF THE BEAUFORT FORMATION, NORTHWEST TERRITORES, 1967-68.

726. HILLS, L.V., ROUSE, G.E., UNIV. OF CALGARY AND UNIV. OF BRITISH COLUMBIA-
PALYNOLOGY OF EUREKA SOUND FORMATION, NORTHWEST TERRITORIES, 1967-68.

727. HILLS, L.V., SARJEANT, W.A., UNIV. OF CALGARY-
JURASSIC DINOFLAGELLATES, 1967-68.

728. HOFMANN, H.J., GEOL. SURV. CANADA-
PRECAMBRIAN PALAEONTOLOGY, 1966-.
STUDY OF PRECAMBRIAN FOSSILS AND PSEUDOFOSSILS, WITH EMPHASIS ON POSSIBLE USE OF ALGAL STROMATOLITES IN CORRELATION OF PROTEROZOIC SEQUENCES IN CANADA. SEE PRECAMBRIAN FOSSILS NEAR ELLIOT LAKE, ONTARIO, SCIENCE, VOL. 156, NO. 3774, PP. 500-504, 1967.

729. HOOPER, K., CARLETON UNIV.-
PRECAMBRIAN MICROFOSSILS, 1966-.
QUATERNARY FORAMINIFERA AND SEDIMENTS OF EASTERN CANADA - A CONTINUING PROJECT.

730. HSU, Y., MEMORIAL UNIV. OF NEWFOUNDLAND-
FOSSILS IN THE LATE-PROTEROZOIC ST. JOHN S FORMATION, AVALON PENINSULA, NEWFOUNDLAND, 1966-68, M.SC.

THESIS.
A DETAILED STUDY OF THE FOSSIL IMPRINTS KNOWN AS **ASPIDELLA TERRANOVICA BILLINGS** AND OF THE DEPOSITIONAL ENVIRONMENT IN WHICH THEY OCCUR, AND AN ATTEMPT TO ISOLATE ORGANIC COMPOUNDS (AMINO ACIDS) FROM THE ENCLOSING SHALY ROCK.

731. JACKSON, D.E., UNIV. OF ALBERTA-
TAXONOMY, BIOSTRATIGRAPHY AND PALEOZOOGEOGRAPHY OF GRAPTOLITES OF WESTERN CANADA, 1962-.
SEE PSIGRAPTUS, A NEW GRAPTOLITE GENUS FROM THE TREMADOCIAN OF YUKON, CANADA, GEOL. MAG, VOL. 104, NO. 4, PP. 317-321.

732. JACKSON, D.E., LENZ, A.C., UNIV. OF WESTERN ONTARIO-
UPPER SILURIAN AND LOWER DEVONIAN GRAPTOLITES OF NORTHWESTERN CANADA, 1966-68.

733. JELETZKY, J.A., GEOL. SURV. CANADA.
SCAPHITE FAUNAS FROM THE BEARPAW FORMATION OF ALBERTA AND SASKATCHEWAN AND ITS EQUIVALENTS IN MANITOBA, 1949-.
SEE A NEW SCAPHITE FROM THE CAMPANIAN ROCKS OF THE WESTERN INTERIOR OF NORTH AMERICA, JOUR. PALAEONT., VOL. 39(5), PP. 794-801, 1965.
MONOGRAPH OF CANADIAN BELEMNITES, 1959-75.
MONOGRAPH OF THE CANADIAN BUCHIA (=AUCELLA), 1959-70.
CRETACEOUS INDEX FOSSILS OF SEDIMENTARY BASINS OF WESTERN AND ARCTIC CANADA, 1962-69.
THE OBJECTIVE IS TO PREPARE A SERIES OF FOSSIL PLATES ILLUSTRATING A SELECTION OF BEST KNOWN AND STRATIGRAPHICALLY MOST USEFUL EARLY- TO LATE (BERRIASIAN TO MAESTRICHTIAN) MARINE INVERTEBRATE FOSSILS OF SEDIMENTARY BASINS OF WESTERN AND ARCTIC CANADA. THE FIRST PART COVERING THE LOWER CRETACEOUS INDEX FOSSILS IS PUBLISHED (GEOL. SURV. CAN., PAPER 64-11). THE SECOND PART COVERING THE UPPER CRETACEOUS FOSSILS IS IN PREPARATION.
MID- TO LATE CRETACEOUS (HAUTERIVIAN TO MAESTRICHTIAN) INDEX FOSSILS OF THE CANADIAN WESTERN CORDILLERA, 1964-69.
PREPARATION OF A SERIES OF FOSSIL PLATES ILLUSTRATING A SELECTION OF BEST KNOWN AND MOST USEFUL MID- TO LATE CRETACEOUS (HAUTERIVIAN TO MAESTRICHTIAN) MARINE INVERTEBRATE FOSSILS OF THE CANADIAN WESTERN CORDILLERA.

734. LESPERANCE, P.J., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME), UNIV. OF MONTREAL-

PALAEONTOLOGY

STUDY OF TRILOBITES, GASPE PENINSULA, QUEBEC, 1967-68.

735. LESPERANCE, P.J., UNIV. OF MONTREAL-
UPPER ORDOVICIAN, SILURIAN AND LOWER DEVONIAN TRILOBITES, 1962-.
INCLUDES STUDY OF WHITE HEAD FORMATION TRILOBITES OF THE PERCE REGION, QUEBEC (ASHGILL-LLANDOVERY) AND SILURO-DEVONIAN TRILOBITES AND STRATIGRAPHY OF THE QUEBEC APPALACHIANS.

736. LOGAN, A., UNIV. OF NEW BRUNSWICK-
SYSTEMATIC ACCOUNT OF PERMIAN BIVALVES FROM CANADIAN ARCTIC AND THEIR AFFINITIES, 1967-69.
PERMIAN ORTHOTETID BRACHIOPODS FROM THE CANADIAN ARCTIC, 1967-69.

737. MCANDREWS, J.H., ROYAL ONTARIO MUSEUM, BLOOM, A.L., CORNELL UNIV.-
POLLEN AND OTHER PLANT FOSSILS AT THE FERNBANK INTERGLACIAL SITE, CAYUGA LAME, NEW YORK, 1967-68.
THE SITE APPEARS TO BE CORRELATIVE TO THE DON BEDS OF THE TORONTO FORMATION.

738. MCGREGOR, D.C., GEOL. SURV. CANADA-
REFERENCE SLIDE COLLECTION AND PHOTOGRAPHIC RECORD OF FOSSIL MIOSPORES, 1959-.
THE COLLECTION IS AVAILABLE FOR EXAMINATION IN OTTAWA BY INTERESTED PALYNOLOGISTS.
DEVONIAN PALYNOLOGY OF EASTERN CANADA, PHASE 1- SPORES OF THE GASPE SANDSTONE, 1960-69.
INVOLVES THE TAXONOMY AND BIOSTRATIGRAPHIC SIGNIFICANCE OF DEVONIAN PALYNOMORPHS. SEE COMPOSITION AND RANGE OF SOME DEVONIAN SPORE ASSEMBLAGES OF CANADA, REV. PALAEOBOT. AND PALYNOL., VOL. 1, PP. 173-183, 1967.

739. MCROBERTS, J.H.E., SMITH, D.L., QUEEN*S UNIV.-
MICROFAUNAL ANALYSIS OF MARINE CORES FROM NORTHUMBERLAND STRAIT, NORTHWEST TERRITORIES, 1967-68.
A STUDY OF THE FORAMINIFERA FROM CORES OF TERRIGENOUS SEDIMENT DEPOSITED IN A SHALLOW-WATER OPEN-MARINE ENVIRONMENT.

740. MEDIOLI, F., DALHOUSIE UNIV.-
FORAMINIFERAL ECOLOGY ON THE SCOTIAN SHELF AND OTHER SELECTED AREAS, 1966-70.
THE OBJECTIVE IS TO FIND OUT MORE ABOUT THE AREAL

DISTRIBUTION OF BENTHIC FORAMINIFERA ON THE SCOTIAN SHELF. IT INCLUDES RESEARCH IN MICRONEONTOLOGY, SEDIMENTOLOGY, GEOCHEMISTRY AND PHYSICAL OCEANOGRAPHY. PROJECTS INCLUDES A DETAILED STUDY OF A SMALL NEAR SHORE AREA (CAPE SABLE ISLAND), A GENERALIZED STUDY OF A LARGE OFFSHORE ZONE (SW SCOTIAN SHELF), A DETAILED STUDY OF AN INLAND MARINE-WATER BODY (HALIFAX HARBOUR), AND A GENERALIZED STUDY OF PLEISTOCENE STRATIGRAPHIC PHENOMENA ON THE SHELF AND SLOPE ALONG EAST EDGE OF SCOTIAN SHELF.

741. MEHROTRA, P.N., MCGILL UNIV.-
STROMATOPOROIDS ON SOUTH FLANK ANCIENT WALL REEF COMPLEX, ALBERTA, 1967-69, PH.D. THESIS.

742. MORRIS, W.G., UNIV. OF ALBERTA-
MICROVERTEBRATES FROM THE EARLY TERTIARY OF SOUTHERN ALBERTA, 1967-70, PH.D. THESIS.

743. MOTT, R.J., GEOL. SURV. CANADA-
PALYNOLOGICAL STUDIES IN CENTRAL SASKATCHEWAN, 1965-68. INVOLVES THE STUDY OF LATE-GLACIAL AND POST-GLACIAL VEGETATIONAL AND CLIMATIC CHANGES AND GEOCHRONOLOGY IN CENTRAL SASKATCHEWAN WITH EMPHASIS ON FLUCTUATIONS OF THE FOREST-GRASSLAND BOUNDARY IN POST-GLACIAL TIME. SEE GEOL. SURV. CAN., PAPER 67-1A, PP. 122-123, 1967.

744. NASSICHUK, W.W., GEOL. SURV. CANADA-
PENNSYLVANIAN AMMONOIDS OF ARCTIC CANADA, 1963-68. SEE A MORPHOLOGIC CHARACTER NEW TO AMMONOIDS PORTRAYED BY CLISTOCERAS GEN. NOV. FROM THE PENNSYLVANIAN OF ARCTIC CANADA, JOUR. PALAEONT., VOL. 41, NO. 1, 1967.

745. NELSON, S.J., UNIV. OF CALGARY-
PERMO-PENNSYLVANIAN BRACHIOPODS OF THE YUKON TERRITORY, 1959-.
SEE PERMO-PENNSYLVANIAN HORRIDONID AND BRACHYTHYRID BRACHIOPODS OF THE YUKON TERRITORY, JOUR. PALAEONTOLOGY, MAY 1968 (IN PRESS).

746. NOBLE, J.P.A., UNIV. OF NEW BRUNSWICK-
LOWER-MID DEVONIAN PALAEONTOLOGY, WESTERN CANADA SEDIMENTARY BASIN, 1967-72.

PALAEONTOLOGY

747. NORFORD, B.S., GEOL. SURV. CANADA-
FAUNAL STUDY OF LATE ORDOVICIAN AND SILURIAN ROCKS OF SOUTHERN BRITISH COLUMBIA, 1960-.
SEE THE BEAVERFOOT-BRISCO FORMATION IN THE STANFORD RANGE, BRITISH COLUMBIA, ALBERTA SOC. PETROL. GEOL. JOUR. VOL. 10, PP. 443-453, 1962.
MONOGRAPH OF THE BRACHIOPOD FAMILY TRIMERELLIDAE, 1966-67.
THE TRIMERELLIDAE IS AN ABERRANT FAMILY OF ORDOVICIAN AND SILURIAN BRACHIOPODS THAT IS CUSTOMARILY PLACED IN THE CLASS INARTICULATA. THE FAMILY IS ONE OF THE FEW FAMILIES OF THE CLASS THAT HAS A CALCAREOUS SHELL. A FORM OF ARTICULATION IS DEVELOPED IN THE TRIMERELLIDS BUT DIFFERS MARKEDLY FROM THAT CHARACTERISTIC OF THE CLASS ARTICULATA. STUDY OF THE FAMILY WILL MORE CLEARLY REVEAL ITS RELATIONSHIPS TO THE INARTICULATA AND THE ARTICULATA. SEE A WELL-PRESERVED DINOBOLUS FROM THE SANDPILE GROUP (MIDDLE SILURIAN) OF NORTHERN BRITISH COLUMBIA, PALAEONTOLOGY, VOL. 3, PP. 242-244, 1960.

748. NORRIS, G., UNIV. OF TORONTO-
DISTRIBUTION OF EARLY ANGIOSPERMS IN NORTH AMERICA, 1964-.
A STUDY OF ALBIAN-CENOMANIAN PALYNOLOGIC SEQUENCES IN THE OKLAHOMA-TEXAS REGION COMPARED WITH WESTERN CANADA. RELATIVE TIMES OF APPEARANCE OF DICOTYLEDONOUS ANGIOSPERMS AT DIFFERENT LATITUDES HAVE BEARING ON EVOLUTIONARY AND BIOSTRATIGRAPHIC CONCEPTS. SEE SPORES AND POLLEN GRAINS FROM FREDERICKSBURGIAN (ALBIAN) STRATA, MARSHALL COUNTY, OKLAHOMA, POLLEN ET SPORES, PARIS (IN PRESS).
STATISTICAL ANALYSIS OF RECURRENT SPECIES GROUPS IN PALYNOLOGIC ASSEMBLAGES, 1962-.
THE MUTUAL AFFINITY AND ANTIPATHY OF FOSSIL MIOSPORES ALLOWS DELIMITATION OF STATISTICALLY SIGNIFICANT RECURRENT GROUPS. PLEISTOCENE RECURRENT GROUPS HAVE CLIMATIC AND ECOLOGIC SIGNIFICANCE. THIS OBJECTIVE PROCEDURE IS BEING APPLIED TO MESOZOIC SECTIONS TO ASCERTAIN THE PALEOECOLOGIC IMPLICATIONS OF THE METHOD.

749. REIMCHEN, T.H.F.K., UNIV. OF ALBERTA-
PLEISTOCENE MAMMALS FROM THE SASKATCHEWAN GRAVELS AND SANDS, ALBERTA, 1966-68, M.SC. THESIS.

750. RIVA, J., LAVAL UNIV.-
GRAPTOLITE FAUNAS OF THE UPPER ORDOVICIAN OF THE ISLAND OF ANTICOSTI, QUEBEC, 1965-.
DIDYMOGRAPTI OF THE LOWER ORDOVICIAN AT LEVIS, QUEBEC,

1966-68.

751. RUSSELL, L.S., ROYAL ONTARIO MUSEUM-
FAUNA OF THE UPPER MILK RIVER BEDS OF ALBERTA, 1967-69.
THE MILK RIVER VERTEBRATE FAUNA IS COMPARABLE WITH, BUT OLDER THAN, THE MUCH BETTER KNOWN FAUNA OF THE OLDMAN FORMATION. APPLICATION OF NEW COLLECTING TECHNIQUES MAY PROVIDE ADDITIONAL KNOWLEDGE OF THIS OBSCURE STAGE IN THE DEVELOPMENT OF LATE CRETACEOUS VERTEBRATES. SEE FAUNA OF THE UPPER MILK RIVER BEDS, TRANS. ROY. SOC. CANADA, SER. 3, SEC. 4, VOL. 29, PP. 115-128, PLS. 1-5, 1935.

752. SINGH, CH., RESEARCH COUNCIL OF ALBERTA-
LOWER CRETACEOUS MICROFLORAS OF THE PEACE RIVER DISTRICT, 1965-.
DETAILED SCANNING OF THE SLIDES, IDENTIFICATION, AND COMPILATION OF THE RANGE CHARTS OF VARIOUS MICROFLORAL SPECIES FROM THE LOON RIVER, HARMON, CADOTTE, PADDY, AND LOWER SHAFTESBURY BEDS HAVE BEEN COMPLETED, AND MOST OF THE MICROPHOTOGRAPHIC WORK HAS BEEN FINISHED. ABOUT 200 SPECIES OF FOSSIL POLLEN AND SPORES, 17 SPECIES OF MEGASPORES, AND 130 SPECIES OF MICROPLANKTON HAVE BEEN IDENTIFIED. IT APPEARS POSSIBLE TO RECOGNIZE THREE MICROFLORAL ASSEMBLAGES, ON THE BASIS OF SPECIES DISTRIBUTION- LOON RIVER-HARMON ASSEMBLAGE, WHICH IS ESSENTIALLY SIMILAR TO THAT OF THE UPPER MANNVILLE BEDS, A YOUNGER CADOTTE-PADDY ASSEMBLAGE CHARACTERIZED BY THE PRESENCE OF ANGIOSPERMS, AND THE LOWER SHAFTESBURY ASSEMBLAGE DISTINGUISHED BY ABUNDANT AND SIGNIFICANTLY DIFFERENT MICROPLANKTON SPECIES.

753. SNEAD, R., RESEARCH COUNCIL OF ALBERTA-
MICROFLORAL STUDY OF THE CRETACEOUS-TERTIARY BOUNDARY IN THE ALBERTA PLAINS, 1965-67, PH.D. THESIS, UNIV. OF ALBERTA.

754. SRIVASTAVA, S., UNIV. OF ALBERTA-
PALYNOLOGY OF THE EDMONTON FORMATION OF THE DRUMHELLER AREA, ALBERTA, 1963-68, PH.D. THESIS.
SEE PALYNOLOGY OF LATE CRETACEOUS MAMMAL BEDS, SCOLLARD, ALBERTA, CANADA, PALAEOGEOGRAPHY, PALAEOCLIMATE PALAEOECOLOGY, VOL. 3, PP. 133-150, 1967.

755. STEARN, C.W., MCGILL UNIV.-
THE STROMATOPOROID GENERA INTEXODICTYON, HAMMATOSTROMA, AND TIENODICTYON, 1967-68.
INVESTIGATION OF THE CONFUSION BETWEEN THESE

THREE VERY SIMILAR GENERA.
STROMATOPOROID PALEOECOLOGY OF THE ANCIENT WALL CARBONATE COMPLEX, JASPER NATIONAL PARK, ALBERTA, 1964-69.
SEE A PRELIMINARY STUDY OF THE DISTRIBUTION OF STROMATOPOROIDS ON THE SOUTH FLANK OF THE ANCIENT WALL CARBONATE COMPLEX, ALBERTA, INT. DEVONIAN SYMPOSIUM, CALGARY, 1967, VOL. 2.

756. THUSU, B., UNIV. OF ALBERTA-
PALYNOLOGY OF THE DUNVEGAN FORMATION, ALBERTA, 1965-67, M.SC. THESIS.

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SEE A STANDARD FOR TRIASSIC TIME, GEOL. SURV. CAN., BULL. 156 (IN PRESS).

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PALYNOLOGY OF MCMURRAY FORMATION, ALBERTA, 1963-68.

759. WALL, J.H., RESEARCH COUNCIL OF ALBERTA-
CRETACEOUS MICROFAUNAS OF NORTHERN ALBERTA, 1962-68.
FORAMINIFERAL ASSEMBLAGES FROM CRETACEOUS OUTCROPS IN THE NORTHERN ALBERTA PLAINS (NORTH OF 56 DEGREES LATITUDE) ARE BEING STUDIED WITH THE INTENT OF COMPILING A SET OF STRATIGRAPHICALLY ARRANGED FAUNAL PLATES FOR INCLUSION IN A REPORT ON THE GEOLOGY OF THE REGION BY CO-WORKERS.
BEARPAW MICROFAUNAL STUDIES, 1966-70.
OUTCROP SECTIONS OF THE LATE CRETACEOUS BEARPAW FORMATION IN SOUTHERN ALBERTA ARE BEING EXAMINED FOR THEIR MICROFAUNAL CONTENT. IT IS EXPECTED THAT THE RESULTS OF THIS STUDY CAN BE CORRELATED WITH SIMILAR WORK NOW BEING COMPLETED BY W.G.E. CALDWELL AND B.R. NORTH ON EQUIVALENT STRATA IN SASKATCHEWAN.

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CLASSIFICATION OF PRODUCTIDA, 1967-68.
CONCERNED CHIEFLY WITH PRODUCTIDAE, LINOPRODUCTIDAE AND MARGINIFERIDAE.
CANADIAN ARCTIC STROPHALOSIIDS (PERMIAN), 1967.
DESCRIBES FOUR SPECIES BELONGING TO THREE GENERA FROM ASSISTANCE FORMATION. SEE COSTALOSIA, A NEW STROPHALOSIID FROM EAST ASIA, N.Z. TRANS. ROY. SOC. 1966.
YUKON UPPER PALAEOZOIC BRACHIOPODS, 1967-69.

INCLUDES LARGE YUKON COLLECTIONS, CHIEFLY FROM TATONDUK RIVER, MADE BY GEOLOGICAL SURVEY OF CANADA. SEE COOL WATER FAUNAS FROM THE PERMIAN OF THE CANADIAN ARCTIC, NATURE, VOL. 5110, PP. 47-49.
PERMIAN BRACHIOPODS OF THAILAND, 1966-68.
NEW ZEALAND PERMIAN BRACHIOPODS, 1963-68.
SEE NEW ZEALAND PERMIAN BRACHIOPODS, N.Z. GEOL. SURV. PAL. BULL. 35, 1964.

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THE AMMONITE FAUNA OF THE KIALAGVIK FORMATION AT WIDE BAY, ALASKA PENINSULA, PART II. S. SOWERBYI ZONE, 1965-67.
SEE THE AMMONITE FAUNA OF THE KIALAGVIK FORMATION AT WIDE BAY, ALASKA PENINSULA, PART I. LOWER BAJOCIAN (AALENIAN), BULL. AMER. PALAEONT., VOL. 47, NO. 216, 1964.

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TRIASSIC AVICULOPECTINIDAE (BIVALVIA) FROM BRITISH COLUMBIA, 1965-67, M.SC. THESIS (VERMA).
SEE THE NORIAN PINE RIVER BRIDGE SECTION, BRITISH COLUMBIA AND THE SUCCESSION OF MONOTIS, JOUR. PALAEONT., VOL. 41, NO. 3, 1967.

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MICROPALAEONTOLOGY OF THE DEVONIAN SOUTHWESTERN ONTARIO, 1957-.
SEE MICROPALAEONTOLOGY OF THE DEVONIAN IN ONTARIO, CANADA, VOL. 2, ALBERTA SOCIETY OF PETROLEUM GEOLOGISTS (IN PRESS), CALGARY.

PETROLOGY AND PETROGRAPHY

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METAMORPHISM OF THE HORSETHIEF CREEK FORMATION AND ASSOCIATED ROCKS IN THE SELKIRK MOUNTAINS, BRITISH COLUMBIA, 1967-.

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ULTRAMAFIC ROCKS, AIKEN LAKE, FORT GRAHAME, BRITISH COLUMBIA, 1965-.
THE STUDY OF ULTRAMAFIC ROCKS THROUGH FIELD MAPPING AND PETROGRAPHIC STUDIES.

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PINCHI LAKE GLAUCOPHANE SCHIST BELT, 1967-70.

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THOR-ODIN GNEISS DOME, WEST UPPER ARROW LAKE, BRITISH COLUMBIA, 1963-.
A DETAILED STUDY OF PART OF SHUSWAP TERRANE.

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PINNACLE PEAKS, BRITISH COLUMBIA, 1 INCH TO 1 MILE, 1967-.
INVESTIGATION OF INTERMEDIATE ZONE GNEISS DOME COMPLEX TO COMPARE AND CONTRAST ITS STRUCTURAL AND METAMORPHIC DEVELOPMENT WITH THE DEEPER ZONE DOMES OF VALHALLA AND THOR-ODIN.

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CHILLIWACK BATHOLITH, BRITISH COLUMBIA, 1966-69, PH.D. THESIS.
A YOUNG BATHOLITHIC COMPLEX, MIOCENE IN PART. THE STUDY IS PART OF THE CORDILLERAN STRUCTURAL PROJECT. SEE GEOLOGY OF PART OF NORTHERN CASCADES, CAN. JOUR. EARTH SCIENCES, DECEMBER, 1967.

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A STUDY OF RECENT VOLCANIC CENTRES IN BRITISH COLUMBIA AND THEIR RELATION TO REGIONAL TECTONICS. SEE GEOL. SURV. CAN., PAPER 67-1, P. 89.

PETROLOGY AND PETROGRAPHY

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METAMORPHIC MINERAL ASSEMBLAGE OF GARNETIFEROUS GNEISSES, QUESNEL LAKE, MANITOBA, 1967-68- M.SC. THESIS.

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MINERALOGY AND PETROGRAPHY OF AN IGNEOUS INTRUSION, RICE LAKE AREA, MANITOBA, 1966-68- M.SC. THESIS.

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A COMPREHENSIVE SURVEY OF THE GEOLOGY, STRUCTURE, PETROGRAPHY, MINERALOGY AND CHEMISTRY OF ONE SQUARE MILE OF GRANITE IN COOPERATION WITH THE NEW BRUNSWICK RESEARCH AND PRODUCTIVITY COUNCIL TO DETERMINE THE FEASIBILITY OF A MUCH BROADER STUDY OF OTHER GRANITIC ROCKS OF NEW BRUNSWICK. SPECIAL EMPHASIS WILL BE PLACED ON THE APPLICATION OF THIS INFORMATION TO THE SEARCH FOR ASSOCIATED W, MO AND SN DEPOSITS. IT IS HOPED THAT ALL DATA WILL BE TREATED STATISTICALLY BY COMPUTER.

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PETROCHEMISTRY OF CARBONIFEROUS VOLCANIC ROCKS IN THE MOUNT PLEASANT CALDERA, NEW BRUNSWICK, 1967-69- M.SC. THESIS (SOONG).

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MINERALOGY AND PETROCHEMISTRY OF THE ST. GEORGE COMPLEX, NEW BRUNSWICK, 1965-69.
THE FIELD RELATIONSHIPS BETWEEN ROCK TYPES OF THIS ALKALI COMPLEX HAVE BEEN ESTABLISHED IN TWO SUMMERS OF FIELD WORK. CHEMICAL AND MINERALOGICAL WORK ON THE ROCKS IN KEY LOCALITIES IS UNDERWAY.

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AN INVESTIGATION OF THE STRUCTURAL SETTING, REGIONAL RELATIONS AND INTERNAL FABRIC OF CERTAIN

GRANITIC PLUTONS IN NOTRE DAME BAY. PROBLEMS INCLUDE THE ORIGIN AND SIGNIFICANCE OF **FLOW** FABRICS IN GRANITES, AND THE RELATIONS BETWEEN **AUREOLE** METAMORPHICS AND GRANITE FORMATION.

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STUDY OF ANORTHOSITES, LABRADOR AND QUEBEC, 1967-.
STUDY OF THREE LARGE ANORTHOSITIC INTRUSIONS BETWEEN MICHIKAMAU LAKE AND NAIR, COAST OF LABRADOR, AND ONE NEAR GAGNON, QUEBEC, IN ORDER TO COMPARE THE ROCK TYPES AND STRUCTURES IN THESE PLUTONS WITH THOSE IN THE PREVIOUSLY STUDIED MICHIKAMAU INTRUSION. SEE GEOL. SURV. CAN., PAPER 66-14, 1966.

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MINERALOGICAL VARATIONS IN PART OF THE MICHIKAMAU ANORTHOSITE MASS, LABRADOR, 1966-68, M.SC. THESIS (WARES).
A STUDY OF VARIATIONS IN OLIVINE AND PLAGIOCLASE USING THE ELECTRON MICROPROBE.

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GRANITES AND LAVAS OF EASTERN NEWFOUNDLAND, 1966-70.

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PETROLOGY AND MINERALOGY OF PRECAMBRIAN VOLCANIC ROCKS AROUND CONCEPTION BAY, NEWFOUNDLAND, 1966-.
PART OF A DETAILED STUDY OF THE VOLCANIC ROCKS OF THE HARBOUR MAIN GROUP. THE ROCKS IN THIS AREA INCLUDE WELL-DEVELOPED ACID ASH-FLOW TUFFS AND PORPHYRITIC BASIC VOLCANICS OF SUBAERIAL ORIGIN, ASSOCIATED WITH VOLCANIGENIC SEDIMENTS. TWO COMPLETE CYCLES OF ERUPTION AND SEDIMENTATION HAVE BEEN IDENTIFIED SO FAR.

781. PAPEZIK, V.S., FLEMING, J.M., MEMORIAL UNIV. OF NEWFOUNDLAND-
PETROLOGY OF BASIC VOLCANIC ROCKS IN THE WHALESBACK AREA NEAR SPRINGDALE, NEWFOUNDLAND, 1964-68-
M.SC. THESIS (FLEMING).
DETAILED PETROLOGY OF BASIC VOLCANIC ROCKS OF ORDOVICIAN AGE, WHICH ARE THE HOST-ROCKS OF COPPER MINERALIZATION IN THE WHALESBACK MINE. SEE BASIC VOLCANIC ROCKS OF THE WHALESBACK AREA, NEWFOUNDLAND-GEOL. ASSOC. CANADA, SPECIAL VOLUME NO, 2 (IN PRESS).

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STUDY OF VOLCANIC ROCKS AND ASSOCIATED ARSENIC-ANTINOMY MINERALS NEAR MORETON S HARBOUR, NOTRE DAME BAY, NEWFOUNDLAND, 1967-69- M.SC. THESIS (GIBBONS).
THE AREA NEAR MORETON S HARBOUR APPEARS TO BE ONE OF SEVERAL MAJOR VOLCANIC CENTERS IN THE ORDOVICIAN VOLCANIC BELT OF NEWFOUNDLAND. PROMINENT VEINS CONTAINING AS-SB MINERALS SHOW SPATIAL RELATIONSHIP TO NUMEROUS DYKES CUTTING BASIC VOLCANICS. THE SEQUENCE OF VOLCANIC ACTIVITY AND MINERALIZATION IS UNDER STUDY. X-RAY ANALYSIS OF ARSENOPYRITE WILL BE USED TO INDICATE P-T CONDITIONS OF MINERALIZATION. SEE NATIVE ARSENIC IN NEWFOUNDLAND- CAN. MINER., VOL.9, PT. 1, PP. 101-108, 1967.

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DISTRIBUTION OF TRACE ELEMENTS IN MAFIC ROCKS, 1966-.

Nova Scotia

784. AMOS, J.S., ACADIA UNIV.-
TEXTURAL EVIDENCE FOR CRYSTALLIZATION MECHANICS IN TRIASSIC BASALT, NOVA SCOTIA, 1967-68.

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GEOCHEMICAL STUDIES OF BASALTIC LAVA FLOWS OF NORTH MOUNTAIN, NOVA SCOTIA, 1966-.
STUDY OF THE DISTRIBUTION OF MAJOR, MINOR AND TRACE ELEMENTS IN DIFFERENT TYPES OF BASALTIC LAVA FLOWS. THE MAJOR ELEMENT DISTRIBUTION IS STUDIED BY X-RAY FLUORESCENCE AND BY COLORIMETRIC AND FLAME PHOTOMETRIC METHODS. MINOR AND TRACE ELEMENT DISTRIBUTION IS STUDIED BY EMISSION SPECTROGRAPHY.

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ANALYSIS OF TEXTURE AND PETROLOGIC VARIABLILITY IN TRIASSIC BASALT FLOWS AND DEVONIAN GRANITES OF NOVA SCOTIA, 1966-.

Northwest Territories

787. BARAGAR, W.R.A., GEOL. SURV. CANADA-
VOLCANICS OF THE COPPERMINE RIVER GROUP, NORTHWEST TERRITORIES, 1966-.
SEE GEOL. SURV. CAN., PAPER 67-1, PP. 26-28, 1967.

PETROLOGY AND PETROGRAPHY

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TALTSON LAKE - FORT RESOLUTE - GREAT SLAVE LAKE AREA, DISTRICT OF MACKENZIE, NORTHWEST TERRITORIES, 1965-.
REGIONAL STUDY OF GNEISSES AND MYLONITES BETWEEN MACDONALD FAULT AND NONACHO BASIN. SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 40.

Ontario

789. APPLEYARD, E.C., UNIV. OF WATERLOO-
SYN-OROGENIC ALKALINE ROCKS IN EASTERN ONTARIO AND NORTHERN NORWAY, 1966-.
THE OBJECTIVES ARE 3-FOLD- (1) TO ELUCIDATE THE CHRONOLOGY OF METAMORPHISM, PLUTONISM AND DEFORMATION DURING THE GRENVILLE OROGENY, (2) TO ESTABLISH THE RELATIONSHIP BETWEEN INDIVIDUAL ALKALINE ROCK OCCURRENCES AND LOCAL STRUCTURES, (3) TO INVESTIGATE THE PETROGENESIS OF THE ENTIRE SUITE OF ALKALINE ROCKS. SEE NEPHELINE GNEISSES OF THE WOLFE BELT, LYNDOCH TOWNSHIP, ONTARIO. PART I, STRUCTURE, STRATIGRAPHY AND PETROGRAPHY, CAN. JOUR. EARTH SCI., VOL. 4, PP. 371-395, 1967.

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VOLCANICS OF THE GRENVILLE (KALADAR-NORANDA AREA), QUEBEC, 1967-.

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THE MONGOWIN PLUTON, ESPANOLA, ONTARIO, 1966-67.
A BRIEF REPORT, IN PRESS, DESCRIBES THE PETROGRAPHY AND PETROLOGY OF A SMALL, ZONED PLUTON WHICH INTRUDES HURONIAN ROCKS SOUTH OF ESPANOLA. BOTRYOIDAL MAGNETITE OCCURS IN ULTRAMAFIC ROCKS OF THE PLUTON.

792. CHURCH, W.R., UNIV. OF WESTERN ONTARIO-
NIPISSING DIABASES OF THE PENOKEAN FOLD BELT, ONTARIO, 1966-.

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EVOLUTION OF KEEWATIN GREENSTONE BELTS, NORTHWESTERN ONTARIO, 1963-, PH.D. THESIS (NOSKA).

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CARBONATITE DIKES IN FRANCON QUARRY, ONTARIO, 1967-.

PETROLOGY AND PETROGRAPHY

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PETROLOGY OF CARBONATITE COMPLEXES ON THE JAMES BAY LOWLANDS OF ONTARIO, 1966-.

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PETROLOGY OF BASIC AND ULTRABASIC COMPLEXES IN HALIBURTON COUNTY, ONTARIO, 1965-67, M.SC. THESIS (WENBAN-SMITH AND GRIEVE).
CHEMISTRY OF THE DIFFERENTIATION OF THE GABBROS AND ULTRABASIC ROCKS AND A MICROPROBE STUDY OF THE CORONA DEVELOPMENT DURING GRANULITE FACIES METAMORPHISM.

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STRUCTURAL AND METAMORPHIC STUDIES IN THE VICINITY OF THE GREVILLE FRONT, NEAR SUDBURY, ONTARIO, 1964-, PH.D. THESIS (KWAK), M.SC. THESIS (HSU).
SEE THE GRENVILLE FRONT IN THE REGION EAST AND SOUTH OF SUDBURY, ONTARIO, GAC GUIDEBOOK, GEOL. OF PARTS OF E. ONTARIO AND W. QUEBEC, PP. 5-9, 1967.

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STRATIGRAPHY AND METAMORPHIC HISTORY OF THE HERMON FORMATION, SOUTHEASTERN ONTARIO, 1964-69, PH.D. THESIS (JENNINGS).
A STUDY OF MINERAL EQUILIBRIA, METAMORPHIC HISTORY AND ORIGINAL ROCK COMPOSITION IN A WELL-DEFINED BELT OF GRENVILLE METASEDIMENTARY AND METAVOLCANIC ROCKS.
SEE GEOLOGY OF CHANDOS TOWNSHIP, ONT. DEPT. MINES, GEOL. REPT. NO. 11, 1967.

799. MCCAMMON, B., SHAW, D.M., MCMASTER UNIV.-
GEOCHEMISTRY OF THE LOON LAKE PLUTON, 1967-68.
MAJOR AND TRACE ELEMENT DISTRIBUTIONS AND THE MAGMATIC FRACTIONATION TRENDS IN A COMPLEX OF GABBRO-DIORITE-SYENITE-GRANITE.

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A STUDY OF Y, LA AND CE IN APATITE, CALCITE AND FLUORITE FROM A SKARN IN THE GRENVILLE OF ONTARIO, 1967-68.

801. MCNUTT, R.H., KRETSCHMAR, U., MCMASTER UNIV.-
A STUDY OF THE FE-TI OXIDES FROM AN ANORTHOSITE NEAR PARRY SOUND, ONTARIO, 1966-68, M.SC. THESIS (KRETSCHMAR).

PETROLOGY AND PETROGRAPHY

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PETROLOGY OF AN ANORTHOSITE BODY, NEAR PARRY SOUND, ONTARIO, 1964-68, PH.D. THESIS (MASON).

803. NALDRETT, A.J., MOORHOUSE, W.W., JEN, L.S., GREENMAN, L., HEWINS, R.M., UNIV. OF TORONTO-
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SEE A STUDY OF THE STRATHCONA MINE AND ITS BEARING ON THE ORIGIN OF THE NICKEL-COPPER ORES OF THE SUDBURY DISTRICT, ONTARIO, JOUR. PETROL., VOL. 8, PP. 453-531.

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ELEMENT DISTRIBUTION BETWEEN COEXISTING MINERALS IN METAMORPHIC ROCKS, SOUTHERN ONTARIO, 1965-68-
PH.D. THESIS.

805. RUCKLIDGE, J.C., NALDRETT, A.J., UNIV. OF TORONTO-
PETROLOGICAL AND ELECTRON MICROPROBE STUDY OF DRILL CORES THROUGH THE SUDBURY IRRUPTIVE, 1967-68.

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METAMORPHIC HISTORY OF THE APSLEY PARAGNEISS, SOUTHEASTERN ONTARIO, 1958-.
A STUDY OF THE ORIGINAL COMPOSITION OF THE APSLEY GNEISS AND ITS GEOCHEMICAL RESPONSE TO INTRUSION OF THE LOON LAKE PLUTON. SEE GEOLOGY OF CHANDOS TOWNSHIP, ONT. DEPT. MINES, GEOL. REPT. NO. 11, 1958.

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COMPREHENSIVE PETROLOGICAL AND MINERALOGICAL STUDY OF THE SUDBURY BASIN IRRUPTIVE, ONTARIO, 1951-.
SEE SUDBURY IN TERMS OF UPPER-MANTLE PETROLOGY, PROCEEDINGS OF THE GEOL. SOC. AMER., P. 18, 1965.

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RELATIONSHIP OF DEFORMATION TO THE EMPLACEMENT OF IGNEOUS ROCKS IN SOUTHWESTERN ONTARIO, 1967-68-
M.SC. THESIS.

809. WYNNE-EDWARDS, H.R., FLETCHER, C.J.N., QUEEN*S UNIV.-
LOCAL EQUILIBRIUM IN A TWO-PYROXENE AMPHIBOLITE, ONTARIO, 1965-68.

ELECTRON PROBE INVESTIGATION OF THE VARIATIONS IN CHEMICAL COMPOSITION OF MINERALS IN A SMALL AREA OF A LAYERED TWO-PYROXENE AND HORNBLENDE GNEISS. SEE GEOLOGY OF TICHBORNE (EAST HALF) MAP-AREA, ONTARIO, GEOL. SURV. CAN., PAPER 64-56, 1965.

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STRUCTURES IN GREY GNEISS AT PARHAM, ONTARIO, 1967-69, PH.D. THESIS (WALLACH).
THE STRUCTURE AND PETROLOGY OF A GREY GNEISS COMPLEX NEAR PARHAM IS TO BE COMPARED TO THOSE OF SURROUNDING ROCKS OF THE GRENVILLE GROUP TO ASSESS THE RELATIVE AGES OF THE TWO CATEGORIES OF ROCKS, AND TEST THE HYPOTHESIS THAT THE GREY GNEISS REPRESENTS BASEMENT. SEE GEOLOGY OF TICHBORNE (EAST HALF) MAP-AREA, ONTARIO, GEOL. SURV. CAN., PAPER 64-56, 1965.

Quebec

811. AHMEDALI, S.T., MCGILL UNIV.-
PETROLOGY OF ANORTHOSITES, SEPT. ILES IGNEOUS COMPLEX, QUEBEC, 1964-68, PH.D. THESIS.

812. BARAGAR, W.R.A., GEOL. SURV. CANADA-
VOLCANICS OF THE GRENVILLE (KALADAR-NORANDA AREA), QUEBEC, 1967-.

813. BLAIS, R.A., DE ROSEN, A. (MISS), ECOLE POLYTECHNIQUE-
VOLCANOLOGY AND ASSOCIATED SULPHIDE DEPOSITS OF THE NORANDA AREA, NORTHWESTERN QUEBEC, 1966-70.
LONG-TERM PROJECT INVOLVING DETAILED PETROGRAPHIC AND GEOCHEMICAL INVESTIGATIONS OF VOLCANIC HORIZONS, STUDY OF METAMORPHIC EFFECTS AROUND INTRUSIVES AND IN DALMATIANITE PIPES, AND STRUCTURAL STRATIGRAPHIC STUDIES. SEE LA TRANSFORMATION DE L HEDENBERGITE MANGANESIFERE EN ILVAITE DANS LES SULFURES DE CUIVRE ET DE ZINC DE LA REGION DE NORANDA, BULL. SOC. FR. MINER. CRIST, VOL. 100, 1966.

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RADIOACTIVATION DETERMINATION OF PD, OS, IR AND AU IN ROCKS AND MINERALS OF THE MT. ALBERT UTRABASIC PLUTON, GASPE, QUEBEC, 1966-68, M.SC. THESIS (CHYI).
NEUTRON ACTIVATION ANALYSIS WAS USED TO MEASURE THE CONCENTRATIONS OF PD, OS, IR AND AU IN SILICATE AND OXIDE MINERALS IN THE MT. ALBERT ULTRABASIC PLUTON. ALSO PRECIOUS METAL FRACTION BETWEEN

SERPENTINIZED AND UNSERPENTINIZED ROCKS WAS INVESTIGATED. ENRICHMENT TRENDS IN LATE CHROMITE SEGREGATIONS WERE ALSO STUDIED. RESULTS TO DATE INDICATE THAT ALL METALS ARE IN THE 1 TO 10 PPM RANGE, THAT THERE IS LITTLE FRACTIONATION BETWEEN OXIDES (CHROMITE) AND SILICATES AND THAT REDISTRIBUTION OF PRECIOUS METALS DURING SERPENTINIZATION IS UNLIKELY.

815. DAVIES, R., MCGILL UNIV.-
PETROLOGY OF SYENITE AND GNEISSES, SAGUENAY COUNTY, QUEBEC, 1963-68.

816. DESCARREAUX, J., UNIVERSITE LAVAL-
ETUDE DES ROCHES VOLCANIQUES DE L ABITIBI, 1967-69, THESE DE DOCTORAT.

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ISOTOPIC AND PETROLOGIC STUDIES OF ALKALINE ROCKS, INCLUDING CARBONATITES, ASSOCIATED WITH THE ST. LAWRENCE RIFT SYSTEM, 1966-68, M.SC. THESIS (BARTON).

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ISOTOPIC AND PETROLOGIC STUDY OF THE BROME-SHEFFORD INTRUSIVES OF THE MONTEREGIAN IGNEOUS PROVINCE, 1967-69, PH.D. THESIS (PATTISON).

819. EMSLIE, R.F., GEOL. SURV. CANADA-
STUDY OF ANORTHOSITES, LABRADOR AND QUEBEC, 1967-. STUDY OF THREE LARGE ANORTHOSITIC INTRUSIONS BETWEEN MICHIKAMAU LAKE AND NAIR, COAST OF LABRADOR, AND ONE NEAR GAGNON, QUEBEC, IN ORDER TO COMPARE THE ROCK TYPES AND STRUCTURES IN THESE PLUTONS WITH THOSE IN THE PREVIOUSLY STUDIED MICHIKAMAU INTRUSION. SEE GEOL. SURV. CAN., PAPER 66-14, 1966.

820. GREIG, S., MCGILL UNIV.-
PETROLOGY OF THE INTRUSIVE AT RIGAUD, QUEBEC, 1966-68, M.SC. THESIS.

821. GROVE, E.W., MCGILL UNIV.-
PETROCHEMICAL AND PETROLOGIC STUDIES, LAKE MIQUELON, QUEBEC, 1963-68, PH.D. THESIS.

PETROLOGY AND PETROGRAPHY

822. HARDY, R., QUEBEC DEPT. OF NATURAL RESOURCES-
MINERALOGICAL ASSEMBLIES OF METAGABBROS OF THE NORTHERN PART OF THE LABRADOR TROUGH, QUEBEC, 1966-67, M.SC. THESIS.

823. HODGSON, C.J., MCGILL UNIV.-
PETROCHEMISTRY OF MONTEREGIAN DYKES, QUEBEC, 1965-68, PH.D. THESIS.

824. HOGARTH, D.D., LAMBERT, R.ST.J., NIXON, C.M., UNIV. OF OTTAWA
PETROLOGIC-STRUCTURAL STUDY OF ROCKS IN THE OLD CHELSEA REGION OF QUEBEC, 1960-70- M.SC. THESIS (NIXON). INCLUDES GEOLOGICAL MAPPING, STUDIES OF RELATIONS OF IGNEOUS ROCKS INCLUDING DATING BY SR/RB AND K/AR METHODS, STUDY OF ALKALIC ROCKS AND INTRUSIVE CARBONATES, AND METAMORPHISM, ESPECIALLY WITH RESPECT TO CARBONATE ROCKS.

825. JACOBY, R.S., WYNNE-EDWARDS, H.R., QUEEN S UNIV.-
MICROPERTHITE GNEISS COMPLEX IN THE BASKATONG MAP-AREA, QUEBEC, 1965-68, PH.D. THESIS (JACOBY). THE ORIGIN OF VARIOUS CHARNOCKITIC AND MICROPERTHITIC GNEISSES FORMING AN ISOLATED GRANULITE-FACIES COMPLEX WITHIN THE GRENVILLE PROVINCE IS BEING STUDIED BY GEOCHEMICAL AND STRUCTURAL TECHNIQUES. SEE GEOLOGY OF BASKATONG RESERVOIR AREA, QUEBEC DEPT. NATURAL RES., GEOL. REPT. (IN PRESS).

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BOUNDARY RELATIONSHIPS BETWEEN THE PIPMUACAN ANORTHOSITE BODY AND THE LAC ROUVRAY GNEISS COMPLEX, QUEBEC, 1966-69, PH.D. THESIS (KEHLENBECK). A STUDY OF THE TECTONIC HISTORY AND CRYSTALLIZATION OF PART OF THE LAC ST. JEAN ANORTHOSITE COMPLEX.

827. MARCHAND, M., MCGILL UNIV.-
PETROLOGY OF L EPIPHANIE SILL, QUEBEC, 1967-69, M.SC. THESIS.

828. MARTIGNOLE, J., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME)-
MICROTECTONICS OF SHAWINIGAN AREA, QUEBEC, 1965-69, PH.D. THESIS, UNIV. OF MONTREAL.

PETROLOGY AND PETROGRAPHY

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ANALYSE STRUCTURALE DES SERIES CATAZONALES DE LA PROVINCE DE GRENVILLE DANS LE SUD DU QUEBEC, 1965-, THESE DE MAITRISSE (HOCQ).
VOIR TECTONIQUE, INTRUSION, ANATEXIE DANS LES SERIES CATAZONALES DE LA REGION DE SHAWINIGAN, GUIDE-BOOK, GEOL. ASSOC. CANADA, PP. 87-97, 1967.

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STUDY OF CRYPTOVOLCANIC ROCKS OF THE CIRCULAR STRUCTURE BETWEEN MOUCHALAGAN AND MANICOUAGAN LAKES, QUEBEC, 1965-68, PH.D. THESIS.

831. PAJARI, G.E., UNIV. OF NEW BRUNSWICK-
THE MINERALOGY AND PETROCHEMISTRY OF MOUNT JOHNSON, MONTEREGIAN HILLS, QUEBEC, 1961-67.
A DETAILED DESCRIPTION OF THE MINERALOGY AND CHEMISTRY OF AN ALKALI INTRUSION WITH PARTICULAR EMPHASIS ON THE MECHANISM OF DIFFERENTIATION.

832. PATTISON, E.F., MCGILL UNIV.-
PETROLOGICAL AND ISOTOPIC STUDY OF MONTEREGIAN ROCKS, QUEBEC, 1966-69, PH.D. THESIS.

833. PHILPOTTS, A.R., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME), MCGILL UNIV.-
DETAILED STUDY OF THE UNDER-SATURATED ROCKS OF ST. BRUNO AND ROUGEMONT MOUNTAINS, QUEBEC, 1967-68.

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NEPHELINE SYENITES, MOUNT STE. HILAIRE, QUEBEC, 1962-68, PH.D. THESIS.

835. SAUVE, P., UNIVERSITE LAVAL-
ETUDE DE LA DIFFERENTIATION DANS UN FILON-COUCHE DE GABBRO, 1966-69.
LE PLAGIOCLASE EST FORTEMENT CONCENTRE DANS LA PARTIE MEDIANE ET SUPERIEURE D UN FILON-COUCHE GABBROIQUE PRES DU LAC GERIDO DANS LA FOSSE DU LABRADOR. LA DIFFERENTIATION EST ETUDIEE SURTOUT A L AIDE D ANALYSES CHIMIQUES CAR LES MINERAUX PRIMAIRES ONT ETE LARGEMENT ALTERES PAR UN FAIBLE METAMORPHISME. LES SULFURES DE FE-CU-NI ONT PROBABLEMENT ETE CONCENTRES PAR UN PROCESSUS MAGMATIQUE. VOIR REGION DES LACS GERIDO ET THEVENET, NOUVEAU QUEBEC, MINISTERE DES RICHESSES NATURELLES DU QUEBEC, R.G. 104, 124 P., 1965.

PETROLOGY AND PETROGRAPHY

836. VALIQUETTE, G., QUEBEC DEPT. OF NATURAL RESOURCES-
STUDY OF UNDER-SATURATED ROCKS OF BROME AND SHEFFORD MOUNTAINS, QUEBEC, 1967-68.

837. VALIQUETTE, G., ECOLE POLYTECHNIQUE-
ETUDE STRUCTURALE ET PETROGRAPHIQUE DES ROCHES ALCALINES DES MONTAGNES DE BROME ET SHEFFORD, 1966-69.
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838. WOUSSEN, G., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME)-
METAGABBRO AND METABASALT NORTHEAST OF WAKVACK LAKE, LABRADOR TROUGH, QUEBEC, 1967-70, PH.D. THESIS.

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THE STE. VERONIQUE ALKALI SYENITE BODY, QUEBEC, 1967-69, PH.D. THESIS (KRAUSE).
PETROLOGICAL AND GEOCHEMICAL STUDY OF THE PHASES OF AN ALKALINE PLUTON IN THE GRENVILLE PROVINCE. SEE MONT LAURIER AND KEMPT LAKE MAP-AREA, QUEBEC, GEOL. SURV. CAN., PAPER 66-32, 1966.

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840. PYKE, M.W., UNIV. OF ALBERTA-
PETROGENESIS OF GRANITIC ROCKS IN THE PELICAN NARROWS AREA, SASKATCHEWAN, 1961-68, PH.D. THESIS.
A STUDY OF MAJOR AND MINOR ELEMENT VARIATION IN FELDSPAR COMPOSITION WILL BE MADE, TO DETERMINE THE MODE OF ORIGIN OF CONCORDANT PEGMATITE SHEETS IN THE KISSEYNEW GNEISS COMPLEX. SEE THE GEOLOGY OF THE PELICAN NARROWS AND BIRCH PORTAGE AREAS, SASKATCHEWAN, DEPT. OF MINERAL RESOURCES, SASKATCHEWAN, REPT. NO. 93, 1966.

PETROLOGY AND PETROGRAPHY

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841. SMITH, D.G.W., MORTON, R.D., UNIV. OF ALBERTA-
PRELIMINARY INVESTIGATIONS OF THE BEAVER RIVER SYENITE, YUKON TERRITORIES, 1967-69.

General Problems

842. AUMENTO, F., GEOL. SURV. CANADA-
THE MID-ATLANTIC RIDGE NEAR 45 DEGREES N, 1966-70.
CLOSELY SPACED ROCK DREDGING, IN CONJUNCTION WITH DETAILED BATHYMETRIC, GRAVIMETRIC AND MAGNETIC SURVEYS, ARE YIELDING A LARGE SUITE OF SPECIMENS THAT MAY APPROACH BEING REPRESENTATIVE OF AN AREA OF THE MID-ATLANTIC RIDGE. THOLEIITIC, HIGH ALUMINA, TRANSITIONAL AND ALKALI BASALTS HAVE BEEN RECOVERED AND ANALYZED. CHEMICAL DATA SHOWS CORRELATION WITH DEPTH OF EXTRUSION AND TOPOGRAPHY. CHRONOLOGICAL DATA INDICATE THAT NUMEROUS EXTRUSIVE CYCLES, IN DIFFERENT STAGES OF DEVELOPMENT, ARE CURRENTLY ACTIVE. SEE MAGMATIC EVOLUTION ON THE MID-ATLANTIC RIDGE- EARTH AND PLANETARY SCIENCE LETTERS, VOL. 2, NO. 3, PP. 225-230, 1967.

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ECLOGITES OF THE SAN MARTINO AREA, SESIA LANZA ZONE, ITALY, 1967-68, PH.D. THESIS.

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INVESTIGATION OF PETROGENY S RESIDUAL SYSTEM AT 6 KB. WATER PRESSURE AND HIGHER PRESSURES, 1967-70, PH.D. THESIS (KIM).

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GEOCHEMISTRY OF ECLOGITES, 1961-.
ARIEGITES, 1965-.

846. CLARK, A.H., FARRAR, E., QUEEN S UNIV.-
RELATIONSHIPS BETWEEN GRANITIC DIFFERENTIATION AND TIN-TUNGSTEN MINERALIZATION IN THE SOUTHERN PART OF THE HERCYNIAN METALLOGENETIC PROVINCE OF PORTUGAL, 1967-70.
THE INTER-RELATIONSHIPS BETWEEN GRANITIC INTRUSION AND DIFFERENTIATION AND TIN-TUNGSTEN MINERALIZATION ARE BEING STUDIED THROUGH GEOCHEMICAL AND ISOTOPIC INVESTIGATIONS OF BARREN AND ORE-BEARING INTRUSIONS. SEE PRELIMINARY STUDY OF THE TEMPERATURES AND CONFINING PRESSURES OF GRANITE EMPLACEMENT AND MINERALIZATION, PANASQUEIRA, PORTUGAL, TRANS. INSTN. MINING AND

METALL., VOL. 73, PP. 813-824, AND VOL. 74, PP. 663-672, 1964 AND 1965.

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THE GENESIS OF DISSEMINATED, STRATA-BOUND COPPER DEPOSITS, NORTHERN CHILE, 1967-70.
SYSTEMATIC STUDIES OF THE VOLCANIC ENVIRONMENT, GEOCHEMISTRY, AND MINERALOGY OF THESE EXTENSIVE, LOW-GRADE DEPOSITS HAS BEEN UNDERTAKEN IN ORDER TO ESTABLISH THEIR SPATIAL AND GENETIC RELATIONSHIPS WITH THE EXTRUSIVE HOST ROCKS.

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SHOCK METAMORPHISM IN CANADA CRATERS, 1962-.
DEFORMATION ATTRIBUTED TO HIGH-PRESSURE SHOCK WAVES HAS BEEN IDENTIFIED AT FIFTEEN CANADIAN CRATERS. THE SIMILARITY BETWEEN NATURAL MASKELYNITE, AN ISOTROPIC FORM OF PLAGIOCLASE, AND ARTIFICALLY SHOCKED MASKELYNITE HAS BEEN DEMONSTRATED BY OPTICAL, X-RAY AND INFRARED SPECTROSCOPIC METHODS. DIAMOND DRILLING AT SEVERAL CRATERS HAS SHOWN A SYSTEMATIC DECREASE IN THIS DEFORMATION WITH DEPTH, CORROBORATING AN ORIGIN BY HYPERVELOCITY METEORITE IMPACT. SEE NASA CONFERENCE ON SHOCK METAMORPHISM OF NATURAL MATERIALS, 1967 (IN PRESS).

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SEE GEOL. SURV. CAN., PAPER 63-37, 1963.

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GEOCHEMISTRY AND PETROLOGY OF ECLOGITES AND RELATED ROCKS, 1966-70.
SEE CHEMISTRY AND MINERALOGY OF THE ECLOGITE FROM THE TYPE LOCALITY (SAUALPE, AUSTRIA), GEOL. SOC. AMER. ANN. MEETING, NEW ORLEANS, 1967, ABSTRACT, P. 157.

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MINERALOGY AND PETROLOGY OF LI-BEARING PEGMATITES, 1966-68, PH.D. THESIS (ARMSTRONG).
SEE MINER. MAG., VOL. 36, PP. 578-582.

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PHASE RELATIONS IN THE SYSTEM NAALSIO4-KALSIO4-SIO2

WITH THE ADDITION OF FE3O4, NA2SIO3 AND K2SIO3, 1967-69, PH.D. THESIS (PLATT).
SEE MELTING RELATIONS IN ALKALINE ROCKS FROM GREENLAND, CANADA AND AFRICA, MEDD. OM GRONLAND, BD. 181, NR. 9, 60 P., 1967.

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MELTING RELATIONS IN UNDERSATURATED ALKALINE ROCKS, 1963-70, M.SC. THESIS (SOOD).
SEE MELTING RELATIONSHIPS AND CRYSTALLIZATION SEQUENCES OF UNDERSATURATED ALKALIC ROCKS, GEOL. SOC. AMER. ANN. MEETING, NEW ORLEANS (1967), ABSTRACT, P. 53.

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ELEMENT ABUNDANCES OF THE CANADIAN SHIELD, 1962-.
DETERMINATION OF THE AVERAGE COMPOSITION OF THE CANADIAN SHIELD, THE COMPOSITION OF INDIVIDUAL SEGMENTS OF THE SHIELD, AREAL CHEMICAL VARIATION WITHIN CRATONIC SEGMENTS AND THE RELATIONSHIP OF CHEMICAL ABUNDANCES TO MAPPED LITHOLOGY. SEE NATURE, VOL. 211, NO. 5055, PP. 1245-1249.

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PHASE RELATIONS OF CHLORITE AND CHLORITOID IN LOW GRADE METAMORPHIC ROCKS, 1967-70, PH.D. THESIS (GRIEVE).
SEE PHASE RELATIONSHIPS OF CHLORITES IN THE SYSTEM MGO-AL2O3-SIO2-H2O, AMER. MINERAL., VOL. 51, PP. 353-380, 1966.

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A COMPREHENSIVE STUDY OF CANADIAN METEORITES USING CHEMICAL METALLOGRAPHIC, MINERALOGIC AND ELECTRON MICROPROBE TECHNIQUES IS WELL UNDERWAY, ITS COMPLETION IS DELAYED BY STUDIES AND INVESTIGATIONS OF NEW FIREBALLS WHICH SEEM TO HAVE AN AFFINITY FOR WESTERN CANADA. SEE REVELSTOKE, A NEW TYPE OF CARBONACEOUS CHONDRITE, GEOCHIMICA ET COSMOCHIMICA ACTA, VOL. 31,

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CANADIAN CARBONATITES, 1966-68, M.SC. THESIS (RICH).
AN ATTEMPT TO ESTABLISH THE ORIGIN AND GENESIS OF CARBONATITES USING STABLE ISOTOPE STUDIES, PARTICULARLY SULPHUR OXYGEN AND CARBON.

PETROLOGY AND PETROGRAPHY

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MELTING RELATIONS OF SOME BASIC AND ULTRABASIC IGNEOUS ROCKS, 1966-68.
SEE GEOLOGICAL EXPEDITION TO THE TERTIARY BASALT REGION OF SCORESBY SUND, EAST GREENLAND, NATURE, VOL. 212, P. 603, 1966.

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MINERALOGY AND PETROLOGY OF AN ALKALINE COMPLEX CONTAINING MEMBERS OF THE WOHLERITE GROUP, 1964-, PH.D. THESIS (AARDEN).

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THALLIUM GEOCHEMISTRY, 1967-69, M.SC. THESIS (GOMES).
STUDY OF TL-RB-K ABUNDANCES IN COEXISTING MINERALS, TO PROVIDE INFORMATION ON THE EVOLUTION OF THE MANTLE-CRUST SYSTEM. SEE THE GEOCHEMISTRY OF GA, IN AND TL, PHYS. AND CHEM. OF EARTH, VOL. 2, PP. 164-211, 1957.

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MECHANISM OF INTRUSION OF SILLS, 1966-.

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MATRIX CORRECTIONS FOR X-RAY ANALYSIS, 1965-67.
SEE MATRIX CORRECTIONS FOR X-RAY FLUORESCENCE SPECTROMETRY BY DIGITAL COMPUTER, CAN. SPECT., P. 12, 1967.

PETROCHEMICAL VARIATIONS IN SIMULTANEOUSLY COOLED BASALT AND RHYOLITE, STRETISHORN DIKE, ICELAND, 1965-67.
INVOLVES A COMPARISON OF THE BEHAVIOUR AND DEPARTURES FROM LINEAR PROPORTIONALITY OF GEOCHEMICALLY COHERENT ELEMENTS SUCH AS K, RB, TH, BA AND CA, SR, OR FE, TI, MN. SOME ELEMENTS APPEAR IN THE HYDRID ROCKS IN THE PROPORTION OF SIMPLE MIXTURES, OTHERS HAVE BEEN SELECTIVELY ADDED OR SUBTRACTED.

GEOCHEMISTRY OF THE TERLINGUA-SOLITARIO PROVINCE, WEST TEXAS, 1965-67.
THE SODA-RICH ROCKS OF WEST TEXAS HAVE BEEN SHOWN BY SEVENTY ANALYSES TO RANGE FROM PICRITE TO MICRO-SYENITE. TI, SR CONCENTRATIONS ARE UNUSUALLY HIGH. ORIGINS OF SYENITE STRINGERS IN SYENODIORITE AND LAYERING ALONG MARGINS OF INTRUSIONS HAVE BEEN EXPLAINED.

PETROLOGY AND PETROGRAPHY

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CHEMICAL WEATHERING OF SERPENTINES IN PUERTO RICO, 1966-.
AN INVESTIGATION OF THE ACCUMULATION OF TRACE ELEMENTS IN LATERITIC WEATHERING PRODUCTS IN RELATION TO SURFACE CHEMICAL PROPERITES OF IRON OXIDES.

864. HUTCHINSON, R.W., UNIV. OF WESTERN ONTARIO-
NATURE AND ORIGIN OF PEGMATITES AND PEGMATITIC MINERAL DEPOSITS, 1967-.
THE MONTGARY, OR CHEMALLOY PEGMATITE IN SOUTH-EASTERN MANITOBA IS ONE OF THE WORLD S MOST COMPLEX RARE-ELEMENT PEGMATITES AND ON THIS BASIS ALONE MERITS BROADLY BASED INVESTIGATIONS. SUCH WORK IS NOW BEING INITIATED AND WILL CONTINUE FOR SOME TIME. SEE GEOLOGY OF THE MONTGARY PEGMATITE, ECON. GEOL., VOL. 54, NO. 8, 1959.

865. JOHNSON, A.E., CLARK, A.H., QUEEN*S UNIV.-
THE ROLE OF METAMORPHISM IN THE DEVELOPMENT OF THE MINERAL ASSEMBLAGES OF MASSIVE SULPHIDE DEPOSITS, 1967-70, PH.D. THESIS (JOHNSON).
THE EFFECTS OF METAMORPHISM ON THE TEXTURES, MINERALOGY, AND GEOCHEMISTRY OF MASSIVE, STRATA-BOUND SULPHIDE ORES OF VOLCANIC AFFINITIES WILL BE ASSESSED BY COMPARATIVE STUDIES OF DEPOSITS OCCURRING IN HOST ROCKS OF DIFFERENT METAMORPHIC GRADES.

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MORPHOLOGY OF CRATERS AND MECHANICS OF CRATERING, 1958-.
THE STUDY OF CRATERS AT DEFENCE RESEARCH ESTABLISHMENT, SUFFIELD STARTED AS A PRAGMATIC STUDY AIMED AT ELUCIDATING CRATER SCALING LAWS IN ORDER TO PROVIDE PLANNING DATA FOR LARGE SCALE TRIALS. WITH THE DEVELOPMENT OF A VARIETY OF NEW TECHNIQUES FOR STUDYING THE SUBSURFACE DEFORMATIONS ASSOCIATED WITH CRATERS, THIS STUDY EXPANDED TO INCLUDE MORE BASIC INVESTIGATIONS OF CRATER MORPHOLOGY.
A GREAT INCREASE IN INTEREST AND IMPORTANCE AROSE WHEN IT WAS FOUND THAT THE CRATERS PRODUCED WITH CHARGES OF MORE THAN A FEW TONS OF TNT DEVELOPED CENTRAL UPLIFT STRUCTURES. THIS BECAME MOST PRONOUNCED WITH THE 500 TON (SNOWBALL) CRATER WHICH DUPLICATED MANY FEATURES COMMON TO ASTROBLEMES BUT NOT PREVIOUSLY FOUND IN ASSOCIATION WITH EXPERIMENTALLY PRODUCED CRATERS. SINCE THE FORMATION OF THE SNOWBALL CRATER IN 1964 MUCH EFFORT HAS BEEN DEVOTED TO A DETAILED STUDY OF ITS MORPHOLOGY, AND SUBSEQUENTLY SEVERAL

ADDITIONAL CRATERS HAVE BEEN PRODUCED WITH CENTRAL UPLIFTS, SOME OF WHICH CONTAIN ADDITIONAL FEATURES NOT NOTED ON SNOWBALL. THIS WORK IS CONTINUING WITH THE SUPPORT OF U.S. AGENCIES (AND FUNDING) AND IN ASSOCIATION WITH THE DOMINION OBSERVATORY AND THE USGS BRANCH OF ASTROGEOLOGIC STUDIES. SEE THE SNOWBALL CRATER - GENERAL INFORMATION AND BACKGROUND, SUFFIELD TECHNICAL NOTE NO. 187.

867. KRETZ, R., UNIV. OF OTTAWA-
ROCK METAMORPHISM.

868. LANGFORD, F.F., SINGH, S.K., UNIV. OF SASKATCHEWAN-
PHASE PETROLOGY OF GRANITE- M.SC. THESIS (SINGH).

869. MITCHELL, R.H., CROCKET, J.H., MCMASTER UNIV.-
SR ISOTOPIC STUDY OF KIMBERLITE, 1966-69, PH.D. THESIS.
THE SR ISOTOPIC COMPOSITION OF KIMBERLITES FROM SOUTH AFRICA HAS BEEN MEASURED MASS SPECTROMETRICALLY. BOTH MATRIX AND PHENOCRYSTS HAVE BEEN ANALYZED. A COMPARISON OF MATRIX AND PHENOCRYST ISOCHRONS SHOULD PROVIDE DATA ON TIME OF CRUSTAL EMPLACEMENT AND TIME OF KIMBERLITE GENERATION.

870. LONGE, R.B., MCGILL UNIV.-
GENESIS OF VOLCANIC SULPHIDES, 1965-68, PH.D. THESIS.

871. PAJARI, G.E., GUNTER, W.D., HUDGINS, A., TREMBATH, L.T., UNIV. OF NEW BRUNSWICK-
THE TRIASSIC VOLCANICS AND INTRUSIONS OF NEW BRUNSWICK AND NOVA SCOTIA, 1965-- PH.D. THESIS (GUNTER).
THE RESEARCH IS PLANNED TO DEFINE THE CHARACTERISTICS, I.E. CHEMICAL, MINERALOGICAL AND TEXTURAL, OF TRIASSIC MAGMATISM AND TO DESCRIBE THE EXTENT AND MECHANISM BY WHICH DIFFERENTIATION OCCURRED IN THE SILLS AND FLOWS (E.G. GRAND MANAN SILL, ETC.).

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CRYSTALLIZATION OF BASALT, 1962-, PH.D. THESES (HILL, HAUGHTON), M.SC. THESIS (CALEY).
THE CRYSTALLIZATION OF BASALT AS A FUNCTION OF OXYGEN FUGACITY IS BEING STUDIED. DETAILED STUDIES OF THE CRYSTALLIZATION OF THREE BASALTIC ROCKS AT DIFFERENT OXYGEN FUGACITIES HAVE BEEN COMPLETED AND THE RELATIONSHIPS BETWEEN THE CRYSTALLIZATION OF CHROMITE AND MAGNETITE HAVE BEEN OUTLINED. SEE STABILITY OF SPINEL IN BASALT, GEOL. SOC. AMER. MEETING, 1967

(ABSTRACT).

873. RUCKLIDGE, J.C., FAWCETT, J.J., UNIV. OF TORONTO-
PETROLOGICAL AND ELECTRON MICROPROBE STUDY OF BASALTS FROM SCORESBY SOUND, EAST GREENLAND, 1965-68.
SEE GEOLOGICAL EXPEDITION TO THE TERTIARY BASALT REGION OF SCORESBY SOUND, EAST GREENLAND, NATURE, VOL. 212, PP. 603-604.

874. SCHWERDTNER, W.M., OLDERSHAW, M.A., UNIV. OF TORONTO-
ORIENTATION OF ELONGATE AND PLATY MINERALS DURING MAGMATIC FLOW, 1967-.
A STUDY OF THE GLAMORGAN GABBRO, COUNTY OF HALIBURTON, ONTARIO. MOST ROCKS COMPRISING THE BODY ARE HIGHLY METAMORPHOSED AND RECRYSTALLIZED, BUT LOCALLY THE FLUIDAL TEXTURE HAS BEEN RETAINED. THIS TEXTURE IS BEING ANALYSED.

875. SCHWERDTNER, W.M., STESKY, R.M., UNIV. OF TORONTO-
MECHANICAL SIGNIFICANCE OF HORNBLENDE LINEATIONS IN METAMORPHIC TECTONITES, 1961-.
TO DETERMINE IF CONSPICUOUS HORNBLENDE LINEATIONS CAN SERVE AS INDICATORS OF DIRECTIONS AND RELATIVE MAGNITUDES OF MESOSCOPIC FINITE STRAIN. ROCKS FROM THREE AREAS HAVE BEEN STUDIED- (1) HELLANDSJOEEN, CLOSE TO TRONTHEIM, NORWAY, (II) TROUT LAKE AREA, LAC RA RONGE MAP SHEET, SASKATCHEWAN, (III) CHANDOS LAKE, ONTARIO. SEE PREFERRED ORIENTATION OF HORNBLENDE IN A BANDED HORNBLENDE GNEISS, AMER. JOUR. SCIENCE, VOL. 262, PP. 1212-1229, 1964.

876. SKIPPEN, G.B., CARLETON UNIV.-
AN EXPERIMENTAL STUDY OF THE METAMORPHISM OF SILICEOUS CARBONATES, 1967-69.
THE RESEARCH IS INTENDED TO PRODUCE A PETROGENETIC GRID FOR THOSE MARBLES IN WHICH THE FOLLOWING PHASES ARE OBSERVED- QUARTZ, CALCITE, DOLOMITE, TALC, TREMOLITE, DIOPSIDE, FORSTERITE, ENSTATITE, WOLLASTONITE. SEE IGNEOUS AND METAMORPHIC REACTIONS INVOLVING GAS EQUILIBRIA, IN RESEARCHES IN GEOCHEMISTRY, VOL. II, ED. P.H. ABELSON, JOHN WILEY AND SONS, NEW YORK.

877. SMITH, C.H., AND OTHERS, GEOL. SURV. CANADA-
ULTRAMAFIC ROCKS IN CANADA, 1957-.
DETAILED FIELD, PETROGRAPHIC, AND CHEMICAL STUDIES OF ULTRAMAFIC INTRUSIONS OF CANADA REPRESENTATIVE OF DIFFERENT PETROLOGIC TYPES, AGE (PRECAMBRIAN

TO JURASSIC), AND STRUCTURAL ENVIRONMENTS. ULTIMATE OBJECTIVES ARE- (I) SYNTHESIS OF PETROLOGIC DATA TO EVOLVE COHERENT THEORIES OF ORIGIN AND CLASSIFICATION OF ULTRAMAFIC ROCKS, (II) ASSESSMENT AND DEFINITION OF THE RELATIONSHIP OF ULTRAMAFIC INTRUSIONS AND ASSOCIATED MINERAL DEPOSITS, AND (II) TO PROVIDE BASIC DATA FOR AN ULTRAMAFIC MAP OF CANADA.

878. SMITH, D.G.W., UNIV. OF ALBERTA-
MINERALOGY OF SOME GARNETIFEROUS PHYLLITES FROM THE DALRADIAN OF ARGYLLSHIRE, SCOTLAND, 1967-70.
A SERIES OF GREENSCHIST FACIES - PHYLLITES HAVE BEEN COLLECTED FROM THE DALRADIAN ROCKS NEAR STRACHN, ARGYLLSHERE, SCOTLAND. THESE ARE DOMINANTLY MUSCOVITE-CHLORITE-QUARTZ-ALBITE PHYLLITES BUT GARNET AND BIOTITE BEARING HORIZONS ARE INTERLAYERED. THE MINERALOGY OF THESE ROCKS IS BEING INVESTIGATED IN DETAIL BY CLASSICAL AND ELECTRON PROBE TECHNIQUES.

879. SMITH, D.G.W., UNIV. OF ALBERTA, BELL, J.B., BAKER, P.E., ATKINS, F.B., OXFORD UNIV.-
THE GEOCHEMISTRY, PETROLOGY AND VOLCANOLOGY OF ASCENSION ISLAND, MID-ATLANTIC RIDGE, 1964-69.
SUITES OF SPECIMENS COLLECTED BY THE 1964 AND 1965 OXFORD EXPEDITIONS ARE BEING INVESTIGATED IN A COMPREHENSIVE PROGRAMME OF OPTICAL, CHEMICAL, ISOTOPIC AND RADIOMETRIC AGE WORK. SEE OXFORD EXPEDITION TO ASCENSION ISLAND 1964, NATURE, VOL. 204, P. 722, 1964.

880. SMITH, F.G., UNIV. OF TORONTO-
GRAIN GROWTH IN METAMORPHIC ROCKS, 1964-73.
MODELS FOR STUDIES OF RECRYSTALLIZATION, GROWTH OF METACRYSTS, ETC. IN HIGH GRADE METAMORPHIC ROCKS ARE BEING DEVELOPED FROM SALT SYSTEMS.

881. SMITH, R.E., UNIV. OF MANITOBA-
THE METAMORPHIC RESPONSE OF KEWEENAWAN LAVAS DURING BURIAL, LAKE SUPERIOR DISTRICT, 1967-69.

882. SUBBARAO, K.V., FERGUSON, R.B., TURNOCK, A.C., UNIV OF MANITOBA-
COMPOSITION OF ZONES, STRUCTURAL STATE, AND RELATIONSHIPS BETWEEN TWINNING AND ZONING IN IGNEOUS PLAGIOCLASE, 1967-69.
STUDY OF THE ORIGIN OF TWIN-ZONE RELATIONSHIP OF FELDSPARS, WHICH IS STILL ONE OF THE UNSOLVED PROBLEMS IN IGNEOUS PETROLOGY. THE METHODS WILL BE OPTICAL AND X-RAY, STARTING WITH PLAGIOCLASE FROM A QUARTZ DIORITE STOCK FROM NORTHERN MANITOBA (CHURCHILL BLOCK).

PETROLOGY AND PETROGRAPHY

883. TREMBATH, L.T., UNIV. OF NEW BRUNSWICK-
ZEOLITES IN THOLEIITIC BASALTS, 1965-69.
CORRELATION OF CO-EXISTING AND TOTAL ZEOLITE ASSEMBLAGES IN A GIVEN ENVIRONMENT WITH THE HOST ROCK COMPOSITION IN AN ATTEMPT TO GAIN INFORMATION ON CONDITIONS OF LATE STAGE CRYSTALLIZATION IN A THOLEIITE SILL.

884. WATKINSON, D.H., UNIV. OF TORONTO-
EXPERIMENTAL STUDY OF RELATIONSHIPS BETWEEN NIOBIUM MINERALIZATION AND CARBONATITES, 1967-69.
STUDY OF THE JOIN NANBO3 - CANB2O6 - CACO3 - NA2CO3 - H2O AT HIGH TEMPERATURES AND PRESSURES AND COMPARISON OF THE SYNTHETIC NIOBATES WITH NATURAL NIOBIUM MINERALS FROM CARBONATITES.
EXPERIMENTAL STUDIES OF CARBONATITE-ALKALIC ROCK GENESIS, 1967-69.
MELTING RELATIONS ON THE JOIN NAALSIO4 - CA2AL2SIO7 - CACO3 - H2O AT HIGH PRESSURES AND TEMPERATURES AND COMPARISONS WITH NEPHELINE AND MELILITE-BEARING ALKALIC ROCK - CARBONATITE COMPLEXES.

885. WILSON, H.D.B., UNIV. OF MANITOBA-
THE IGNEOUS EPISODES IN THE SUPERIOR PROVINCE, CANADIAN SHIELD, 1964-.
THE CHEMICAL NATURE OF THE PRINCIPAL IGNEOUS EPISODES IS BEING DETERMINED BY CHEMICAL ANALYSIS. THUS FAR, THESE INCLUDE THE ARCHAEAN LAVAS, THE KENORAN GRANITIC INTRUSIONS, THE **KEEWEENAWAN** DIABASES AND LAVAS, THE LATE SYENITIC-ALKALINE PLUGS, AND THE INTRUSIONS AND LAVAS ALONG THE BOUNDARY OF THE PROVINCE. SEE VOLCANIC HISTORY OF THE CANADIAN ARCHAEAN PROVINCE- INTERNATIONAL SYMPOSIUM ON VOLCANOLOGY, NEW ZEALAND, 1965.

886. WINKLER, H.G., WYNNE-EDWARDS, H.R., PIRIE, J., QUEEN*S UNIV.-
ANATEXIS IN A GREY GNEISS, 1967-69, PH.D. THESIS (PIRIE).
A DETAILED STUDY OF A SINGLE OUTCROP TO DETERMINE THE SOURCE OF THE GRANITIC (MOBILISATE) FRACTION IN A QUARTZOFELDSPATHIC GNEISS, USING MINERALOGICAL AND CHEMICAL ANALYSES, ELECTRONPROBE STUDIES, AND EXPERIMENTAL WORK.

887. WYNNE-EDWARDS, H.R., BOURNE, J., QUEEN*S UNIV.-
TEXTURES IN GNEISSES, 1967-69, M.SC. THESIS (BOURNE).
A STUDY OF GNEISSIC TEXTURES IN DIFFERENT TECTONIC SETTINGS. SEE TEXTURES AND TECTONIC CATE-

GORIES IN RELATION TO METAMORPHIC TEXTURE, PROGRAM, 1967 ANN. MEETING, GEOL. ASSOC. CANADA, PP. 106-107.

888. WYNNE-EDWARDS, H.R., FUH, T.-M., QUEEN*S UNIV.- GEOCHEMICAL CORRELATION OF ROCKS ON EITHER SIDE OF THE GRENVILLE FRONT AT VAL D OR, QUEBEC, 1967-69, PH.D. THESIS (FUH).

A TEST BY GEOCHEMICAL CORRELATION USING FIVE SAMPLE AREAS, OF THE HYPOTHESIS THAT THE ARCHAEAN ROCKS NEAR VAL D OR, INCLUDING THE ABITIBI GREENSTONE BELT, CONTINUE EASTWARD IN THE GRENVILLE PROVINCE. SEE MONT LAURIER AND KEMPT LAKE MAP-AREAS, QUEBEC, GEOL. SURV. CAN., PAPER 66-32, 1966.

PLEISTOCENE AND GROUNDWATER

Alberta

889. BAYROCK, L.A., RESEARCH COUNCIL OF ALBERTA-
SURFICIAL GEOLOGY OF THE EDMONTON AREA, N.T.S. SHEET 83H, 1958-.
DURING THE SUMMER OF 1967 THE FOLLOWING SHEETS OF 83H HAVE BEEN MAPPED TO A SCALE OF 1-50,000- 7, 10, 13, AND 14. IT IS PLANNED TO COMPLETE MAPPING OF 83H DURING 1968. SHEETS 5, 6, 11, AND 12 HAVE BEEN MAPPED PREVIOUSLY. SEE RES. COUNCIL OF ALTA., PRELIM. REPT. 62-6.

890. BAYROCK, L.A., BERG, T.E., RESEARCH COUNCIL OF ALBERTA-
GLACIAL DEPOSITS OF THE CITY OF EDMONTON AND VICINITY, 1965-.
SEE GEOLOGY OF THE CITY OF EDMONTON. PART 1- CENTRAL EDMONTON, RES. COUNCIL OF ALBERTA, REPT. 66-1.

891. BERG, T.E., RESEARCH COUNCIL OF ALBERTA-
SURFICIAL GEOLOGY OF THE MEDICINE HAT AREA, N.T.S. SHEET 72L, 1965-.
A PRELIMINARY MAP OF THE AREA WILL BE COMPLETED IN 1968.
PERIGLACIAL PHENOMENA IN ALBERTA, 1965-.
INVESTIGATIONS OF PERIGLACIAL PROCESSES AND PHENOMENA WERE CONDUCTED ALONG THE RESOURCES RAILWAY, AT PARKER RIDGE NEAR THE COLUMBIA ICE FIELDS, AND AT PLATEAU MOUNTAIN. PREPARATIONS ARE UNDERWAY TO MONITOR GROUND TEMPERATURES AT PLATEAU MOUNTAIN IN ORDER TO DETERMINE THE NUMBER OF FREEZE-THAW CYCLES AND THE TEMPERATURE REGIME. SEE RES. COUNCIL OF ALTA., PAPER 398 (IN PRESS).

892. CARLSON, V.A., RESEARCH COUNCIL OF ALBERTA-
GRAVITY EXPLORATION FOR A BURIED CHANNEL NEAR HIGH PRAIRIE, ALBERTA, 1962-67.
RESULTS OF THIS STUDY, WHICH FAILED TO DEMONSTRATE ANY RELATION BETWEEN GRAVITY RESULTS AND THE TREND OF A KNOWN BURIED VALLEY, ARE CONTAINED IN AN UNPUBLISHED INTERNAL REPORT.
BEDROCK TOPOGRAPHY AND SAND-THICKNESS MAPS OF THE EDMONTON AREA, ALBERTA, 1961-67.
SEE BEDROCK TOPOGRAPHY AND SURFICIAL AQUIFERS OF THE EDMONTON DISTRICT, ALBERTA, RES. COUN. OF ALBERTA, REPT. 66-3, 1967.
BEDROCK TOPOGRAPHY OF THE MEDICINE HAT MAP-AREA, ALBERTA, 1967-69.
BEDROCK TOPOGRAPHY OF THE DRUMHELLER MAP-AREA, ALBERTA, 1966-68.

PLEISTOCENE AND GROUNDWATER

893. CARLSON, V.A., TURNER, W.R., GEIGER, K.W., RESEARCH COUNCIL OF ALBERTA-
EXTENT AND THICKNESS OF A BURIED GRAVEL DEPOSIT IN THE BASSANO-WOLF LAKE AREA, ALBERTA, 1966-68.
THE AQUIFER UNDER INVESTIGATION COVERS SOME 1,300 SQUARE MILES AND IS IN SOME PLACES GREATER THAN 40 FEET IN THICKNESS. THE INVESTIGATION IS INTENDED TO ESTABLISH ITS WATER-RESOURCES POTENTIAL THROUGHOUT THE AREA.

894. CHAMBERS, M.J., UNIV. OF CALGARY-
GLACIAL PROCESSES IN UPPER RED DEER VALLEY, 1967-.

895. CLISSOLD, R.J., RESEARCH COUNCIL OF ALBERTA-
GROUNDWATER MAPPING IN THE RED DEER AREA, ALBERTA, 1966-68.

896. CURRIE, D.V., RESEARCH COUNCIL OF ALBERTA-
AN EVALUATION OF THE GROUNDWATER BUDGET FOR THE TRI-CREEK WATERHEDS, ALBERTA, 1967-69.
DRILLING AND GROUNDWATER INSTRUMENTATION IS 30 TO 50 PER CENT COMPLETE.

897. DUNN, D.E., RESEARCH COUNCIL OF ALBERTA-
GROUNDWATER RESOURCES OF THE STETTLER AREA, ALBERTA, 1962-68.
IN ADDITION TO AN EVALUATION OF GROUNDWATER RESOURCES, THIS STUDY FEATURED AN ATTEMPT TO APPLY A FINITE-DIFFERENCE MODEL TO THE ANALYSIS OF DRAWDOWN AND PRODUCTION DATA FOR THE STETTLER WATER-WELL FIELD. A TENTATIVE CONCLUSION IS THAT THIS TYPE OF APPROACH MUST BE APPLIED WITH CARE TO THE DETERMINATION OF SUBSURFACE HYDRAULIC CONDUCTIVITIES SINCE IT MAY HAVE A TENDENCY TO EXAGGERATE ACTUAL CONDUCTIVITY DIFFERENCES.

898. GABERT, G.M., RESEARCH COUNCIL OF ALBERTA-
GROUNDWATER HYDROLOGY OF THE EDMONTON AREA, ALBERTA, 1963-68.
GROUNDWATER HYDROLOGY OF A BURIED-CHANNEL AQUIFER NEAR DEVON, ALBERTA, 1965-68.
BEDROCK TOPOGRAPHY OF THE EDSON AREA, ALBERTA, 1961-67.

899. GEIGER, K.W., RESEARCH COUNCIL OF ALBERTA-
GROUNDWATER GEOLOGY OF LETHBRIDGE AND VICINITY, ALBERTA, 1963-68.
GROUNDWATER CONDITIONS AND CHANGES NEAR THE WATERTON

DAM, ALBERTA, 1964-68.
BEDROCK TOPOGRAPHY OF NATIONAL TOPOGRAPHIC SYSTEM MAP-AREA 821, ALBERTA, 1964-68.

900. GOLDING, D.L., STEVENSON, D.R., RESEARCH COUNCIL OF ALBERTA AND ALBERTA DEPT. OF FORESTRY AND RURAL DEVELOPMENT-
MARMOT CREEK EXPERIMENTAL BASIN, ALBERTA, 1962-.
INVOLVES GEOLOGIC MAPPING OF SURFICIAL AND BEDROCK GEOLOGY AIDED BY DRILLING AND SEISMIC STUDIES.

901. HOLECEK, G., WATER RESOURCES DIVISION, ALBERTA DEPT. OF AGRICULTURE-
SPRING CREEK EXPERIMENTAL BASIN, ALBERTA, 1965-80.
WATER BALANCE STUDY INVOLVES GEOLOGIC MAPPING SUPPORTED BY DRILLING AND GEOPHYSICS.

902. JONES, J.F., RESEARCH COUNCIL OF ALBERTA-
GEOLOGY AND GROUNDWATER RESOURCES, PEACE RIVER DISTRICT, ALBERTA, 1961-67.
SEE RES. COUN. ALBERTA, BULL. 16, 1966.

903. LE BRETON, E.G., RESEARCH COUNCIL OF ALBERTA-
REGIONAL GROUNDWATER RECONNAISSANCE SURVEY OF THE RED DEER MAP-AREA, ALBERTA, 1966-69.

GROUNDWATER GEOLOGY AND HYDROLOGY OF THE LAMONT-CHIPMAN AREA, ALBERTA, 1963-67, M.SC. THESIS.

904. LENNOX, D.H., CARLSON, V.A., RESEARCH COUNCIL OF ALBERTA-
GEOPHYSICAL EXPLORATION FOR BURIED VALLEYS IN AN AREA NORTH OF TWO HILLS, ALBERTA, 1961-67.
GEOPHYSICS IN GROUNDWATER EXPLORATION, 1957-67.
SEE GEOMETRIC COEFFICIENTS FOR USE IN NUMERICAL RESISTIVITY ANALYSIS, RES. COUN. OF ALBERTA, BULL. 19, 1966.

905. LENNOX, D.H., GEIGER, K.W., RESEARCH COUNCIL OF ALBERTA-
TABULATION AND PUBLICATION OF WATER-WELL DATA, 1964-67.
THIS PROJECT IS BEING PHASED OUT, TO BE REPLACED BY **HYDRODAT** - A COMPUTER-ORIENTED GROUNDWATER STORAGE AND RETRIEVAL SYSTEM. SEE WATER-WELL RECORDS, SOUTHERN ALBERTA, TOWNSHIPS 1-10, RES. COUN. ALBERTA, PRELIM. REPT. 65-4, 1966.

906. MURPHY, P.J., ALBERTA DEPT. OF LANDS AND FORESTS-
CACHE PERCOTTE EXPERIMENTAL BASIN, ALBERTA, 1965-70.

PLEISTOCENE AND GROUNDWATER

GROUNDWATER STUDIES INVOLVE GEOLOGIC MAPPING SUPPORTED BY DRILLING AND GEOPHYSICS.

907. ROTHWELL, R.L., STEVENSON, D.R., ALBERTA DEPT. OF FORESTRY AND RURAL DEVELOPMENT AND RESEARCH COUNCIL OF ALBERTA-
DEER CREEK EXPERIMENTAL BASIN, ALBERTA, 1966-.
INVOLVES GEOLOGIC MAPPING OF SURFICIAL AND BEDROCK GEOLOGY AIDED BY DRILLING AND SEISMIC STUDIES.

908. PAWLUK, S., UNIV. ALBERTA, BAYROCK, L.A., RESEARCH COUNCIL OF ALBERTA-
COMPOSITION OF ALBERTA TILLS, 1957-68.
A LARGE NUMBER OF TILL SAMPLES WERE COLLECTED THROUGHOUT THE PROVINCE AND ANALYSED FOR THE FOLLOWING- FE, MN, CAO, B, CO, CU, ZN, MO, PH, SOLUBLE SALTS, SAND, SILT, CLAY, PLASTIC LIMIT, LIQUID LIMIT, POTASH FELDSPARS, PLAGIOCLASES, MONTMORILLONITE, ILLITE, AND CHLORITE. THE RESULTS WERE THAN AREALLY AVERAGED USING COMPUTERS, AND MAPS WERE PREPARED SHOWING ISO-CONCENTRATIONS OF THE ABOVE PARAMETERS. THE MAIN CONCLUSION IS THAT TILLS REFLECT THE COMPOSITION OF THE UNDERLYING BEDROCK. FINAL REPORT SHOULD BE COMPLETED BY SPRING OF 1968. SEE RES. COUNCIL OF ALTA., PAPER 351.

909. ROED, M., RESEARCH COUNCIL OF ALBERTA-
SURFICIAL GEOLOGY OF THE EDSON AREA, N.T.S. SHEET 83F, 1964-68, PH.D. THESIS, UNIV. OF ALBERTA.
SEE THE ATHABASCA VALLEY ERRATICS TRAIN, ALBERTA, AND PLESITOCENE ICE MOVEMENTS ACROSS THE CONTINENTAL DIVIDE, CAN. JOUR. EARTH SCI., VOL. 4, PP. 625-632.

910. RUTTER, N.W., GEOL. SURV. CANADA-
SURFICIAL GEOLOGY ALONG THE BOW RIVER VALLEY IN THE VICINITY OF CALGARY, ALBERTA, 1966-68.
SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

911. SADLER, L.D.M., WATER RESOURCES DIVISION, ALBERTA DEPT. OF AGRICULTURE-
HYDROLOGIC STUDY OF LETHBRIDGE - TABER IRRIGATION BASIN, 1965-75.
INVOLVES GEOLOGIC MAPPING SUPPORTED BY DRILLING AND GEOPHYSICS.

912. SINGH, T., STEVENSON, D.R., RESEARCH COUNCIL OF ALBERTA AND ALBERTA DEPT. OF FORESTRY AND RURAL DEVELOPMENT-

STREETER CREEK EXPERIMENTAL BASIN, ALBERTA, 1964-.
INVOLVES GEOLOGIC MAPPING OF SURFICIAL AND BEDROCK GEOLOGY AIDED BY DRILLING AND SEISMIC STUDIES.

913. STALKER, A.MACS., GEOL. SURV. CANADA, CHURCHER, C.S., UNIV. OF TORONTO-
QUATERNARY OF SOUTHERN ALBERTA, 1965-.
QUATERNARY STRATIGRAPHY IN SOUTHERN ALBERTA WITH SPECIAL REFERENCE TO VERTEBRATE PALAEONTOLOGY, AND PAST CLIMATES, AGE OF DEPOSITS, AND CONDITIONS UNDER WHICH THEY WERE DEPOSITED. SOME 6 TILL SHEETS, AND 5 FOSSIL HORIZONS ARE PRESENTLY UNDER INVESTIGATION NEAR MEDICINE HAT.

914. STEVENSON, D.R., RESEARCH COUNCIL OF ALBERTA-
GROUNDWATER BUDGETS OF GHOSTPINE, THREE HILLS AND KNEEHILLS BASINS, ALBERTA, 1964-.
INCLUDES STUDY OF GEOLOGY OF BASIN AND TEST DRILLING.
THE HYDROLOGIC BALANCE FROM A LARGE PRAIRIE DRAINAGE BASIN IN CENTRAL ALBERTA, 1963-.
THE PRELIMINARY PHASE OF INSTRUMENTATION IS ALMOST COMPLETE. FURTHER INSTRUMENTATION WILL DEPEND ON THE EVALUATION OF DATA COLLECTED TO DATE.
AN EVALUATION OF THE GROUNDWATER BUDGET AND ITS SIGNIFICANCE WITHIN THE HYDROLOGIC BALANCE FOR THE MARMOT CREEK BASIN, ALBERTA, 1964-69.
DRILLING AND GROUNDWATER INSTRUMENTATION ABOUT 80 PER CENT COMPLETE.
AN EVALUATION OF THE GROUNDWATER BUDGET AND ITS SIGNIFICANCE WITHIN THE HYDROLOGIC BALANCE FOR THE STREETER BASIN, ALBERTA, 1964-70.
DRILLING AND GROUNDWATER INSTRUMENTATION 40 TO 50 PER CENT COMPLETE.
AN EVALUATION OF THE GROUNDWATER BUDGET OF THE CACHE PERCOTTE AND WHISKEYJACK BASINS NEAR HINTON, ALBERTA, 1965-70.
EXTENSION OF DRILLING AND INSTRUMENTATION PROGRAMS, WHICH IS DESIRABLE, DEPENDS ON IMPROVEMENT OF ACCESS.
AN EVALUATION OF THE GROUNDWATER BUDGET AND ITS SIGNIFICANCE WITHIN THE HYDROLOGIC BALANCE FOR THE DEER CREEK BASIN, ALBERTA, 1966-71.

915. ST-ONGE, D.A., GEOL. SURV. CANADA-
QUATERNARY GEOLOGY AND GEOMORPHOLOGY OF THE WHITECOURT AREA, ALBERTA, 1966-68.
DESIGNED TO SUPPLY BASIC INFORMATION ON THE QUATERNARY GEOLOGY AND GEOMORPHOLOGY OF THE WHITECOURT AREA. THIS PROJECT HAS ALSO BEEN UNDERTAKEN TO MEET

A REQUEST OF THE ALBERTA DEPT. OF LANDS AND FORESTS.. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

916. TOKARSKY, O., RESEARCH COUNCIL OF ALBERTA-
REGIONAL GROUNDWATER RECONNAISSANCE SURVEY OF THE BISON LAKE AND MOUNT WATT MAP-AREAS, 1967-69.
SURFICIAL GEOLOGY AND GROUNDWATER RESOURCES OF GRIMSHAW-CARDINAL LAKE AREA, ALBERTA, 1965-67.
GROUNDWATER POTENTIAL IN THE KEG RIVER AREA, ALBERTA, 1966-67.
RESULTS OF THIS STUDY ARE CONTAINED IN AN UNPUBLISHED INTERNAL REPORT. GROUNDWATER SUPPLIES IN THE AREA ARE ADEQUATE FROM THE POINT OF VIEW OF QUANTITY BUT MARGINAL FROM THE POINT OF VIEW OF QUALITY.

917. TOTH, J., RESEARCH COUNCIL OF ALBERTA-
INVESTIGATIONS FOR GROUNDWATER FOR THE TOWN OF OLDS, CENTRAL ALBERTA, 1965-67.
SEE GROUNDWATER GEOLOGY, MOVEMENT, CHEMISTRY, AND RESOURCES NEAR OLDS, ALBERTA, RES. COUN. OF ALBERTA, BULL. 17, 1966.
INVESTIGATIONS FOR GOUNDWATER IN THE THREE HILLS AREA, CENTRAL ALBERTA, 1965-67.

918. TURNER, W.R., RESEARCH COUNCIL OF ALBERTA-
INVESTIGATIONS FOR GROUNDWATER IN THE RED DEER AREA, CENTRAL ALBERTA, 1965-70.
REGIONAL RECONNAISSANCE SURVEY OF THE DRUMHELLER MAP-AREA, ALBERTA, 1966-68.
PILOT-PROJECT STUDY OF AUTOMATED GROUNDWATER DATA STORAGE AND RETRIEVAL, 1966.
THIS PROJECT HAS LED TO **HYDRODAT** - A COMPUTER-ORIENTED GROUNDWATER STORAGE AND RETRIEVAL SYSTEM.
HYDRODAT - A COMPUTER-ORIENTED GROUNDWATER INFORMATION STORAGE AND RETRIEVAL SYSTEM, 1967-69.
ALL CURRENT DATA BEING FILED ON HYDRODAT AND ABOUT 25 PER CENT OF BACKLOG OF EARLIER DATA IS ALSO ON HYDRODAT. SEE A COMPUTER-ORIENTED GROUNDWATER INFORMATION STORAGE AND RETRIEVAL SYSTEM, GROUND WATER, VOL. 5, NO. 4, OCT. 1967.

919. VANDEN BERG, A., RESEARCH COUNCIL OF ALBERTA-
GROUNDWATER MOVEMENT AND GROUNDWATER CHEMISTRY IN THE HAND HILLS-BULLPOUND CREEK AREA, ALBERTA, 1963-68.
INVESTIGATIONS OF AN ALLUVIAL AQUIFER SOUTH OF REDCLIFF, ALBERTA, 1966-67.
RESULTS OF THIS STUDY ARE CONTAINED IN AN

UNPUBLISHED INERNAL REPORT. THE ALLUVIAL TERRACE INVESTIGATED WAS DEMONSTRATED TO BE UNSUITABLE FOR AN INDUCED-INFILTRATION SUPPLY.

920. VANDEN BERG, A., LENNOX, D.H., RESEARCH COUNCIL OF ALBERTA, ANALYSIS OF PUMP-TEST RESULTS, 1962-.
THIS PROJECT HAS BEEN CONCENTRATED ON THE APPLICATION OF COMPUTER SOLUTIONS TO A VARIETY OF WELL- AND AQUIFER-TEST PROBLEMS. SEE DRAWDOWNS DUE TO CYCLIC PUMPING, PROC. AM. SOC. CIV. ENGRS. 93, NO. HY6, PP. 35-51, 1967.

921. WESTGATE, J.A., UNIV. OF ALBERTA, GREEN, R., RESEARCH COUNCIL OF ALBERTA-
STRATIGRAPHY AND PALAEOECOLOGY OF THE SASKATCHEWAN GRAVELS IN THE PEACE RIVER AREA, ALBERTA, 1965-69.

922. WESTGATE, J.A., RAMSDEN, J., UNIV. OF ALBERTA-
GLACIAL STRATIGRAPHY OF THE EDMONTON AREA, ALBERTA, 1966-, M.SC. THESIS (RAMSDEN).

British Columbia

923. FULTON, R.J., GEOL. SURV. CANADA-
CORRELATION OF QUATERNARY VOLCANIC ASH FALLS OF THE SOUTHERN CANADIAN CORDILLERA, 1964-.
THE 1967 SAMPLING PROGRAM WAS AIMED AT DELINEATING THE TWO ST. HELENS ASH FALLS WHICH HAVE BEEN RECOGNIZED IN SOUTHERN BRITISH COLUMBIA.
NEOGLACIAL MORAINES, TIEDEMANN GLACIER, BRITISH COLUMBIA, 1967.
TIEDEMANN GLACIER ON THE EAST SIDE OF MOUNT WADDINGTON HAS TWO MAJOR POST-FRASER GLACIATION MORAINES. BOG SAMPLES AND TREE CORES WERE TAKEN IN AN ATTEMPT TO DATE THESE MORAINES. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.
QUATERNARY GEOLOGY SALVAGE, COLUMBIA RIVER DEVELOPMENT PROJECT, BRITISH COLUMBIA, 1965-.
IN ADDITION TO GATHERING AREAL INFORMATION THIS PROJECT INCLUDES A SEDIMENTATION STUDY OF ARROW LAKES. SOUTHERN END OF THE ARROW DAM RSERVOIR WAS COVERED DURING THE 1967 PHASE OF THIS PROJECT. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

924. HUNTER, H.I., BRITISH COLUMBIA DEPT. OF LANDS, FORESTS AND WATER RESOURCES-
OKANAGAN BASIN STUDY, BRITISH COLUMBIA, 1965-75.

PLEISTOCENE AND GROUNDWATER

STUDY OF HYDROLOGIC CYCLE, PARTICULARLY SOIL MOISTURE AND GROUNDWATER COMPONENTS.

925. LAWSON, D.W., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROUNDWATER STUDY, REPRESENTATIVE BASIN (IHD), TRAPPING CREEK, BRITISH COLUMBIA, 1965-, PH.D. THESIS, UNIV. OF GUELPH.
THE PURPOSE OF THE GROUNDWATER STUDY WAS TO GAIN AN UNDERSTANDING OF GROUNDWATER FLOW SYSTEMS IN AN AREA OF HIGH RELIEF UNDERLAIN BY CRYSTALLINE BEDROCK.

926. RUTTER, N.W., GEOL. SURV. CANADA-
SURFICIAL GEOLOGY OF THE PEACE RIVER DAM AND RESERVOIR AREA, BRITISH COLUMBIA, 1966-68.
SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

927. RYCKBORST, H., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
HYDROLOGY OF THE BONAPARTE RIVER BASIN, BRITISH COLUMBIA, 1967-69.
AN ANALYSIS OF HYDROGRAPHS AND CORRESPONDING PLUVIOGRAPHS GIVES THE RUNOFF CHARACTERISTICS OF A TYPICAL BASALT - AREA IN THE CARIBOO. A NUMBER OF POINT MEASUREMENTS AT METEOROLOGICAL STATION RIVER GAUGING STATIONS AND GROUNDWATER WELLS IS USED FOR THIS ANALYSIS.

928. SMITH, G.W., GEOL. SURV. CANADA-
QUATERNARY GEOLOGY, MABEL LAKE DISTRICT, BRITISH COLUMBIA, 1966-67, PH.D. THESIS.
STUDY OF DEGLACIATION AND POST-GLACIAL DRAINAGE DEVELOPMENT AND OF PRE-CLASSICAL WISCONSIN SEDIMENTS WHICH OCCUPY LOWER PARTS OF SOME CREEK VALLEYS AND PROTECTED SEGMENTS OF MAJOR VALLEYS. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

Manitoba

929. BOSTOCK, H.H., CUMMING, L.M., NORFORD, B.S., SANFORD, B.V., NORRIS, A.W., PRICE, L.L., CRAIG, B.G., MCDONALD, B.C., GEOL. SURV. CANADA-
OPERATION WINISK - AN AIR-SUPPORTED RECONNAISSANCE SURVEY OF BEDROCK AND SURFICIAL GEOLOGY OF HUDSON BAY LOWLANDS OF MANITOBA, ONTARIO AND QUEBEC, 1966-68.
SEE OPERATION WINISK, GEOL. SURV. CAN., PAPER 68-1, 1968.

PLEISTOCENE AND GROUNDWATER

930. BYERS, A.R., NIND, T.E.W., LISSEY, A., UNIV. OF SASKATCHEWAN-
GROUNDWATER FLOW SYSTEMS OF THE OAK RIVER DRAINAGE BASIN, MANITOBA, 1965-68- PH.D. THESIS (LISSEY).

931. CLAYTON, G.L., UNIV. OF MANITOBA-
LITTLE KETTLE LAKE REPRESENTATIVE BASIN, MANITOBA, 1966-.
STUDY OF REPRESENTATIVE BASIN IN PERMAFROST AREA WILL INVOLVE PERMAFROST STUDIES.

932. GRAY, L., WATER CONTROL AND CONSERVATION BRANCH, MANITOBA DEPT. OF AGRICULTURE AND CONSERVATION-
WINNIPEG AQUIFER - STUDY OF EFFECTS ON THERMAL REGIME RESULTING FROM WARM RETURN FLOWS, 1964-74.
WARM WASTE WATER FROM AIR CONDITIONING AND COOLING SYSTEMS IS BEING RETURNED TO THE AQUIFER AND THE EFFECTS ARE BEING STUDIED.

933. JOHNSTON, G.H., BLACKWELL, J.M., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
PERMAFROST AT THOMPSON, MANITOBA, 1961-.
RECONNAISSANCE SURVEYS INCLUDING DRILLING AND PROBING AND TERRAIN EVALUATION WERE CARRIED OUT TO DETERMINE THE OCCURRENCE AND DISTRIBUTION OF PERMAFROST. GROUND TEMPERATURE AND OTHER INSTRUMENTATION WAS INSTALLED AT SELECTED SITES. OBSERVATIONS OF FROST OCCURRENCES AND THE GROUND THERMAL REGIME WERE CONTINUED IN THE THOMPSON TOWNSITE BY MEANS OF VISUAL EXAMINATION OF CONDITIONS IN EXCAVATIONS, SOIL SAMPLING AND GROUND TEMPERATURE MEASUREMENTS.

934. KLASSEN, R.W., GEOL. SURV. CANADA-
SURFICIAL GEOLOGY AND GEOMORPHOLOGY OF THE ASSINIBOINE RIVER VALLEY AND ITS TRIBUTARIES, 1966-.
SEE GEOL. SURV. CAN., PAPER 67-1B, 1967.

935. KLASSEN, R.W., WYDER, J.E., GEOL. SURV. CANADA-
DRIFT STRATIGRAPHY AND BEDROCK TOPOGRAPHY, VIRDEN AREA, MANITOBA, 1967-68.
THE PURPOSE IS TO DETERMINE THE BEDROCK SURFACE TOPOGRAPHY, TRACE THE BURIED **MISSOURI** VALLEY AND OTHER BURIED VALLEYS, AND INVESTIGATE THE DRIFT STRATIGRAPHY IN THIS AREA BY DRILLING AND GEOPHYSICAL METHODS. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

PLEISTOCENE AND GROUNDWATER

936. LEITH, E.I., ANDERSON, D.T., MCPHERSON, R., UNIV. OF MANITOBA-
PLEISTOCENE STRATIGRAPHY AND SEDIMENTATION OF SOUTHEASTERN MANITOBA, 1967-69- PH.D. THESIS (MCPHERSON).

937. LISSEY, A., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
HYDROGEOLOGY OF OAK RIVER BASIN, MANITOBA, 1963-67.
SEE THE USE OF REDUCERS TO INCREASE THE SENSITIVITY OF PIEZOMETERS, JOUR. OF HYDROLOGY, VOL. 5, PP. 197-205, 1967.

938. MCPHERSON, R.A., UNIV. OF MANITOBA-
PLEISTOCENE DEPOSITS OF GULL LAKE-WINNIPEG RIVER, MANITOBA, 1967-68- M.SC. THESIS

939. RENDER, F.W., UNIV. OF MANITOBA-
HYDROGEOLOGIC ASPECTS OF THE METRO WINNIPEG FLOODWAY, 1967-69- M.SC. THESIS.

940. RUSSELL, G.A., UNIV. OF MANITOBA-
AN INVESTIGATION OF THE EFFECTS OF VARYING LIME AND MOISTURE CONTENT ON THE STABILIZATION OF AGASSIZ CLAYS, BY DIFFERENTIAL THERMAL ANALYSIS - A CONTINUING STUDY.
AIRPHOTO ANALYSIS OF A RESEARCH DRAINAGE BASIN IN PERMAFROST FOR THE INTERNATIONAL HYDROLOGIC DECADE A CONTINUING STUDY.

New Brunswick

941. CARR, P.A., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
SEA WATER INTRUSION PROBLEMS IN PRINCE EDWARD ISLAND AND NEW BRUNSWICK, 1965-.
A SUBPROJECT CONCERNING SEA WATER INTRUSION PROBLEMS IN SHIPPEGAN, NEW BRUNSWICK WAS STARTED IN AUGUST, 1967 BY D.D. BROWN AS A PH.D. THESIS PROJECT.

942. CHARRON, J.E., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
A HYDROGEOLOGICAL STUDY OF THE NORTH NASHWAAKSIS BASIN, NEW BRUNSWICK, 1966-68.
THIS STUDY OF A REPRESENTATIVE BASIN COVERS THE QUANTITATIVE, QUALITATIVE, HYDROCHEMICAL AND HYDROMINERALOGICAL ASPECTS OF GROUNDWATER USING A MINIMUM OF

INSTRUMENTATION DATA.

943. GADD, N.R., GEOL. SURV. CANADA-
PLEISTOCENE GEOLOGY, COASTAL SOUTHWEST NEW BRUNSWICK, 1967-69.
LITTLE IS KNOWN OF GLACIAL AND POST-GLACIAL HISTORY OF THIS AREA. THIS STUDY IS INTENDED TO SUPPLY BACKGROUND INFORMATION FOR INVESTIGATIONS OF GROUNDWATER PROBLEMS, WITH SPECIAL REFERENCE TO THOSE RELATED TO THE FISHERIES INDUSTRY. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

Newfoundland and Labrador

944. O DONNELL, N.D., UNIV. OF WESTERN ONTARIO-
INVESTIGATION OF AN INDICATOR TRAIN OF SULPHIDE ORE AT GULL POND, NEWFOUNDLAND, 1967-69, M.SC. THESIS.

Nova Scotia

945. JONES, J.F., NOVA SCOTIA DEPT. OF MINES-
GEOCHEMICAL STUDIES OF GROUNDWATER AND SURFACE WATER, NOVA SCOTIA, 1964-.
BASIC GEOCHEMICAL DATA IS BEING COLLECTED.
BASIC WATER WELL DATA, NOVA SCOTIA, 1964-.
INVENTORY AND TABULATION OF WATER WELLS AND THE GEOLOGIC ENVIRONMENT.
OBSERVATION WELL NETWORK, NOVA SCOTIA, 1964-.
ESTABLISHMENT OF WELLS WILL PROVIDE STRATIGRAPHIC DATA ON IMPORTANT AQUIFERS, LARGELY SURFICIAL MATERIALS.
AQUIFER GEOPHYSICAL STUDIES, NOVA SCOTIA, 1964-.
GEOPHYSICAL STUDIES TO AID IN AQUIFER LOCATIONS.
APRIL BROOK, FRASER BROOK AND SHARPE S BROOK REPRESETATIVE BASINS, NOVA SCOTIA, 1964-.
GROUNDWATER PORTIONS OF STUDIES INVOLVES MAPPING AND DRILLING.

946. MACNEILL, R.H., ACADIA UNIV.-
PLEISTOCENE GEOLOGY OF NOVA SCOTIA, 1952-68.

Northwest Territories

947. BLAKE, W.JR., GEOL. SURV. CANADA-
GLACIAL GEOLOGY, SOUTHERN ELLESMERE ISLAND, 1967-.
SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.
REGIONAL PATTERN OF POST-GLACIAL UPLIFT, ARCTIC CANADA, 1967-.

PLEISTOCENE AND GROUNDWATER

SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

948. HATTERSLEY-SMITH, G., DEFENCE RESEARCH BOARD, DEPT. NATIONAL DEFENCE-
GEOPHYSICAL RESEARCH IN THE HIGH ARCTIC, 1963-.
THIS PROJECT INCLUDES GLACIOLOGICAL, METEOROLOGICAL AND OCEANOGRAPHIC STUDIES IN NORTHWESTERN ELLESMERE ISLAND. SEE POST-GLACIAL UPLIFT AT TANQUARY FIORD, NORTHERN ELLESMERE ISLAND, N.W.T. (WITH AUSTIN GLACIER MASS BALANCE IN NORTHERN ELLESMERE ISLAND, 1964-.
WORK PRESENTLY CONCENTRATED ON OTTO FIORD, PER ARDUA GLACIERS AND WARB HUNT ICE SHELF.

949. JOHNSTON, G.H., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
OBSERVATIONS AT INUVIK, NORTHWEST TERRITORIES, 1954-.
THE EVALUATION OF THE PERFORMANCE OF VARIOUS ENGINEERING FACILITIES, E.G. BUILDING FOUNDATIONS, AIRSTRIPS, ROADS, UTILIDORS, ETC. CONSTRUCTED ON PERMAFROST WERE CONTINUED BY MEANS OF GROUND TEMPERATURE AND PILE MOVEMENT SURVEYS. DEPTH OF THAW SURVEYS AT SITES HAVING DIFFERENT SOIL AND SURFACE COVER CONDITIONS IN UNDISTURBED AREAS AND UNDER BUILDINGS WERE CARRIED OUT.

950. MULLER, F., MCGILL UNIV.-
GLACIER MASS BALANCE AND CLIMATIC FLUCTUATIONS ON AXEL HEIBERG ISLAND, 1966-76.
ASSESSMENT OF THREE GLACIERS IN CENTRAL PART OF WESTERN AXEL HEIBERG ISLAND AND RELATION TO CLIMATIC CONTROLS.

951. MULLER, F., SIMON, C., CHAMNEY, L., MCGILL UNIV.-
ASSESSMENT OF ICE MASSES OF AXEL HEIBERG ISLAND, 1966-69.
A MORPHOLOGICAL CLASSIFICATION AND INVENTORY OF ALL GLACIERS AND ICE CAPS.

Ontario

952. BOSTOCK, H.H., CUMMING, L.M., NORFORD, B.S., SANFORD, B.V., NORRIS, A.W., PRICE, L.L., CRAIG, B.G., MCDONALD, B.C., GEOL. SURV. CANADA-
OPERATION WINISK - AN AIR-SUPPORTED RECONNAISSANCE SURVEY OF BEDROCK AND SURFICIAL GEOLOGY OF HUDSON BAY LOWLANDS OF MANITOBA, ONTARIO AND QUEBEC, 1966-68.

PLEISTOCENE AND GROUNDWATER

SEE OPERATION WINISK, GEOL. SURV. CAN., PAPER 68-1, 1968.

953. DREIMANIS, A., UNIV. OF WESTERN ONTARIO-
EXTINCTION OF MASTODONS IN THE GREAT LAKES REGION, 1967-68.
SEE MASTODONS, THEIR GEOLOGIC AGE AND EXTINCTION IN ONTARIO, CANADA, CAN. JOUR. EARTH SCIENCES, VOL. 4, PP. 663-675, 1967.

954. DREIMANIS, A., BERTI, A.A., FEENSTRA, B.H., UNIV. OF WESTERN ONTARIO-
STRATIGRAPHIC CORRELATIONS OF GLACIAL DEPOSITS BETWEEN LAKE HURON AND ST. LAWRENCE LOWLAND, 1958-, PH.D. THESIS (BERTI), M.SC. THESIS (FEENSTRA).

955. FARVOLDEN, R.N., UNIV. OF WESTERN ONTARIO-
REGIONAL HYDROGEOLOGY OF SOUTHERN ONTARIO, 1967-69.

956. FITZPATRICK, M.M., QUEEN*S UNIV.-
SEISMIC AND RESISTIVITY METHODS APPLIED TO THE DETERMINATION OF THE DEPTH TO THE PALAEOZOIC-PRECAMBRIAN INTERFACE IN THE KINGSTON AREA, ONTARIO, 1965-69.
SINCE THE PRECAMBRIAN-PALAEOZOIC INTERFACE IS THE MAIN AQUIFER IN THE AREA, THIS IS ESSENTIALLY A WATER SUPPLY PROBLEM.

957. GIBB, UNDERWOOD AND MCLELLAN, WINNIPEG FOR ONTARIO WATER COMMISSION-
WATER RESOURCES SURVEY OF THE ATTAWAPISKAT RIVER DRAINAGE BASIN, ONTARIO, 1966-67.
TO ESTABLISH THE HYDROLOGIC REGIMES OF THE MAIN RIVER AND PRINCIPAL TRIBUTARIES, TO MAP THE GEOLOGY, VEGETATION, SOIL AND OTHER HYDROLOGIC FEATURES AND TO INTERPRET THE RELATIONSHIPS OF THESE PARAMETERS TO STREAMFLOW CHARACTERISTICS.

958. GILLESPIE, D.I., ONTARIO DEPT. LANDS AND FORESTS, CARD, K.D., ONTARIO DEPT. MINES-
RELATIONSHIP OF GROUNDWATER CHEMISTRY, BIOLOGY, AND GEOLOGY IN THE SUDBURY DISTRICT, ONTARIO, 1966-.
SEE THE RELATIONSHIP OF GEOLOGY TO GROUNDWATER CHEMISTRY AND FISH AND GAME PRODUCTIVITY IN THE SUDBURY DISTRICT, ONTARIO (ABSTRACT), NINTH CONFERENCE ON GREAT LAKES RESEARCH, CHICAGO, 1966.

959. GLEN, W.E., FIZPATRICK, M.M., QUEEN S UNIV.-
ELECTROMAGNETIC LOGGING OF WATER WELLS IN THE KINGSTON AREA, 1966-68, M.SC. THESIS (GLEN).
INCLUDES THE DESIGN OF A DOWN-HOLE IN-PHASE-OUT-OF-PHASE EM UNIT FOR LOGGING WATER WELLS IN THE KINGSTON AREA. THE OBJECT OF THE PROJECT IS TO TRY TO IDENTIFY AQUIFERS ALONG WITH SALT AND POSSIBLY SULPHUR PRODUCING HORIZONS IN THE AREA. IT IS ESSENTIALLY A WATER SUPPLY PROBLEM.

960. HENDERSON, E.P., GEOL. SURV. CANADA-
QUATERNARY GEOLOGY, GANANOQUE-BROCKVILLE, ONTARIO, 1965-67.
INCLUDES STUDY OF RELATIONSHIPS BETWEEN THE CHAMPLAIN SEA AND GLACIAL LAKES IN THE ONTARIO BASIN, AND HISTORY OF MOVEMENT AND RETREAT OF THE LAST CONTINENTAL ICE. SEE GEOL. SURV. CAN., MAP 22-1966.

961. HORE, R.C., FLEISCHER, F.C., PUCCINI, D.S., RENZONI, C.L., BAROUCH, M., FLIGG, E.K., MCDOUGALL, R., ONTARIO WATER RESOURCES COMMISSION-
BLUE SPRINGS CREEK IHD REPRESENTATIVE BASIN STUDY, ONTARIO, 1965-1974.
TO STUDY THE HYDROLOGIC CHARACTERISTICS IN A RIVER BASIN REPRESENTATIVE OF KAME, TILL AND BEDROCK CONDITIONS IN SOUTHERN ONTARIO. A COOPERATIVE STUDY WITH THE UNIVERSITY OF GUELPH.
BOWMANVILLE, SOPER AND WILMOT CREEKS IHD REPRESENTATIVE BASIN STUDY, ONTARIO, 1965-74.
TO STUDY THE HYDROLOGIC CHARACTERISTICS IN RIVER BASINS REPRESENTATIVE OF MORAINE, TILL AND CLAY AREAS IN SOUTHERN ONTARIO. RESEARCH INTO ALL ASPECTS OF WATER BALANCE STUDIES UNDER THESE CONDITIONS.
EAST AND MIDDLE OAKVILLE CREEKS IHD REPRESENTATIVE BASIN STUDY, ONTARIO, 1965-74.
TO STUDY THE HYDROLOGIC CHARACTERISTICS IN A RIVER BASIN REPRESENTATIVE OF CLAY AND CLAY-TILL PLAINS IN SOUTHERN ONTARIO. RESEARCH INTO ALL ASPECTS OF WATER BALANCE STUDIES UNDER THESE CONDITIONS.
VENISON CREEK IHD REPRESENTATIVE BASIN STUDY, ONTARIO, 1965-74.
TO STUDY THE HYDROLOGIC CONDITIONS IN A RIVER BASIN REPRESENTATIVE OF SAND PLAIN CONDITIONS IN SOUTHERN ONTARIO. RESEARCH INTO ALL ASPECTS OF WATER BALANCE STUDIES UNDER THESE CONDITIONS.
WILTON CREEK IHD REPRESENTATIVE BASIN STUDY, ONTARIO, 1965-74.
TO STUDY THE HYDROLOGIC CHARACTERISTICS IN A RIVER BASIN REPRESENTATIVE OF LIMESTONE PLAIN CONDITIONS IN SOUTHERN ONTARIO. RESEARCH INTO ALL ASPECTS OF WATER BALANCE STUDIES UNDER THESE CONDITIONS.

PLEISTOCENE AND GROUNDWATER

962. KARROW, P.F., UNIV. OF WATERLOO-
FLORA AND FAUNA OF THE GLACIAL LAKES OF SOUTHERN ONTARIO, 1957-.

963. KARROW, P.F., GEOL. SURV. CANADA (PART TIME), WATERLOO UNIV.-
STRATFORD-CONESTOGO AREA, 1965-68.
RELATIONSHIP BETWEEN THE HURON-GEORGIAN BAY AND ERIE-ONTARIO ICE LOBES IN THE WATERLOO INTERLOBATE AREA. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

964. KARROW, P.F., CARTER, J.C., FERNANDO, C.H., DUTHIE, H.C., MANNADA RANI, R.G., HUI, H.T., UNIV. OF WATERLOO-
STUDY OF FOSSIL REMAINS OF THE TORONTO INTERGLACIAL AND INTERSTADIAL DEPOSITS, 1957-, PH.D. THESIS, MANNADA RANI AND HUI.
SEE PLEISTOCENE GEOLOGY OF THE SCARBORO AREA, ONT. DEPT. MINES, GEOL. REPT. 46.

965. LEWIS, C.F.M., GEOL. SURV. CANADA-
POST-GLACIAL UPLIFT STUDIES, NORTH OF LAKE HURON, ONTARIO, 1965-69.
A GEOMORPHIC AND SEDIMENTOLOGICAL STUDY OF RAISED SHORE AND LAKE DEPOSITS IS BEING MADE TO DETERMINE RECENT RATES OF POST-GLACIAL UPLIFT AND TO CLARIFY THE CHRONOLOGY OF NIPISSING AND POST-NIPISSING EVENTS IN GREAT LAKES HISTORY. FIELD WORK INCLUDES A REGIONAL SURVEY OF THE NIPISSING AND OTHER BEACHES AND THE EXAMINATION OF SMALL-LAKE SEDIMENTS ALONG THE UPLIFTED SHORE IN THE REGION NORTH AND EAST OF THE HURON-GEORGIAN BAY BASIN. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

SEDIMENT DISTRIBUTION IN LAKE ONTARIO, 1966-69.
INCLUDES DELINEATION OF PRESENT AREAS AND RATES OF SUBAQUEOUS EROSION AND ACCUMULATION, AND THE EFFECT OF CRUSTAL REBOUND UPON WATER LEVELS AND BASIN SEDIMENTATION DURING THE LAST 10,000 YEARS. STRATIGRAPHIC AND QUANTITATIVE SURFACE SEDIMENT INFORMATION WILL BE EXTRACTED FROM ECHOGRAMS. PISTON AND GRAVITY CORES AND SURFACE SAMPLES WILL BE ANALYZED ROUTINELY FOR PARTICLE SIZE DISTRIBUTION, MINERALOGIC COMPOSITION, WATER AND ORGANIC CONTENT. RADIOCARBON PALYNOLOGICAL, AND MICROSFOSSIL ANALYSES OF SELECTED MATERIALS WILL BE ATTEMPTED. SEE SURVEY OF LAKE ONTARIO BOTTOM DEPOSITS, PROC. TENTH CONF. GREAT LAKES RESEARCH, GRT. LAKES RES. DIV., UNIVERSITY OF MICHIGAN, ANN ARBOR, 1967 (IN PRESS).

PLEISTOCENE AND GROUNDWATER

966. MCANDREWS, J.H., ROYAL ONTARIO MUSEUM-
QUATERNARY POLLEN ANALYTICAL INVESTIGATIONS IN SOUTHERN ONTARIO, 1967-68.

967. MELLARY, A.A., JEFFS, D.N., ONTARIO WATER RESOURCES COMMISSION-AQUIFER TEST IN A SAND PLAIN AT BOTHWELL, ONTARIO, 1966-67.
A DRILLING AND PUMPING TEST PROGRAM TO DETERMINE THE AQUIFER CHARACTERISTICS OF A SHALLOW SAND PLAIN. SEE ABSTRACT PUBLISHED IN THE TECHNICAL PROGRAMME OF THE GEOL. ASSOC. OF CANADA AND THE MINERAL. ASSOC. OF CANADA, 1967.
AQUIFER TEST IN A SAND PLAIN IN THE TOWNSHIP OF COLCHESTER SOUTH NEAR HARROW, ONTARIO, 1966-68.
A DRILLING AND PUMPING TEST PROGRAM TO DETERMINE THE AQUIFER CHARACTERISTICS OF A SHALLOW SAND PLAIN.

968. MELLARY, A.A., SINGH, B.A., ONTARIO WATER RESOURCES COMMISSION-
AQUIFER CHARACTERISTICS OF THE GUELPH AND LOCKPORT FORMATIONS IN THE TOWNSHIP OF SULLIVAN, ONTARIO, 1967-68.
THE DETERMINATION OF THE HYDRAULIC CHARACTERISTICS OF THE GUELPH AND LOCKPORT FORMATIONS AND ESTABLISHMENT OF THE LOCAL AND REGIONAL FLOW PATTERN.

969. MIRYNECH, E., BROCK UNIV.-
SURFICIAL GEOLOGY OF TRENTON-CAMPBELLFORD MAP-AREAS, ONTARIO, 1959-68.
SURFICIAL GEOLOGY OF THE TWEED-TRENTON-PICTON-KINGSTON AREAS, ONTARIO, 1962-69.
SEE PLEISTOCENE AND SURFICIAL GEOLOGY OF THE KINGSTON-COBOURG-TWEED AREA, ONTARIO, GEOL. ASSOC. CAN. - MIN. ASSOC. CAN., GUIDEBOOK, KINGSTON MEETING, 1967, PP. 183-198.

970. PARSONS, M.L., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
HYDROGEOLOGY OF CLAY BELT, NORTHERN ONTARIO, 1966-68, PH.D. THESIS, UNIV. OF MICHIGAN.
CURRENT INVESTIGATION IS DIRECTED TOWARD A STUDY OF GROUNDWATER FLOW AND ITS INFLUENCE ON HEAT DISTRIBUTION NEAR THE EARTH S SURFACE.

971. PIKULA, R., WILKINS, R., DUCKWORTH, P., KENDRICK, G., ONTARIO WATER RESOURCES COMMISSION-
WATER RESOURCES SURVEY OF THE UPPER ALBANY RIVER DRAINAGE BASIN, ONTARIO, 1967-68.

PLEISTOCENE AND GROUNDWATER

TO ESTABLISH THE HYDROLOGIC REGIMES OF THE MAIN RIVER AND PRINCIPAL TRIBUTARIES, TO MAP THE GEOLOGY, VEGETATION, SOIL AND OTHER HYDROLOGIC FEATURES AND TO INTERPRET THE RELATIONSHIPS OF THESE PARAMETERS TO STREAMFLOW CHARACTERISTICS.

972. SIBUL, U., FLEISCHER, F.C., MORRISON, W.D., ONTARIO WATER RESOURCES COMMISSION-
WATER RESOURCES SURVEY OF THE BIG OTTER CREEK DRAINAGE BASIN, ONTARIO, 1965-68.
TO COLLECT AND INTERPRET DATA ON THE OCCURRENCE, AVAILABILITY AND QUALITY OF SURFACE WATERS AND GROUNDWATERS, PRESENT A HYDROLOGIC BUDGET AND PREPARE A DETAILED ACCOUNT OF WATER USE AND FUTURE WATER NEEDS IN THE BASIN.

973. SMITH, J.E., LEWIS, C.F.M., GEOL. SURV. CANADA-
POST-GLACIAL CRUSTAL DEFORMATION ON MANITOULIN ISLAND, 1967-69, PH.D. THESIS (SMITH, UNIV. OF TORONTO).
A BETTER UNDERSTANDING OF LOCAL DEFORMATION OF A POST-GLACIAL GEOIDAL SURFACE IS BEING SOUGHT THROUGH A DETAILED STUDY OF EMERGED SHORELINES OF THE NIPISSING GREAT LAKES ON MANITOULIN ISLAND. WATER-PLANE ELEVATIONS ARE INTERPRETED FROM ACCURATE MULTIPLE PROFILES OF CONSTRUCTIONAL AND EROSIONAL SHORELINE SEGMENTS OF NUMEROUS LOCATIONS AROUND THE ISLAND. TRENDS AND VARIATIONS WITHIN THE DATA WILL BE EVALUATED BY TREND SURFACE ANALYSIS. EFFECTS OF BEDROCK TOPOGRAPHY, BEACH DEPOSITIONAL PROCESSES AND POST-DEPOSITIONAL COMPACTION AND EROSION UPON BEACH MORPHOLOGY ARE BEING EVALUATED THROUGH SEISMIC SURVEYS AND RELATED STUDIES OF POST-NIPISSING AND MODERN LITTORAL ENVIRONMENTS.

974. SYMONS, K.E., ONTARIO WATER RESOURCES COMMISSION-
GROUNDWATER ASSESSMENT, 1964-.
TEST DRILLING AND TEST PUMPING PROGRAM WILL PROVIDE STRATIGRAPHIC AND AQUIFER CHARACTERISTIC DATA.

975. YAKUTCHIK, T.J., SINGH, B.A., SIBUL, U., ONTARIO WATER RESOURCES COMMISSION-
WATER RESOURCES SURVEY OF THE BIG CREEK DRAINAGE BASIN, ONTARIO, 1964-68.
TO COLLECT AND INTERPRET DATA ON THE OCCURRENCE, AVAILABILITY AND QUALITY OF SURFACE WATERS AND GROUNDWATERS, PRESENT A HYDROLOGIC BUDGET AND PREPARE A DETAILED ACCOUNT OF WATER USE AND FUTURE WATER NEEDS IN THE BASIN.

PLEISTOCENE AND GROUNDWATER

Prince Edward Island

976. CARR, P.A., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
SEA WATER INTRUSION PROBLEMS IN PRINCE EDWARD ISLAND AND NEW BRUNSWICK, 1965-.
A SUBPROJECT CONCERNING SEA WATER INTRUSION PROBLEMS IN SHIPPEGAN, NEW BRUNSWICK WAS STARTED IN AUGUST, 1967 BY D.D. BROWN AS A PH.D. THESIS PROJECT.

977. GRANT, D.R., GEOL. SURV. CANADA-
RECENT SUBMERGENCE IN NOVA SCOTIA AND PRINCE EDWARD ISLAND, 1966-69, PH.D. THESIS, CORNELL UNIV.-
THE OBJECTIVE IS TO DETERMINE THE ABSOLUTE RATES OF COASTAL SUBMERGENCE AND PRODUCE SUBMERGENCE CURVES. IT HAS BEEN FOUND THAT ERRORS IN MANY EARLIER ATTEMPTS TO ESTABLISH ABSOLUTE RATES HAVE STEMMED FROM CHANGES IN TIDAL RANGE WITH TIME, CHANGES IN RATES OF SEDIMENTATION, AND FROM COMPACTION OF SEDIMENTS. IN MANY CASES ALSO A HIATUS BETWEEN SALT AND FRESH-WATER PLANTS HAS GONE UNRECOGNIZED AND ONLY SOME MINIMUM RATE HAS RESULTED FROM RADIOCARBON DATING OF THE YOUNGER MARINE DEPOSIT. SOME 25 CONTROL POINTS HAVE NOW BEEN FOUND AND SAMPLES ARE BEING STUDIED.

Quebec

978. BOSTOCK, H.H., CUMMING, L.M., NORFORD, B.S., SANFORD, B.V., NORRIS, A.W., PRICE, L.L., CRAIG, B.G., MCDONALD, B.C., GEOL. SURV. CANADA-
OPERATION WINISK - AN AIR-SUPPORTED RECONNAISSANCE SURVEY OF BEDROCK AND SURFICIAL GEOLOGY OF HUDSON BAY LOWLANDS OF MANITOBA, ONTARIO AND QUEBEC, 1966-68.
SEE OPERATION WINISK, GEOL. SURV. CAN., PAPER 68-1, 1968.

979. DESAUREAULT, R., MINISTERE DES RICHESSES NATURELLES DU QUEBEC-
INVENTAIRE DES EAUX SOUTERRAINES AUX ILES-DE-LA MADELEINE, 1966-68.
LA PREMIERE ANNEE, SOIT EN 1966, COMPRENAIT UNE ETUDE GEOLOGIQUE, UN INVENTAIRE DES PUITS EXISTANTS ET UNE CAMPAGNE DE FORAGES. LA DEUXIEME ANNEE, EN 1967, A COMPRIS L AMENAGEMENT DE PUITS D ESSAI ET D OBSERVATION ET L EXECUTION D EPREUVES DE POMPAGE DE 72 HEURES.

980. DUBE, J.C., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME)-
PLEISTOCENE GEOLOGY OF AYLMER AND ST-FRANCOIS LAKES

AREA, EASTERN TOWNSHIPS, QUEBEC, 1967-68, PH.D. THESIS.

981. GORMAN, W.A., QUEEN*S UNIV.-
DEGLACIATION OF THE ST. LAWRENCE LOWLAND, 1963-68.
SEE PALEOGEOGRAPHY OF THE CHAMPLAIN SEA (ABSTRACT), VII INTERNATIONAL CONGRESS, INT. ASSOC. FOR QUATERNARY RESEARCH, BOULDER, COLORADO, P. 173, 1965.

982. GRENIER, C., MINISTERE DES RICHESSES NATURELLES DU QUEBEC-
INVESTIGATION EN EAU SOUTERRAINE DANS 11 MUNICIPALITES RURALES DU QUEBEC, 1966-68.
IL S AGIT D UN PROGRAMME CONJOINT ARDA. LE TRAVAIL D INVESTIGATION EST EFFECTUE PAR LE PERSONNEL DE LA DIRECTION DE L HYDROGEOLOGIE DU MINISTERE DES PROJET ILE D ORLEANS ET REGION NORD DE QUEBEC, 1968-.
IL S AGIT DE DETERMINER LES POTENTIALITES AQUIFERES DE CETTE REGION ET DE DETERMINER LA TOPOGRAPHIC DE LA ROCHE EN PLACE.
RICHESSES NATURELLES DU QUEBEC.

983. LASALLE, P., CHAGNON, J.Y., DESSUREAULT, R., MINISTERE DES RICHESSES NATURELLES DU QUEBEC-
ETUDE DES SEDIMENTS MEUBLES DE LA REGION DU LAC ST-JEAN RIVIERE SAGUENAY, QUEBEC, 1967-69.
EN COOPERATION AVEC LES SERVICES GEOLOGIQUES DU MINISTERE DES RICHESSES NATURELLES, LE SERVICE DE L HYDROGEOLOGIE A PRATIQUER ENVIRON 7,000 PIEDS DE FORAGE AFIN DE DETERMINER LA NATURE ET L EPAISSEUR DES MATERIAUX NON CONSOLIDES. DEJA QUELQUE 3,000 PIEDS SONT TERMINES. CE TRAVAIL EN PLUS DE SERVIR AUX ETUDES GEOLOGIQUES DE NOS DIFFERENTS SERVICES, NOUS FACILITERA LA TACHE QUAND VIENDRA LE TEMPS D EFFECTUER DES LEVES HYDROGEOLOGIQUES DANS LA REGION SOUS ETUDE. IL S AGIT D UN PROGRAMME FINANCE PAR L ADMINISTRATION ARDA.

984. LEDOUX, R.L., LAVAL UNIV.-
MINERALOGICAL STUDIES OF QUICK CLAYS IN THE PROVINCE OF QUEBEC, 1965-68.
INCLUDES MINERALOGICAL, MECHANICAL AND PHYSICO-CHEMICAL STUDIES OF THE QUICK CLAYS.

985. MIRYNECH, E., BROCK UNIV.-
SURFICIAL GEOLOGY, OPERATION LEAF RIVER, RICHMOND GULF-CAPE SMITH-UNGAVA BAY, NORTHERN QUEBEC, 1963-69.

986. PREVOT, J.-M., MINISTERE DES RICHESSES NATURELLES DU QUEBEC-
INVENTAIRE DES EAUX SOUTERRAINES DANS LES COMTES DE ST-HYACINTHE - ROUVILLE, QUEBEC, 1967-69.
IL S AGIT D INVENTORIER LES EAUX SOUTHERRAINES DANS UN TERRITOIRE OU L APPROVISIONNEMENT D EAU DEVIENT DE PLUS EN PLUS IMPERATIF. C EST UN PROGRAMME CONJOINT ARDA.

987. ROCHETTE, F., FRECHETTE, J.-G., MINISTERE DES RICHESSES NATURELLES DU QUEBEC-
BASSIN DU RUISSEAU DES EAUX VOLEES, FORET MONTMORENCY, QUEBEC, 1967-69.
DES TRAVAUX PRELIMINAIRES FURENT EFFECTUES DURANT L ETE 1967, TELS QUE LA GEOLOGIE STRUCTURALE, LA GEOLOGIE DU PLEISTOCENE DE MEME QUE DES LEVES SISMIQUES. ACTUELLEMENT, UNE CAMPAGNE DE FORAGE DE RECONNASISSANCE EST EN COURS, AFIN DE DETERMINER LA NATURE ET L ESPAISSEUR DU MORT-TERRAIN.

988. SHILTS, W.W., GEOL. SURV. CANADA-
PLEISTOCENE GEOLOGY, LAKE MEGANTIC AREA, QUEBEC, 1967-69, PH.D. THESIS, SYRACUSE UNIV.
SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

989. SIMARD, G., MINISTERE DES RICHESSES NATURELLES DU QUEBEC-
BASSIN DE LA RIVIERE EATON, QUEBEC, 1965-74.
NOUS SOMMES PRESENTEMENT A COMPLETER LA PHASE SECONDAIRE DES TRAVAUX, SOIT L IMPLANTATION DE PUITS ET DE PIEZOMETRES EN VUE D ETUDIER LE REGIME D ECOULEMENT DE L EAU SOUTERRAINE DE LES DIVERS PARAMETRES HYDROGEOLOGIQUES (PHASE FINALE).

990. SIMARD, G., DUBE, J.-C., MINISTERE DES RICHESSES NATURELLES DU QUEBEC-
LAC AYLMER - ST-FRANCOIS, QUEBEC, 1966-.
IL SEMBLE D APRES LES MESURES HYDROMETRIQUES QUE LE BASIN VERSANT ALLARD NE SOIT PAS COMPLETEMENT ETANCHE, AMENANT AINSI UN ECOULEMENT D EAU SOUTHERRAINE D UN BASSIN A UN AUTRE. LE PROGRAMME EST AXE SUR L ETUDE DES MATERIAUX MEUBLES ET DU ROC AFIN DE DETERMINER LEUR PERMEABILITE.

991. SLIVITZKY, M., QUEBEC DEPT. OF NATURAL RESOURCES-
EATON RIVER - REPRESENTATIVE BASIN, QUEBEC, 1965-.
COMPLETE WATER BUDGET STUDY INCLUDING GEOLOGICAL STUDIES AIDED BY DRILLING.

PLEISTOCENE AND GROUNDWATER

Saskatchewan

992. CHRISTIANSEN, E.A., WHITAKER, S.H., SASKATCHEWAN RESEARCH COUNCIL-
GROUNDWATER GEOLOGY IN SASKATCHEWAN, 1959-.
THE OBJECTIVE OF THESE STUDIES IS TO DELINEATE SUBSURFACE FORMATIONS CAPABLE OF SUPPLYING USEABLE QUANTITIES OF GROUNDWATER. THIS IS BEING DONE BY AN EXTENSIVE TEST DRILLING PROGRAM. SEE GEOLOGY AND GROUNDWATER RESOURCES OF THE WOOD MOUNTAIN AREA (72-G) SASKATCHEWAN, MAP NO. 5, 1967.

993. DYCK, J.H., SASKATCHEWAN RESEARCH COUNCIL-
GEOPHYSICAL PROSPECTING FOR GROUNDWATER IN SOUTHERN SASKATCHEWAN - PRINCIPALLY BY ELECTRICAL METHODS, 1964-68, PH.D. THESIS.
AN ARDA SUPPORTED PROGRAM TO DETERMINE PHYSICAL PROPERTIES OF GLACIAL DRIFT WHICH COULD BE USED TO DETECT AND EVALUATE WATER BEARING FORMATIONS. BOTH SURFACE AND BOREHOLE ELECTRICAL DATA HAVE BEEN CORRELATED WITH GEOLOGICAL DATA.

994. GENDZWILL, D.J., DYCK, J.H., PEPPER, T.P., SASKATCHEWAN RESEARCH COUNCIL-
GEOPHYSICAL PROSPECTING FOR GROUNDWATER IN SOUTHERN SASKATCHEWAN, 1963-70.
EVALUATION AND DEVELOPMENT OF GEOPHYSICAL METHODS, PARTICULARLY ELECTRICAL, GRAVITY, SEISMIC, AND WELL LOGGING TECHNIQUES IN THEIR APPLICATION TO GROUNDWATER PROBLEMS. SEE GEOPHYSICAL METHODS FOR HYDROLOGIC SEARCH, 1966, ENCYCLOPEDIA OF EARTH SCIENCES, REINHOLD PUBLICATIONS (IN PRESS).

995. LANGHAM, E.J., SASKATCHEWAN RESEARCH COUNCIL-
INTERNAL DRAINAGE BASIN - BIG QUILL LAKE, SASKATCHEWAN, 1964-74.
INCLUDES STUDY OF GROUNDWATER AND STRATIGRAPHY.

996. MENELEY, W.A., SASKATCHEWAN RESEARCH COUNCIL-
GROUNDWATER HYDROLOGY STUDIES IN SASKATCHEWAN, 1964-.
THE FIELDS OF STUDY IN THIS PROJECT ARE HYDROLOGIC EVALUATION OF MAJOR AQUIFER SYSTEMS, EXPLORATION AND DEVELOPMENT OF SMALL GROUNDWATER SUPPLIES AND A REGIONAL OBSERVATION WELL PROGRAM. SEE GEOLOGY AND GROUNDWATER RESOURCES OF THE MELFORT AREA (73-A) SASKATCHEWAN, MAP NO. 6, 1967.

997. MOTT, R.J., GEOL. SURV. CANADA-
PALYNOLOGICAL STUDIES IN CENTRAL SASKATCHEWAN, 1965-68.
INVOLVES THE STUDY OF LATE-GLACIAL AND POST-GLACIAL VEGETATIONAL AND CLIMATIC CHANGES AND GEOCHRONOLOGY IN CENTRAL SASKATCHEWAN WITH EMPHASIS ON FLUCTUATIONS OF THE FOREST-GRASSLAND BOUNDARY IN POST-GLACIAL TIME. SEE GEOL. SURV. CAN., PAPER 67-1A, PP. 122-123, 1967.

998. PEPPER, T.P., SASKATCHEWAN RESEARCH COUNCIL-
APPLICATION OF GEOPHYSICAL METHODS AS AIDS IN PROSPECTING FOR AQUIFERS, 1964-.
STUDY OF GEOPHYSICAL METHODS, WITH EMPHASIS ON ELECTRICAL TECHNIQUES, TO AID IN DELIMITING AQUIFERS IN SOUTHERN SASKATCHEWAN.

999. RUTHERFORD, A., SASKATCHEWAN RESEARCH COUNCIL-
TRITIUM DATING, 1964-.
STUDY OF MOVEMENT OF GROUNDWATER, RECHARGE OF RIVERS AND EVAPORATION - PRECIPITATION CYCLE. SEE INTERPRETATION OF TRITIUM CONCENTRATIONS IN SASKATCHEWAN WATERS- PROGRESS REPORT NO. 2, CHEMISTRY DIVISION, SASK. RESEARCH COUNCIL.

1000. VONHOF, J.A., INLAND WATERS BRANCH, DEPT. ENERGY, MINES AND RESOURCES-
THE EFFECT OF BRINE PONDS ON THE GROUNDWATER FLOW REGIMAN, SASKATCHEWAN, 1967-.

Yukon Territory

1001. BROSCOE, A.J., WESTGATE, J.A., THOMSON, S., CURRIE, D.V., UNIV. OF ALBERTA, BAYROCK, L.A., BERG, T.E., RESEARCH COUNCIL OF ALBERTA, RUTTER, N.W., GEOL. SURV. CANADA, KINISKY, J.J., RESEARCH COUNCIL OF ALBERTA.
GLACIAL GEOLOGY AND HYDROLOGY, STEELE GLACIER TERMINUS AREA, YUKON TERRITORY, 1967-68.
THE DATA GAINED IN 1967 ARE NOW BEING EVALUATED. SEVERAL PAPERS ON THE GLACIAL GEOLOGY AND HYDROLOGY OF THE GLACIER ARE PLANNED.

1002. HUGHES, O.L., GEOL. SURV. CANADA-
SURFICIAL GEOLOGY, AISHIHIK LAKE MAP-AREA, YUKON TERRITORY, 1966-68.
INCLUDES DEFINING LIMITS OF SUCCESSIVE ICE ADVANCES, AND DATING OF THOSE ADVANCES, DRILLING OF GLACIAL LAKE SEDIMENTS TO DETERMINE THE ORIGIN OF

THERMOKARST TOPOGRAPHY ON THE SEDIMENTS AND AIRPHOTO INTERPRETATION INVENTORY OF OPEN-SYSTEM PINGOS. IN IN CENTRAL YUKON. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

1003. RAMPTON, V., GEOL. SURV. CANADA-
PLEISTOCENE GEOLOGY OF THE SNAG-KLUANE LAKE AREA, SOUTHWESTERN YUKON, 1964-68, PH.D. THESIS.
THE PRIMARY OBJECTIVES ARE TO ESTABLISH A PLEISTOCENE CHRONOLOGY TO DEVELOP A TECHNIQUE FOR QUANTITATIVELY DESCRIBING AND CORRELATING MORAINIC DEPOSITS IN THE NORTH AMERICAN CORDILLERAN, TO OUTLINE THE MAXIMUM EXTENT OF EACH GLACIAL ADVANCE AND TO INVESTIGATE THE VEGETATIONAL SEQUENCE AND CLIMATIC TRENDS OF THE LATE PLEISTOCENE IN SOUTHWESTERN YUKON. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

1004. RUTTER, N.W., GEOL. SURV. CANADA-
MORAINAL STUDIES OF THE BIGHORN AND GRIZZLY GLACIER, YUKON TERRITORY, 1967.
SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

General Problems

1005. BOZOZUK, M., BURN, K.N., CRAWFORD, C.B., EDEN, W.J., JARRETT, P.M., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
GEOTECHNICAL PROPERTIES OF EASTERN MARINE CLAY, 1951-.
BOTH FIELD AND LABORATORY STUDIES ARE BEING CONDUCTED ON THE **CHAMPLAIN SEA** CLAY OF THE ST. LAWRENCE LOWLANDS. FIELD STUDIES ARE CONCERNED WITH LANDSLIDE OCCURRENCES, SETTLEMENT OBSERVATIONS OF HIGHWAY EMBANKMENTS AND THE EFFECT OF VOLUME CHANGE DUE TO SEASONAL VARIATIONS IN SOIL MOISTURE. ATTEMPTS ARE ALSO BEING MADE TO MEASURE THE LOADING OF PILES DUE TO NEGATIVE SKIN FRICTION CAUSED BY SUBSIDING CLAY LAYERS. LABORATORY INVESTIGATIONS ARE BEING CONTINUED ON THE STRESS-DEFORMATION CHARACTERISTICS OF THE CLAY. SEE STABILITY OF NATURAL SLOPES IN SENSITIVE CLAY- JOUR. SOIL MECH. AND FDNS. DIVISION, PROC. ASCE, VOL. 93, NO. SM4, PP. 419-436, 1967.

1006. BROWN, R.J.E., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
PERMAFROST DISTRIBUTION IN CANADA, 1953-.
OBSERVATIONS ON THE OCCURRENCE OF PERMAFROST THROUGHOUT THE PERMAFROST REGION OF CANADA, WITH EMPHASIS ON THE SOUTHERN FRINGE AREA, ARE BEING COLLECTED CONTINUOUSLY BY DIRECT FIELD OBSERVATIONS, REVIEW

OF THE TECHNICAL LITERATURE, AND REPORTS FROM OTHER INDIVIDUALS AND AGENCIES. ACCOMPANYING THIS COLLECTION OF INFORMATION IS THE STUDY OF THE CLIMATIC AND TERRAIN FACTORS COMPRISING THE PERMAFROST ENVIRONMENT AS A MEANS OF IMPROVING THE UNDERSTANDING OF AND ABILITY TO PREDICT THE DISTRIBUTION AND OCCURRENCE OF PERMAFROST.

1007. BURKE, K.B.S., GEOL. SURV. CANADA (PART TIME), UNIV. OF SASKATCHEWAN-
STUDY OF AMPLITUDE AND FREQUENCY CHARACTERISTICS OF SEISMIC WAVES IN SURFICIAL DEPOSITS OF THE CANADIAN PRAIRIES, 1966-67.
VELOCITY CORRELATIONS WITH LITHOLOGY ARE COMMON BUT THE STUDY OF THE AMPLITUDE AND FREQUENCY CHARACTERISTICS OF SEISMIC WAVES TRANSMITTED IN SURFICIAL WAVEFRONT SURVEYS IN SOME AREAS INDICATE WHETHER OR NOT THERE ARE DIFFERENT VELOCITIES ASSOCIATED WITH WAVEFRONT SURVEYS IN SOME AREAS INDICATE WHETHER OR SURFICIAL MATERIALS AND BEDROCK.

1008. BURKE, K.B.S., FINLAYSON, G.B., UNIV. OF SASKATCHEWAN-
SEISMIC INVESTIGATIONS OF SURFICIAL DEPOSITS, 1966-68-
M.SC. THESIS (FINLAYSON).
SEE PROBLEMS OF SEISMIC PROSPECTING FOR GROUNDWATER DEPOSITS - CANADIAN CENTENNIAL CONFERENCE ON MINING AND GROUNDWATER GEOPHYSICS, NIAGARA FALLS, 1967.

1009. BURKE, K.B.S., WYDER, J.E., UNIV. OF SASKATCHEWAN-
AN EVALUATION OF GEOPHYSICAL METHODS FOR LOCATION OF SHALLOW AQUIFERS, 1964-68- PH.D. THESIS (WYDER).

1010. CHURCHER, C.S., ROYAL ONTARIO MUSEUM-
PLEISTOCENE FAUNAS OF THE ALBERTA AND SASKATCHEWAN PRAIRIES, 1965-.
THIS PROJECT INVOLVES THE GEOLOGICAL AND PALAEONTOLOGICAL INVESTIGATION OF FOSSILIFEROUS SITES MAINLY IN THE SOUTH SASKATCHEWAN RIVER BASIN. NEW OR FIRST RECORDS OF CANADIAN PLEISTOCENE MAMMALS ARE BEING OBTAINED AND STRATIGRAPHIC CORRELATION BETWEEN KNOWN FAUNAS IN THE UNITED STATES IS BECOMING EVIDENT. DATES CAN THUS BE SUGGESTED FOR FLUVIATILE MEMBERS SOME PLEISTOCENE SECTIONS WITHIN THIS RIVER SYSTEM. SEE THE PLEISTOCENE UNGULATES FROM THE BOW RIVER GRAVELS AT COCHRANE, ALBERTA, CAN. JOUR. EARTH SCI. (IN PRESS).

1011. CRAIG, B.G., MCDONALD, B.N., GEOL. SURV. CANADA-
QUATERNARY GEOLOGY OF THE HUDSON BAY LOWLAND, 1967-.
INCLUDES STUDY OF THE STRATIGRAPHIC SUCCESSION OF INTERGLACIAL, GLACIAL AND POST-GLACIAL DEPOSITS, LATE-

GLACIAL AND POST-GLACIAL HISTORY AS REGARDS THE PATTERN OF DEGLACIATION, EXTENT, CHRONOLOGY AND PATTERN OF THE POST-GLACIAL MARINE INVASION AND ITS INFLUENCE ON THE PATTERN OF DEGLACIATION, AND THE AMOUNT AND CHRONOLOGY OF LATE QUATERNARY ISOSTATIC UPLIFT. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

1012. DAVID, P.P., UNIV. OF MONTREAL-
SAND DUNE OCCURRENCES OF CANADA, 1967-70.
A MAP SHOWING THE DISTRIBUTION OF SAND DUNES IN CANADA IS BEING PREPARED.
STUDY OF SELECTED SAND DUNE AREAS IN CANADA, 1965-69.
SOME 15 AREAS OF SAND DUNE OCCURRENCES REPRESENTING DIFFERENT ENVIRONMENT OF DUNE DEVELOPMENT WERE SELECTED FROM QUEBEC, ONTARIO, MANITOBA AND SASKATCHEWAN. IN EACH AREA THE MORPHOLOGY, STRUCTURE AND STRATIGRAPHY OF THE DUNES IS STUDIED, THE PHYSICAL PROPERTIES OF THE DUNE SANDS AND SOURCE DEPOSITS IS DETERMINED, THE RATE OF ADVANCE OF ACTIVE DUNES IS MEASURED, AND THE CHRONOLOGY OF DUNE-DEVELOPMENT IS ESTABLISHED.

1013. DELORME, L.D., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
PALEOHYDROGEOLOGY, 1965-70.
INCLUDES STUDIES OF QUATERNARY STRATIGRAPHY, PALEOECOLOGY, TOLERANCE LIMITS FOR FRESHWATER OSTRACODA, AND PAST AND PRESENT DISTRIBUTION OF FRESHWATER OSTRACODA FOR INTERIOR PLAINS OF CANADA.

1014. DREIMANIS, A., VAGNERS, U.J., UNIV. OF WESTERN ONTARIO-
RELATIONSHIP OF LITHOLOGIC AND GRANULOMETRIC COMPOSITION OF TILL TO BEDROCK, AND TO THE COMMINUTION OF DRIFT DURING GLACIAL TRANSPORT, 1962-, PH.D. THESIS (VAGNERS).
THREE PAPERS PRESENTED IN SWEDEN AND POLAND IN SEPTEMBER, 1967, SUMMARIZE THE RESULTS OF INVESTIGATIONS AND SUGGEST A NEW APPROACH IN SELECTION OF GENETICALLY SIGNIFICANT PARAMETERS FOR STUDIES OF TILLS.

1015. ELSON, J.A., MCGILL UNIV.-
GLACIAL LAKE AGASSIZ, 1964-70.
STRATIGRAPHY OF VARIOUS BASINS WITHIN LAKE AGASSIZ AND NATURE AND ALTITUDES OF SHORE FEATURES INCLUDING BEACHES, DELTAS AND THE POSITIONS OF OUTLETS ARE STUDIED WITH A VIEW TO IMPROVING OUR KNOWLEDGE OF THE LAKE. SEE GEOLOGY OF GLACIAL LAKE AGASSIZ, IN W.J. MAYER-OAKES, ED., LIFT, LAND AND WATER, PROCEEDINGS OF

THE 1966 CONFERENCE ON ENVIRONMENTAL STUDIES OF GLACIAL LAKE AGASSIZ REGION, UNIV. MANITOBA PRESS, PP. 37-95.

1016. FREEZE, R.A., BANNER, J.A., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROUNDWATER RECHARGE AND DISCHARGE THROUGH THE UNSATURATED ZONE, 1967-69.
THE MECHANISM OF GROUNDWATER RECHARGE AND DISCHARGE IN THE SATURATED ZONE AS IT RELATES TO THE UNSATURATED ZONE PROCESSES OF INFILTRATION AND EVAPORATION IS BEING INVESTIGATED WITH A THREE-WAY ATTACK BY THEORETICAL STUDIES INVOLVING MATHEMATICAL MODELS AND DIGITAL COMPUTER SIMULATION, LABORATORY STUDIES USING COLUMN EXPERIMENTS, AND BY FIELD MEASUREMENT IN THE GOOD SPIRIT LAKE DRAINAGE BASIN, AN IHD REPRESENTATIVE BASIN. SEE THE CONTINUITY BETWEEN GROUNDWATER FLOW AND FLOW IN THE UNSATURATED ZONE, NRC (CANADA), SIXTH HYDROLOGY SYMPOSIUM, SASKATOON, NOV. 15-16, 1967.

1017. FRENKEL, O.J., MCGILL UNIV.-
FLOW OF ELECTROLYTES THROUGH CLAYS, 1959-68, M.SC. THESIS.

1018. GILLILAND, J.A., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROUNDWATER OBSERVATION WELL PROGRAM, 1965-.
PROJECT COVERS RESEARCH INTO CRITERIA TO BE USED FOR ESTABLISHING A NATIONAL NETWORK ORIENTED TOWARDS RECOVERING **RESOURCE** INFORMATION. SEE DIGITIZING, STORING AND RECOVERING OBSERVATION WELL HYDROGRAPHS, JOUR. OF HYDROLOGY (IN PRESS).

1019. GORMAN, W.A., QUEEN S UNIV.-
TRANSPORTATION BY ESKER STREAMS, 1964-68.

1020. GRANT, D.R., GEOL. SURV. CANADA-
RECENT SUBMERGENCE IN NOVA SCOTIA AND PRINCE EDWARD ISLAND, 1966-69.
THE ABSOLUTE RATE OF SUBMERGENCE AT VARIOUS CONTROL SITES IN THE REGION IS BEING DETERMINED BY RADIOCARBON DATING OF THE CONTACT BETWEEN MARINE SEDIMENTS SUPERIMPOSED ON TERRESTRIAL SEDIMENTS. RATES OF ONE TO TWO FEET PER CENTURY ARE INDICATED FOR THE PERIOD 5,000 - 1,000 YR. B.P. SUBMERGENCE IS CONTINUING AT THESE RATES TODAY, AS EVIDENCED BY CHANGES OF LEVEL OF 2 - 3 FEET RELATIVE TO EARLY COLONIAL STRUCTURES OF THE 17TH CENTURY. SEE GEOL. SURV. CAN., PAPER 67-1A,

P. 173, 1967.
RECENT SEDIMENTATION AND GEOLOGY OF LAURENTIAN CHANNEL, PH.D. THESIS, CORNELL UNIV.

1021. GRICE, R.H., MCGILL UNIV.-
QUALITATIVE ANALYSIS OF MULTI-AQUIFER SYSTEMS, 1968-.
A COMPUTER ITERATION METHOD TO MAKE USE OF FIELD DATA OBTAINED BY MEASUREMENT OF NATURAL VERTICAL WATER FLOWS IN NX DRILL HOLES.

1022. GROVE, G.D., UNIV. OF MANITOBA-
CONSOLIDATION AS A FACTOR IN PUMP TEST ANALYSIS, 1967-68- M.SC. THESIS.

1023. HARRISS, R.C., WILLIAMS, H.H., MCMASTER UNIV.-
GEOCHEMISTRY OF BROMINE AND FLUORIDE IN NATURAL WATERS, 1967-, PH.D. THESIS (WILLIAMS).
AN INVESTIGATION OF HALOGENS IN NATURAL WATERS USING SPECIFIC-ION ELECTRODE TECHNIQUES.

1024. HITCHON, B., RESEARCH COUNCIL OF ALBERTA IN COOPERATION WITH OTHER AGENCIES-
GEOCHEMISTRY AND HYDRODYNAMICS OF FORMATION WATERS IN WESTERN CANADA - A CONTINUING PROJECT.
COOPERATIVE PROJECTS ARE UNDERWAY WHIGH DEAL WITH MAJOR AND TRACE ELEMENTS AS WELL AS STABLE ISOTOPES OF HYDROGEN AND OXYGEN IN FORMATION WATERS IN WESTERN CANADA. THE DATA WILL BE SUBJECTED TO STATISTICAL FACTOR ANALYSIS, BASIN-WIDE AVERAGES DETERMINED AND THE WHOLE RELATED TO A CURRENT STUDY OF HYDRODYAMICS IN THE WESTERN CANADA BASIN. INTEREST CONTINUES IN A SIMILAR MANNER, OF SURFACE WATERS AND OF THE ORGANIC CONTENT OF BASIN SEDIMENTS. SEE FORMATION FLUIDS, CHAPTER 15 IN GEOLOGICAL HISTORY OF WESTERN CANADA, 1964, ALBERTA SOC. PETROL. GEOL., CALGARY, ALBERTA.

1025. JOHNSTON, G.H., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
KELSEY GENERATING STATION - DYKE STUDIES, 1958-.
THE PERFORMANCE OF DYKES CONSTRUCTED ON PERMAFROST IN THE SOUTHERN FRINGE AREA OF THE PERMAFROST REGION IN NORTHERN MANITOBA IS BEING STUDIED BY MEANS OF GROUND TEMPERATURE AND DYKE MOVEMENT OBSERVATIONS.

1026. KUPSCH, W.O., UNIV. OF SASKATCHEWAN-
QUATERNARY GEOLOGY, WESTERN CANADA - A CONTINUING PROJECT.

PLEISTOCENE AND GROUNDWATER

SEE POST-GLACIAL UPLIFT- A REVIEW, IN MAYER-OAKES, W.J. (ED), LIFE, LAND AND WATER- PROC, 1966 CONF, ENVIRONMENTAL STUDIES, GLACIAL LAKE AGASSIZ, WINNIPEG, UNIV. MANITOBA PRESS, PP. 155-185.

1027. KUPSCH, W.O., BURWASSER, G.J., UNIV. OF SASKATCHEWAN-
STUDY OF GLACIAL ICE-THRUST FEATURES OF THE INTERIOR PLAINS, 1967-69- M.SC. THESIS (BURWASSER).

1028. KUPSCH, W.O., GRAY, D.M., SIBUL, U., UNIV. OF SASKATCHEWAN
WATER BALANCE IN A REGIONAL GROUNDWATER FLOW SYSTEM, 1966-68- M.SC. THESIS (SIBUL).

1029. KUPSCH, W.O., GRAY, D.M., TORGERSEN, L., UNIV. OF SASKATCHEWAN-
COMPARATIVE STUDY OF SNOW-MELT UNDER ARCTIC AND PRAIRIE CONDITIONS, 1967-69- PH.D. THESIS (TORGERSEN).

1030. KUPSCH, W.O., PARRY, J.P., UNIV. OF SASKATCHEWAN-
A STUDY OF LOCAL DISCHARGE AND RECHARGE AREAS, 1966-68- M.SC. THESIS (PARRY).

1031. LEE, H.A., LANDY, R.A., GEOL. SURV. CANADA-
GLACIOFOCUS, 1962-.
THE PURPOSE IS TO DEVELOP A GLACIAL GEOLOGICAL METHOD OF MINERAL EXPLORATION. INCLUDES STUDIES OF TILL-BEDROCK LITHOLOGIC, HEAVY MINERAL, CHEMICAL RELATIONSHIP, ESKER BEDROCK LITHOLOGIC, HEAVY MINERAL, CHEMICAL RELATIONSHIP AND ESKERINE SEDIMENTATION. SEE GEOL. SURV. CAN., PAPER 68-1A.

1032. LENNOX, D., RESEARCH COUNCIL OF ALBERTA-
GEOPHYSICAL METHODS IN GROUNDWATER EXPLORATION, 1964-70.
EVALUATION OF THE UTILITY OF SEISMIC, RESISTIVITY, GRAVITY AND OTHER GEOPHYSICAL METHODS IN GROUNDWATER EXPLORATION. SEE A GENERALIZED METHOD OF NUMERICAL RESISTIVITY ANALYSIS, GEOPHYSICS, VOL. 31, NO. 3, PP. 625-626.

1033. MACFARLANE, I.C., DIVISION OF BUILDING RESEARCH, NATIONAL RESEARCH COUNCIL-
MUSKEG RESEARCH, 1954-.
THE COMPILATION OF **MUSKEG ENGINEERING HANDBOOK** IS NEARING COMPLETION, PUBLICATION PLANNED FOR 1968. SEE ENGINEERING PROBLEMS IN PEAT SOILS - PROCEEDINGS, 15TH ANNUAL SOIL MECH. AND FOUNDATION ENGINEERING CON-

FERENCE, UNIV. OF MINNESOTA, MINNEAPOLIS, MARCH, 1967.

1034. MATTHEWS, J., UNIV. OF ALBERTA-
PALAEO-ENVIRONMENTAL STUDY OF THE QUATERNARY DEPOSITS ON THE SOUTH SIDE OF KOTZEBUE SOUND, ALASKA, 1967-69.

1035. MCANDREWS, J.H., ROYAL ONTARIO MUSEUM, BLOOM, A.L., CORNELL UNIV.-
POLLEN AND OTHER PLANT FOSSILS AT THE FERNBANK INTERGLACIAL SITE, CAYUGA LAME, NEW YORK, 1967-68.
THE SITE APPEARS TO BE CORRELATIVE TO THE DON BEDS OF THE TORONTO FORMATION.

1036. MEYBOOM, P., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROUNDWATER HYDROLOGY OF PRAIRIE SLOUGHS, 1965-68.
SEE MASS-TRANSFER STUDIES TO DETERMINE THE GROUNDWATER REGIME OF PERMANENT LAKES IN HUMMOCKY MORAINE OF WESTERN CANADA, JOUR. OF HYDROLOGY, VOL. 5, PP. 117-142, 1967.

1037. PREST, V.K., GEOL. SURV. CANADA-
QUATERNARY GEOLOGY OF CANADA, 1964-67.
A SUMMARY ACCOUNT OF THE QUATERNARY GEOLOGY OF CANADA INCLUDING AN OUTLINE OF THE HISTORY OF THE GLACIAL GREAT LAKES AND CONTIGUOUS WATER BODIES, AND A NEW OUTLINE OF THE WISCONSIN DEGLACIAL TREND. PARTICULAR ATTENTION HAS ALSO BEEN GIVEN TO PROBLEMS OF DEGLACIATION IN THE ATLANTIC PROVINCES, TO THE COCHRANE ICE ADVANCE IN JAMES BAY LOWLAND AND TO DIFFERENTIATE UPLIFT AND DRAINAGE HISTORY OF GLACIAL LAKE BARLOW-OJIBWAY BASIN.

1038. SADLER, L.D.M., WATER RESOURCES DIVISION, ALBERTA DEPT. OF AGRICULTURE-
LONG TERM EFFECTS OF IRRIGATION ON SHALLOW GROUNDWATER, 1966-67.
STUDY OF SHALLOW GEOLOGICAL MATERIALS TO RELATE IRRIGATION WATER AND SOIL MOISTURE TO GROUNDWATER IS PART OF STUDY.

1030. SCOTT, J.S., ST-ONGE, D.A., GEOL. SURV. CANADA-
GUIDE TO THE DESCRIPTION OF TILL, 1964-68.
THIS MANUAL OUTLINES PROCEDURES TO BE FOLLOWED TO ADEQUATELY DESCRIBE TILLS.

PLEISTOCENE AND GROUNDWATER

1040. TERASMAE, J., GEOL. SURV. CANADA-
QUATERNARY STRATIGRAPHIC PALYNOLOGY IN CANADA, AND ITS PALEOECOLOGICAL AND CLIMATOLOGICAL IMPLICATIONS, 1952-.
THIS PROJECT IS INTEGRATED WITH OTHER INVESTIGATIONS IN DIFFERENT FIELDS OF QUATERNARY RESEARCH CARRIED ON BY GOVERNMENT AND UNIVERSITY SCIENTISTS. THE LONG-TERM PROJECT PROCEEDS WITH COMPLETION OF NUMEROUS SUBPROJECTS OF MORE LIMITED SCOPE IN SELECTED GEOGRAPHICAL AREAS WHERE OTHER STUDIES, SUCH AS GEOLOGICAL MAPPING, REQUIRE SUPPORTING PALYNOLOGICAL INVESTIGATION. THESE LIMITED STUDIES ARE PERIODICALLY BROUGHT TOGETHER IN MORE COMPREHENSIVE REGIONAL SUMMARY REPORTS. SEE A REVIEW OF QUATERNARY PALAEOBOTANY AND PALYNOLOGY IN CANADA, GEOL. SURV. CAN., PAPER 67-13, 1967.

1041. TOTH, J., RESEARCH COUNCIL OF ALBERTA-
QUANTITATIVE FORMULATION OF THE CONCEPT **HYDRAULIC CONNECTION**, 1967-.
INVESTIGATIONS INTO THE HYDROGEOLOGICAL RAMIFICATIONS OF HOMOGENEITY AND HETEROGENEITY OF GEOLOGIC FORMATIONS. SEE RES. COUN. OF ALBERTA, CONT. PAPER 395 (IN PRESS).
DESIGN, DEVELOPMENT, AND APPLICATION OF A NEW TYPE OF ELECTRIC MODEL, 1966-67.
AN ELECTRIC ANALOG MODEL USING TELEDELTOS CONDUCTING PAPER, WHICH YIELDS POTENTIAL-FIELD DISTRIBUTIONS WITHOUT THE IMPOSED CONSTRAINTS OF ANY A PRIORI DETERMINED POINT OF THE BASIN SURFACE BEING A POINT OF INPUT OR OUTPUT (RECHARGE OR DISCHARGE, RESP.).

1042. VAN EVERDINGEN, R.O., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
BEDROCK AQUIFERS OF WESTERN CANADA, 1963-.
INVESTIGATION OF HYDROCHEMISTRY AND HYDRODYNAMICS IN THE WESTERN SEDIMENTARY BASIN, INITIALLY ON THE BASIS OF AVAILABLE INFORMATION FROM PETROLEUM FILES. THE SOUTH SASKATCHEWAN PROJECT IS A FIELD APPLICATION. SEE INFLUENCE OF THE SOUTH SASKATCHEWAN RESERVOIR (CANADA) ON PIEZOMETRIC LEVELS IN UNDERLYING BEDROCK AQUIFERS, JOUR. OF HYDROLOGY, VOL. 5, 1967.

1043. WESTGATE, J.A., UNIV. OF ALBERTA-
QUATERNARY VOLCANIC ASH CHRONOLOGY IN WESTERN CANADA, 1965-.
SEE VOLCANIC ASH LAYERS OF RECENT AGE AT BANFF NATIONAL PARK, ALBERTA, CANADA, CAN. J. EARTH SCIENCES, VOL. 4, PP. 155-161, 1967.

PLEISTOCENE AND GROUNDWATER

1044. WESTGATE, J.A., SMITH, D.G.W., UNIV. OF ALBERTA-
CHARACTERISATION OF QUATERNARY VOLCANIC ASH DEPOSITS
IN WESTERN CANADA, 1967-.

SEDIMENTOLOGY

1045. AUMENTO, F., LAWRENCE, D.F., GEOL. SURV. CANADA-
MARINE GEOLOGICAL INVESTIGATIONS, NORTH ATLANTIC OCEAN, 1967-.

1046. BAYLISS, P., DEERE, R., UNIV. OF CALGARY-
MINERALOGICAL STUDY OF THE JURASSIC IN WEST CENTRAL ALBERTA, 1967-68, M.SC. THESIS (DEERE).

1047. BEALES, F., OLDERSHAW, A.E., UNIV. OF TORONTO-
STRATIGRAPHY AND PALEOECOLOGY OF PALEOZOIC AND RECENT LIMESTONES - A CONTINUING PROJECT.
A STUDY OF THE CONDITIONS OF DEPOSITION OF ANCIENT LIMESTONES AND THEIR SUBSEQUENT DIAGENESIS INCLUDING PARTICULAR INTEREST IN THE ORIGIN AND SUBSEQUENT DEVELOPMENT OF POROSITY IN LIMESTONES. THE SEDIMENTS OF THE BRENT METEORITE CRATER ARE BEING STUDIED AS AN EXAMPLE OF ACCUMULATION, AND DIAGENESIS, IN A CONTROLLED SETTING. SEE AN ASPECT OF SEDIMENTARY BASIN EVOLUTION - THE CONCENTRATION OF MISSISSIPPI VALLEY TYPE ORES DURING THE LATE STAGES OF DIAGENESIS, BULL. CAN. PETROL., VOL. 16, 1967.

1048. BEERBOWER, J.R., MCMASTER UNIV.-
PALEOECOLOGIC STUDY OF EVOLUTIONARY DYNAMICS OF MARINE BIOCOENOSES, 1965-.

1049. BEERBOWER, J.R., BRAY, R.G., MCMASTER UNIV.-
PALAEOECOLOGY OF MIDDLE DEVONIAN AMBOCOELIA AGGREGATIONS, 1965-69, PH.D. THESIS (BRAY).
AN INVESTIGATION OF GEOLOGICAL ALTERATION OF FOSSIL SHELL MATERIAL AND ITS RELATIONSHIP TO AGGREGATION FORMATION.

1050. BEERBOWER, J.R., JORDAN, F.W., MCMASTER UNIV.-
GENESIS OF CARBONATE CONCRETIONS IN THE UPPER LUDLOWVILLE, MIDDLE DEVONIAN OF ERIE COUNTY, NEW YORK, 1965-68, M.SC. THESIS (JORDAN).

1051. BEERBOWER, J.R., VEMURI, R., MCMASTER UNIV.-
CLAY MINERAL AND TRACE ELEMENT VARIATION IN CYCLOTHEMIC ROCKS, 1965-67, PH.D. THESIS (VEMURI).

1052. BINDA, P., UNIV. OF ALBERTA-
PETROLOGY AND PALYNOLOGY OF LATE CRETACEOUS WHITEMUD BEDS, 1963-, PH.D. THESIS.

SEDIMENTOLOGY

1053. CALDWELL, W.G.E., BARUAH, K.C., UNIV. OF SASKATCHEWAN-
MINERALOGY OF A CRETACEOUS FORMATION IN SASKATCHEWAN, 1967-69- M.SC. THESIS (BARUAH).

1054. CAMERON, E.M., GEOL. SURV. CANADA-
GEOCHEMICAL STUDY OF CARBONATE ROCKS, 1963-68.
SEE EVALUATION OF SAMPLING AND ANALYTICAL METHODS FOR THE REGIONAL GEOCHEMICAL STUDY OF A SUBSURFACE CARBONATE FORMATION, JOUR. SED. PET., VOL. 36, PP. 755-763.

1055. CAMPBELL, F.H.A., UNIV. OF MANITOBA-
STUDIES OF THE SEDIMENTARY ROCKS OF THE RICE LAKE DISTRICT, MANITOBA, 1966-69- PH.D. THESIS.

1056. CARRIGY, M.A., RESEARCH COUNCIL OF ALBERTA-
PETROLOGY OF NONMARINE UPPER CRETACEOUS-TERTIARY SANDSTONES, ALBERTA, 1961-68.
A SUBDIVISION OF THE POST KNEE HILLS MEMBER FORMATIONS OF THE ALBERTA PLAINS BASED ON THE PETROGRAPHY OF THE SANDSTONES WILL BE PROPOSED.
MCMURRAY FORMATION STUDIES, ALBERTA, 1953-67.
SEE THE PHYSICAL AND CHEMICAL NATURE OF A TYPICAL TAR SAND. PART 1- BULK PROPERTIES AND BEHAVIOUR, PROC. 7TH WORLD PETROL. CONG., MEXICO CITY.

1057. CHANDLER, F.W., UNIV. OF WESTERN ONTARIO-
STRATIGRAPHY, STRUCTURE AND SEDIMENTOLOGY OF HURONIAN ROCKS IN HARROW AND MCKINNON TOWNSHIPS AND SURROUNDING AREAS OF ONTARIO, 1965-68.

1058. CHURCH, W.R., YOUNG, G.M., UNIV. OF WESTERN ONTARIO-
STRATIGRAPHY, STRUCTURE AND SEDIMENTOLOGY OF THE HURONIAN NORTH OF MANITOULIN ISLAND, ONTARIO, 1963-.
SEE HURONIAN STRATIGRAPHY OF THE MCGREGOR BAY AREA, ONTARIO, RELEVANCE TO THE PALEOGEOGRAPHY OF THE LAKE SUPERIOR REGION, JOUR. EARTH SCI., VOL. 3, PP. 203-210, 1966.

1059. CLACK, W.J., MCGILL UNIV.-
RECENT CARBONATE REEF SEDIMENTATION, CARRIACOU ISLAND, WEST INDIES, 1966-68, PH.D. THESIS.
A STUDY OF CARBONATE SEDIMENTATION ON THE EAST COAST OF CARRIACOU TO INVESTIGATE RATES OF SEDIMENTATION, TRANSPORTATION, AND THE USEFULNESS OF STATISTICAL PARAMETERS IN RELATION TO SEDIMENTARY ENVIRONMENTS.

SEDIMENTOLOGY

1060. COAKLEY, J.P., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
SEDIMENTOLOGICAL STUDIES IN THE GREAT LAKES, 1968-.
A STATISTICAL STUDY OF DISPERSAL TRENDS INVOLVING SAND-SIZED PARTICLES IN THE NEARSHORE ZONE OF LAKES ONTARIO, ERIE, AND HURON.

1061. CORNEIL, B., UNIV. OF ALBERTA-
LITHOFACIES STUDY OF ANTE CREEK REEF, ALBERTA, 1967-69, M.SC. THESIS.

1062. CROCKET, J.H., HARRISS, R.C., STAINTON, M., MCMASTER UNIV.-
PD, IR AND AU CONCENTRATIONS IN MANGANESE NODULES FROM MARINE WATERS, 1967-68.
PD, IR AND AU HAVE BEEN DETERMINED BY NEUTRON ACTIVATION ANALYSIS IN MANGANESE NODULES FROM THE BLAKE PLATEAU, THE MID-PACIFIC RISE AND THE ARCTIC OCEAN. THE CONCENTRATION RANGE FOR THESE METALS IS 1 TO 10 PPM. THEY ARE HOMOGENEOUS WITH RESPECT TO AU AND PD. PD IS ENRICHED IN THE PACIFIC OCEAN NODULES BY A FACTOR OF 2 TO 3 RELATIVE TO THE ATLANTIC OCEAN NODULES.

1063. CROWELL, G.D., ACADIA UNIV.-
WINDSOR GROUP SEDIMENTS ALONG MEANDER RIVER, HANTS COUNTY, NOVA SCOTIA, 1966-68, M.SC. THESIS.

1064. DANNER, W.R., UNIV. OF BRITISH COLUMBIA-
ORIGIN OF BEDDED CHERTS AND JASPERS, 1966-.
INCLUDES STUDY OF THE GREAT THICKNESSES OF BEDDED RADIOLARIAN CHERTS FOUND IN THE WESTERN CORDILLERA AND THE JASPERS ASSOCIATED WITH VOLCANIC ROCKS, PARTICULARLY THOSE WITH SPHERULITIC STRUCTURE.

1065. DINELEY, D.L., WILLIAMS, B.P., UNIV. OF OTTAWA-
SEDIMENTOLOGY AND PALAEOCOLOGY OF CONTINENTAL DEVONIAN ROCKS OF THE CHALEUR BAY AREA, QUEBEC, 1965-68.
STRATIGRAPHICAL AND SEDIMENTOLOGICAL FEATURES OF PRE-ESCUMINAC ROCKS ARE DESCRIBED. ESCUMINAC SEDIMENTOLOGY AND PALAEOECOLOGY INDICATE A COMPLEX LACUSTRINE ENVIRONMENT WITH A LARGE SPECIALIZED VERTEBRATE FAUNA. TWO PAPERS ARE IN PRESS. SEE STUDIES ON THE DEVONIAN STRATA OF CHALEUR BAY, QUEBEC-MARITIME SEDIMENTS, VOL. 2, PP. 7-10, 1966.

1066. DONALDSON, J.A., GEOL. SURV. CANADA, DEAN, R.S., MINES BRANCH-

STUDY OF CLAY MINERALS IN PROTEROZOIC SEDIMENTS, 1968-.
INCLUDES ANALYSES OF SANDSTONE AND SILTSTONE SANDS FROM UNITS OF THE DUBAWNT AND GOULBURN GROUPS, AND ATHABASCA AND MARTIN FORMATIONS.

1067. DRAPEAU, G., DALHOUSIE UNIV.-
SEDIMENTOLOGY OF THE SOUTHWESTERN PART OF THE SCOTIAN SHELF, 1964-68- PH.D. THESIS.
THE SEDIMENT DISTRIBUTION WAS STUDIED BY A SURVEY OF A CLOSELY SPACED SOUNDING LINE AND CONTINUOUS SEISMIC PROFILES. A LARGE NUMBER OF SURFACE SAMPLES WERE RETRIEVED FROM THE OCEAN BOTTOM. SEDIMENTOLOGICAL ANALYSES OF THE SAMPLES IS IN PROGRESS.

1068. FERGUSON, L., MOUNT ALLISON UNIV., O BRIEN, N.R., NEW YORK STATE COLLEGE-
ORIGIN OF FISSILITY IN SHALE, 1964-68.
INVOLVES THE CORRELATION OF X-RAY DATA ON THE NATURE AND ORIENTATION OF THE CLAY PARTICLES OF THE SHALE WITH PALAEONTOLOGICAL AND PALAEOECOLOGICAL DATA FROM THE SAME BED. SEE COMPARISON OF TWO TECHNIQUES FOR MEASURING SHALE COMPACTION, J. SEDIMENTARY PETROLOGY, VOL. 34, NO. 3, PP. 694-695, SEPT. 1964.

1069. FORSYTH, D., SMITH, D.L., QUEEN S UNIV.-
SEDIMENTARY STRUCTURES IN THE POTSDAM SANDSTONE NEAR KINGSTON, ONTARIO, 1967-68.
AN ANALYSIS OF INTERNAL BEDDING FEATURES, INCLUDING A PALAEOCURRENT STUDY, OF THE POTSDAM ORTHOQUARTZITE.

1070. FULTON, R.J., GEOL. SURV. CANADA-
QUATERNARY GEOLOGY SALVAGE, COLUMBIA RIVER DEVELOPMENT PROJECT, BRITISH COLUMBIA, 1965-.
IN ADDITION TO GATHERING AREAL INFORMATION THIS PROJECT INCLUDES A SEDIMENTATION STUDY OF ARROW LAKES. SOUTHERN END OF THE ARROW DAM RESERVOIR WAS COVERED DURING THE 1967 PHASE OF THIS PROJECT. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

1071. GARRISON, R.E., UNIV. OF BRITISH COLUMBIA-
ELECTRON MICROSCOPY OF PELAGIC LIMESTONES, 1964-.
STUDY OF THE COMPOSITION AND TEXTURES OF FINE-GRAINED PELAGIC LIMESTONES WHICH OCCUR IN MANY GEOSYNCLINAL BELTS. ROCK SUITES CURRENTLY UNDER INVESTIGATION ARE CENOZOIC AND MESOZOIC LIMESTONES IN THE WESTERN CORDILLERA. SEE NANNOFOSSILS IN EOCENE EUGEO-

SYNCLINAL LIMESTONES, OLYMPIC PENINSULA, WASHINGTON, NATURE, VOL. 215, PP. 1366-1367.

1072. GEES, R.A., MAHMUNDAR, H.H., DALHOUSIE UNIV.-
A STUDY OF THE CONTINENTAL SLOPE AND RISE OFF NOVA SCOTIA, 1968-.
THIS PROJECT, SCHEDULED TO START IN MARCH, 1968 WILL INCLUDE A CONTINUOUS SEISMIC PROFILING AND A SOUNDING SURVEY, SAMPLES AND CORES WILL BE COLLECTED AND SEDIMENTOLOGICAL, GEOCHEMICAL AND MINERALOGICAL STUDIES CARRIED OUT.

1073. GELDSETZER, H., SMITH, D.L., QUEEN*S UNIV.-
REGIONAL STUDY OF THE TYPE DEVONIAN OF NEW YORK AND PENNSYLVANIA, 1967-69, PH.D. THESIS (GELDSETZER).
A REGIONAL ANALYSIS OF THE EROSIONAL AND THE DEPOSITIONAL PATTERNS IN THE TYPE DEVONIAN OF NORTH AMERICA.

1074. GIBSON, D.W., GEOL. SURV. CANADA-
TRIASSIC STRATIGRAPHY AND PETROLOGY IN THE FOOTHILLS AND FRONT RANGES OF WESTERN CANADA, ALBERTA AND BRITISH COLUMBIA, 1962-.
THE DETAILED STUDY OF THE STRATIGRAPHY AND PETROLOGY TO PROVIDE DATA ON THE CHARACTER, STRUCTURE, DISTRIBUTION, AGE, STRATIGRAPHIC RELATIONSHIPS, ORIGIN OF THE BEDROCK, AND OTHER GEOLOGICAL DATA REQUIRED TO EVALUATE THE OIL, GAS AND MINERAL POTENTIALITIES OF THE REGION.

1075. GOPALASWAMY, T.K.N., SMITH, D.L., QUEEN*S UNIV.-
CARBONATE MINERALOGY OF REEF COMPLEXES, 1967-69, PH.D. THESIS (GOPALASWAMY).
AN ANALYSIS OF THE CARBONATE MINERALS IN THE REEF COMPLEX AND THEIR SIGNIFICANCE IN RELATION TO ENVIRONMENT.

1076. GRANT, A., DALHOUSIE UNIV.
A STUDY OF THE SEDIMENTARY ROCKS OCCURING ON THE LABRADOR SHELF, 1967-69- PH.D. THESIS.
TO DATE APPROXIMATELY 1,300 MILES OF SPARKER AND SOUNDING LINES HAVE BEEN SURVEYED AND A NUMBER OF CORE SAMPLES TAKEN.

1077. GRANT, D.R., GEOL. SURV. CANADA-
RECENT SUBMERGENCE IN NOVA SCOTIA AND PRINCE EDWARD ISLAND, 1966-69.

THE ABSOLUTE RATE OF SUBMERGENCE AT VARIOUS CONTROL SITES IN THE REGION IS BEING DETERMINED BY RADIOCARBON DATING OF THE CONTACT BETWEEN MARINE SEDIMENTS SUPERIMPOSED ON TERRESTRIAL SEDIMENTS. RATES OF ONE TO TWO FEET PER CENTURY ARE INDICATED FOR THE PERIOD 5,000 - 1,000 YR. B.P. SUBMERGENCE IS CONTINUING AT THESE RATES TODAY, AS EVIDENCED BY CHANGES OF LEVEL OF 2 - 3 FEET RELATIVE TO EARLY COLONIAL STRUCTURES OF THE 17TH CENTURY. SEE GEOL. SURV. CAN., PAPER 67-1A, P. 173, 1967.

RECENT SEDIMENTATION AND GEOLOGY OF LAURENTIAN CHANNEL, PH.D. THESIS, CORNELL UNIV.

1078. GREGORY, M., DALHOUSIE UNIV.-
SEDIMENTOLOGY AND NEONTOLOGY OF THE HALIFAX HARBOUR BASIN, 1967-69- PH.D. THESIS.

THE ENTIRE HABOUR BASIN WAS INVESTIGATED AS TO THE BOTTOM TOPOGRAPHY AND SUB-BOTTOM STRUCTURES. SURFACE SAMPLES AND SHORT CORE SAMPLES WERE COLLECTED. NEONTOLOGICAL AND SEDIMENTOLOGICAL STUDIES ARE IN PROGRESS.

1079. HACQUEBARD, P.A., CAMERON, A.R., DONALDSON, J.R., BIRMINGHAM, T.F., BARSS, M.S., GEOL. SURV. CANADA-
MICROSCOPIC COAL RESEARCH IN FIELDS OF COAL PETROLOGY AND CARBONIFEROUS PALYNOLOGY, A CONTINUING PROGRAM.

THE MICROSCOPIC STUDIES ARE CARRIED OUT FOR GEOLOGICAL AND COAL UTILIZATION PURPOSES, AND PROVIDE INFORMATION ON- (1) CORRELATION OF COAL SEAMS, (2) ORIGIN, SEDIMENTATION AND LATERAL VARIATIONS IN COMPOSITION, QUALITY AND THICKNESS OF COAL SEAMS, (3) STRATIGRAPHY OF THE CARBONIFEROUS AND PERMIAN AND AGE DETERMINATIONS BY MEANS OF FOSSIL SPORES ON TERRESTRIAL DEPOSITS OF UPPER PALAEOZOIC AGE, (4) COAL PREPARATION, COAL CLEANING AND COAL CARBONIZATION, (5) ASPECTS OF COAL RESEARCH FOR WHICH MICROSCOPIC STUDIES ARE REQUIRED. SEE CARBONIFEROUS AND PERMIAN SPORES OF CANADA, GEOL. SURV. CAN., PAPER 67-11, 1967.

1080. HALFERDAHL, L.B., RESEARCH COUNCIL OF ALBERTA-
STREAM DEPOSITS, ALBERTA, 1957-68.

FOR THIS PROJECT DATA HAVE BEEN OBTAINED ON COMPOSITION AND DISTRIBUTION OF ALLUVIAL GRAVELS, TRANSITION FROM GRAVEL TO SAND IN RIVER BEDS, DISTRIBUTION AND SOURCE OF IRONSTONE IN ALLUVIAL GRAVELS, HEAVY MINERALS IN ALLUVIAL SANDS AND GRAVELS, AND DISTRIBUTION OF PLACER GOLD.

SEDIMENTOLOGY

1081. HARRISS, R.C., CROCKET, J.H., MACDOUGALL, J.D., STAINTON, M., MCMASTER UNIV.-
GEOCHEMISTRY OF AU, PD, IR, AND OS IN DEEP-SEA SEDIMENTS AND MANGANESE NODULES, 1967-68, M.SC. THESIS (MACDOUGALL).

1082. HARRISS, R.C., TROUP, A., MCMASTER UNIV.-
MINERALOGY AND CHEMISTRY OF IRON-MANGANESE CONCRETIONS FROM FRESHWATER LAKES, 1967-68, M.SC. THESIS (TROUP).

1083. KEMP, A.L.W., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GREAT LAKES SEDIMENT ORGANIC PROGRAM, 1967-.
CHEMICAL STUDIES ARE BEING MADE TO INDENTIFY THE ORGANIC MATERIALS PRESENT IN THE SEDIMENTS OF LAKES ONTARIO AND ERIE AND TO DEFINE THE DIAGENETIC PROCESSES OPERATING IN THE SEDIMENTS.

1084. KERR, J.WM., GEOL. SURV. CANADA-
CONTROL OF GRANITIC BASEMENT UPON THE DEPOSITION AND DEFORMATION OF SEDIMENTS, 1963-.
SEE GEOL. SURV. CAN., PAPER 67-41, 1967, PP. 42-43.

1085. KING, L.H., MACLEAN, B., RASHID, M., BEDFORD INSTITUTE OF OCEANOGRAPHY-
MARINE GEOLOGY AND GEOCHEMISTRY OF THE SCOTIAN SHELF, 1963-.
SURFICIAL SEDIMENT AND BEDROCK STUDIES UTILIZING ECHOGRAMS AND CONTINUOUS SEISMIC-REFLECTION PROFILES, AS WELL AS OTHER TECHNIQUES, AND STUDIES ON THE STRUCTURAL CHEMISTRY OF THE ORGANIC COMPONENT, WITH THE OBJECTIVE OF SHOWING THE RELATION OF THE ORGANIC MATTER TO THE SEDIMENTARY ENVIRONMENT.

1086. LAWSON, D.E., UNIV. OF WATERLOO-
SEDIMENTOLOGY AND STRATIGRAPHY OF THE TORRIDONIAN OF PARTS OF WESTER ROSS AND SUTHERLAND, NORTHWEST SCOTLAND, 1962-67.
INCLUDES STUDY OF A VOLCANIC ASH-FLOW AND MUD-FLOW COMPLEX WITHIN THE LOWER TORRIDONIAN, MAJOR AND TRACE ELEMENT CONTENT OF TORRIDONIAN GREY SHALES, POSSIBLE MARINE PHYTOPLANKTONIC FOSSILS FROM TORRIDONIAN GREY SHALES.
SEDIMENTOLOGY AND STRATIGRAPHY OF THE BOSS POINT FORMATION IN SOUTHEASTERN NEW BRUNSWICK, 1960-69.
INCLUDES STUDY OF SIGNIFICANCE OF PLANT FRAGMENT

ORIENTATION IN RELATION TO PALAEOCURRENTS AND PALAEOENVIRONMENT. SEE SEDIMENTARY FACIES AND PALAEOCURRENTS IN THE BOSS POINT FORMATION, SOUTHEASTERN NEW BRUNSWICK, ABSTRACT, BULL. AMER. ASSOC. PET. GEOL., VOL. 47, NO. 2, PP. 361-362.

RECENT SEDIMENTS OF THE SHEDIAC BAY AREA, NEW BRUNSWICK, 1966-.
A STUDY OF THE FORM, FABRIC AND GRAIN-SIZE DISTRIBUTION OF NEAR SHORE SEDIMENTS TOWARDS A FULLER UNDERSTANDING OF THEIR SIGNIFICANCE AND GENESIS.

SEDIMENTOLOGY OF THE MEMRAMCOOK AND PETITCODIAC RIVERS AND THEIR ESTUARY, SOUTHEASTERN NEW BRUNSWICK, 1966-.

1087. LEITH, E.I., ANDERSON, D.T., MCPHERSON, R., UNIV. OF MANITOBA-

PLEISTOCENE STRATIGRAPHY AND SEDIMENTATION OF SOUTHEASTERN MANITOBA, 1967-69- PH.D. THESIS (MCPHERSON).

1088. LEVINSON, A.A., UNIV. OF CALGARY-

GEOCHEMISTRY OF TRACE AND MINOR ELEMENTS IN SEDIMENTARY ROCKS, 1965-.
SEE SPECULATION ON THE INCORPORATION OF BORON INTO ARGILLACEOUS SEDIMENTS, GEOCHIM. ET COSMOCHIM. ACTA, 30, PP. 844-862, 1966.

1089. LEWIS, C.F.M., GEOL. SURV. CANADA-

SEDIMENT DISTRIBUTION IN LAKE ONTARIO, 1966-69.
INCLUDES DELINEATION OF PRESENT AREAS AND RATES OF SUBAQUEOUS EROSION AND ACCUMULATION, AND THE EFFECT OF CRUSTAL REBOUND UPON WATER LEVELS AND BASIN SEDIMENTATION DURING THE LAST 10,000 YEARS. STRATIGRAPHIC AND QUANTITATIVE SURFACE SEDIMENT INFORMATION WILL BE EXTRACTED FROM ECHOGRAMS. PISTON AND GRAVITY CORES AND SURFACE SAMPLES WILL BE ANALYZED ROUTINELY FOR PARTICLE SIZE DISTRIBUTION, MINERALOGIC COMPOSITION, WATER AND ORGANIC CONTENT. RADIOCARBON PALYNOLOGICAL, AND MICROSFOSSIL ANALYSES OF SELECTED MATERIALS WILL BE ATTEMPTED. SEE SURVEY OF LAKE ONTARIO BOTTOM DEPOSITS, PROC. TENTH CONF. GREAT LAKES RESEARCH, GRT. LAKES RES. DIV., UNIVERSITY OF MICHIGAN, ANN ARBOR, 1967 (IN PRESS).

1090. LIBERTY, B.A., UNIV. OF GUELPH-

DETAILED CARBONATE STUDY, SOUTHERN ONTARIO, 1967-69.
AN EVALUATION OF TRACE ELEMENTS IN PALAEOZOIC FORMATIONS - AND THEIR USES AS INDICATORS.

SEDIMENTOLOGY

1091. LYALL, A.K., DALHOUSIE UNIV.-
SEDIMENTOLOGICAL STUDIES ON AND AROUND CAPE SABLE ISLAND, NOVA SCOTIA, 1966-69- PH.D. THESIS.
SEDIMENT SAMPLES WERE COLLECTED BOTH ON THE ISLAND AND IN THE NEARSHORE ENVIRONMENTS AROUND THE ISLAND. THE SOUNDING AND SPARKER SURVEY IS NEARING COMPLETION- ANALYSES OF THE SEDIMENT SAMPLES ARE IN PROGRESS AND BOTTOM CURRENTS OF THE NEARSHORE ENVIRONMENTS ARE BEING INVESTIGATED.

1092. LYALL, A.K., DALHOUSIE UNIV.-
SEDIMENTOLOGY AND NEONTOLOGY OF THE HALIFAX HARBOUR BASIN, 1967-69- PH.D. THESIS.
THE ENTIRE HARBOUR BASIN WAS INVESTIGATED AS TO THE BOTTOM TOPOGRAPHY AND SUB-BOTTOM STRUCTURES. SURFACE SAMPLES AND SHORT CORE SAMPLES WERE COLLECTED. NEONTOLOGICAL AND SEDIMENTOLOGICAL STUDIES ARE IN PROGRESS.

1093. MACKENZIE, W.S., GEOL. SURV. CANADA-
STRATIGRAPHY OF THE DEVONIAN SOUTHESK CAIRN CARBONATE COMPLEX AND ASSOCIATED STRATA, EASTERN JASPER NATIONAL PARK, ALBERTA, 1961-67.
A STUDY OF THE STRATIGRAPHY OF THE SOUTHESK CAIRN CARBONATE COMPLEX AND ITS RELATION TO LATERALLY EQUIVALENT SHALES AND ARGILLACEOUS LIMESTONE. A PETROGRAPHIC STUDY OF SELECTED ROCK UNITS WITHIN THE CARBONATE COMPLEX IS INCLUDED. SEE GEOL. SURV. CAN., PAPER 64-19, 1964.

1094. MACQUEEN, R.W., GEOL. SURV. CANADA-
LOWER PALAEOZOIC BEDROCK GEOLOGICAL STUDIES, LOWER MACKENZIE RIVER AREA, OPERATION NORMAN, 1967-70.
OPERATION NORMAN IS A HELICOPTER-SUPPORTED, RECONNAISSANCE BEDROCK AND SURFICIAL GEOLOGICAL STUDY OF THE LOWER MACKENZIE RIVER AREA (125,000 SQUARE MILES). DR. MACQUEEN IS RESPONSIBLE FOR STRATIGRAPHIC STUDIES (INCLUDING SEDIMENTOLOGY AND CORRELATION) OF ROCKS OF ORDOVICIAN AND SILURIAN AND FOR SOME OF THE MAPPING OF THESE ROCKS.

1095. MACQUEEN, R.W., BAMBER, E.W., GEOL. SURV. CANADA-
MISSISSIPPIAN STRATIGRAPHY, SEDIMENTOLOGY, AND CORRELATION, SOUTHERN ALBERTA, ROCKY MOUNTAINS AND FOOTHILLS, 1963-68.
A CONTINUING STUDY OF ALL MISSISSIPPIAN STRATA FROM THE CROWSNEST PASS AREA OF SOUTHERN ALBERTA TO THE JASPER AREA OF WEST-CENTRAL ALBERTA. THE STUDY HAS BEEN CONFINED TO SURFACE EXPOSURES IN THE ROCKY

MOUNTAIN FOOTHILLS AND FRONT RANGES. SEE STRATIGRAPHY OF THE BANFF FORMATION AND LOWER RUNDLE GROUP (MISSISSIPPIAN), SOUTHWESTERN ALBERTA, GEOL. SURV. CAN., PAPER 67-47 (IN PRESS).

1096. MACQUEEN, R.W., PRICE, L.L., GEOL. SURV. CANADA-
CARBONATE-EVAPORITE CYCLES IN THE SOURIS RIVER FORMATION, SASKATCHEWAN, 1967-68.
THE PURPOSE IS TO DESCRIBE THESE DEVONIAN CARBONATE-EVAPORITE CYCLES IN DETAIL, IN ORDER TO COMPARE THEM WITH MODERN SUPRATIDAL CARBONATE-EVAPORITE CYCLES DESCRIBED FROM THE PERSIAN GULF AND THE CARIBBEAN AREA. IN THE NEAR FUTURE WE HOPE TO BE ABLE TO TAKE ADVANTAGE OF A UNIQUE OPPORTUNITY TO STUDY THE CYCLES (ESPECIALLY ANHYDRITE-DOLOMITE RELATIONSHIPS) ON VERTICAL FACIES EXPOSED ON MINE SHAFT WALLS. SEE GEOL. SURV. CAN., PAPER 68-1A, 1968.

1097. MATTHEWS, J., UNIV. OF ALBERTA-
PALAEO-ENVIRONMENTAL STUDY OF THE QUATERNARY DEPOSITS ON THE SOUTH SIDE OF KOTZEBUE SOUND, ALASKA, 1967-69.

1098. MCALLISTER, A.L., BHATIA, D.M.S., UNIV. OF NEW BRUNSWICK-
FACIES CHANGE IN IRON FORMATION, BRUNSWICK NO. 12 MINE, BATHURST, NEW BRUNSWICK, 1966-69- M.SC. THESIS (BHATIA).

1099. MCILWAINE, W.H., UNIV. OF NEW BRUNSWICK-
AGE AND ORIGIN OF THE PERRY FORMATION, CHARLOTTE COUNTY, NEW BRUNSWICK, 1963-68- M.SC. THESIS.
THE STUDY IS CONCERNED MAINLY WITH DIRECTIONAL SEDIMENTARY STRUCTURES SUCH AS TROUGH CROSS-BEDDING, IMBRICATION AND PRIMARY CURRENT LINEATION. PEBBLE COUNT STUDIES ARE ALSO BEING UNDERTAKEN.

1100. MCLELLAN, W., UNIV. OF MANITOBA-
SEDIMENTATION OF THE TRIASSIC HALFWAY SANDSTONE, 1965-67.

1101. MEDIOLI, F., DALHOUSIE UNIV.-
FORAMINIFERAL ECOLOGY ON THE SCOTIAN SHELF AND OTHER SELECTED AREAS, 1966-70.
THE OBJECTIVE IS TO FIND OUT MORE ABOUT THE AREAL DISTRIBUTION OF BENTHIC FORAMINIFERA ON THE SCOTIAN SHELF. IT INCLUDES RESEARCH IN MICRONEONTOLOGY, SEDIMENTOLOGY, GEOCHEMISTRY AND PHYSICAL OCEANOGRAPHY.

PROJECTS INCLUDES A DETAILED STUDY OF A SMALL NEAR SHORE AREA (CAPE SABLE ISLAND), A GENERALIZED STUDY OF A LARGE OFFSHORE ZONE (SW SCOTIAN SHELF), A DETAILED STUDY OF AN INLAND MARINE-WATER BODY (HALIFAX HARBOUR), AND A GENERALIZED STUDY OF PLEISTOCENE STRATIGRAPHIC PHENOMENA ON THE SHELF AND SLOPE ALONG EAST EDGE OF SCOTIAN SHELF.

1102. MIALL, A.D., UNIV. OF OTTAWA-
SEDIMENTOLOGY OF THE PEEL SOUND FORMATION, PRINCE OF WALES ISLAND, NORTHWEST TERRITORIES, 1966-68-
PH.D. THESIS.
INTERFINGERING CONTINENTAL CLASTICS AND MARINE CARBONATES IN THE LOWER DEVONIAN PEEL SOUND FORMATION OF PRINCE OF WALES ISLAND ARE LATERAL FACIES EQUIVALENTS RELATED TO A PRECAMBRIAN BASEMENT WHICH WAS LOCATED IN PEEL SOUND- THE BASEMENT SHED CLASTIC MATERIAL WESTWARD. THE SEDIMENTS DECREASE IN GRAIN SIZE TO THE WEST, AND PASS LATERALLY INTO CARBONATE ROCKS. STATISTICAL STUDIES ON COMPOSITIONAL AND TEXTURAL VARIATIONS IN THE COARSER CLASTIC ROCKS ARE PROVIDING INFORMATION ON THEIR DISPERSAL PATTERNS.

1103. MIDDLETON, G.V., FELSHER, M., NEAL, W.J., PARKASH, B., COSTELLO, R., MCMASTER UNIV.-
SEDIMENTS DEPOSITED FROM TURBIDITY CURRENTS, 1964-69.
STUDIES ARE UNDER WAY BOTH IN THE FIELD (GASPE, P.Q.) AND IN THE LABORATORY ON SIZE GRADING, SEDIMENTARY STRUCTURES (INCLUDING SOLE MARKINGS) AND GRAIN FABRICS IN RECENT, ANCIENT AND ARTIFICIAL TURBIDITES. SEE EXPERIMENTS ON DENSITY AND TURBIDITY CURRENTS, III. DEPOSITION OF SEDIMENT, CAN. JOUR. EARTH SCIENCE, VOL. 4, PP. 475-505, 1967.

1104. MOUNTJOY, E.W., MCGILL UNIV., MACKENZIE, W.S., GEOL. SURV. CANADA-
STRATIGRAPHY OF THE SOUTHERN PART OF THE DEVONIAN ANCIENT WALLREEF COMPLEX, JASPER NATIONAL PARK, ALBERTA, 1964-68.
A STUDY BASED ON MOUNTAIN OUTCROPS IN THE REGION NORTHWEST OF JASPER, OF THE STRATIGRAPHY OF AN UPPER DEVONIAN CARBONATE COMPLEX AND ITS RELATIONSHIP TO SURROUNDING ARGILLACEOUS STRATA. A PETROGRAPHIC ANALYSIS OF THE CAIRN AND SOUTHESK FORMATION CARBONATES IS INCLUDED.

1105. MOUNTJOY, E.W., MCGILL UNIV. AND GEOL. SURV. CANADA-
UPPER DEVONIAN MIETTE AND ANCIENT WALL REEF COMPLEXES, ALBERTA, 1960-.

INVESTIGATION INCLUDES A STUDY OF GROSS STRATIGRAPHIC RELATIONSHIPS, PETROLOGY AND DETAILED EXAMINATION OF REEF MARGINS IN ORDER TO DETERMINE DEPOSITIONAL HISTORY AND ENVIRONMENTS. A STUDY WAS ALSO UNDERTAKEN WITH DR. C.W. STEARN TO INVESTIGATE IN MORE DETAIL THE STRATIGRAPHY, PETROGRAPHY AND PALAEOECOLOGY OF THE SOUTHERN MARGIN OF THE ANCIENT WALL REEF. THE DETAILED STUDY OF ALL DEBRIS BRECCIA BEDS IS UNDERWAY, COMPARISONS WITH SUBSURFACE REEFS ARE ALSO UNDERWAY. SEE FACTORS GOVERNING THE DEVELOPMENT OF THE FRASNIAN, MIETTE AND ANCIENT WALL REEF COMPLEXES (BANKS AND BIOSHONES), ALBERTA, FIRST WORLD SYMPOSIUM ON THE DEVONIAN SYSTEM, VOL. 2.

1106. MOUNTJOY, E.W. AND GRADUATE STUDENTS, MCGILL UNIV.-
RECENT SEDIMENTS WEST COAST OF BARBADOS AND CARRIACOU, 1964-.

INCLUDES THE STUDY OF SEA FLOOR MORPHOLOGY, DISTRIBUTION OF MARINE FLORA AND FAUNA, REEFS AND ASSOCIATED SEDIMENTS. THE ORIGIN AND PROCESSES CONTROLLING DISTRIBUTION OF THE VARIOUS TYPES OF CALCAREOUS AND TERRIGENOUS SEDIMENTS AND THEIR RELATIONSHIP TO ORGANISMS ARE BEING INVESTIGATED AS WELL AS THEIR GEOCHEMISTRY.

1107. MUKHERJI, K.K., UNIV. OF WESTERN ONTARIO-
CARBONATE PETROLOGY OF THE MIDDLE ORDOVICIAN BLACK RIVER GROUP, SOUTHWESTERN ONTARIO, 1963-68, PH.D. THESIS.

THIS STUDY HAS ESTABLISHED THAT THE BLACK RIVER ON THE BASIS OF CARBONATE PETROLOGY CAN BE DIVIDED INTO FOUR DISTINCT UNITS WHICH CAN BE TRACED FROM THE VICINITY OF GEORGIAN BAY TO KINGSTON. IN ADDITION THE TREND OF CLASTS IN CLOSELY SPACED ORIENTED SAMPLES FALL INTO TWO MAIN SECTORS - ONE TOWARD THE NORTHEAST, THE OTHER TOWARD THE SOUTHEAST.

1108. NAUSS, A.W., DIATONIC RESEARCH LTD., CALGARY-
EFFECT OF PRESSURE CHANGES CAUSED BY EROSION AND SEDIMENTATION ON THE NATURE AND DISTRIBUTION OF TECTONIC ACTIVITY.

1109. NEAL, W.J., MCMASTER UNIV.-
PILOT STUDY OF PARALLEL LAMINATION IN TURBIDITES AND PETROLOGY AND PALAEOGEOGRAPHY OF THE BLACKJACK CREEK FORMATION (MISSOURI), 1967-68.

SEDIMENTOLOGY

1110. OLDERSHAW, A.E., UNIV. OF TORONTO-
PALEOECOLOGY AND DIAGENESIS OF CARBONATE ROCKS AND SILICIFICATION AND DIAGENESIS OF BEDDED CHERTS, 1967-69.
CURRENT RESEARCH INVOLVES THE DEVELOPMENT OF TECHNIQUES SUCH AS ELECTRON-MICROSCOPY, ELECTRON PROBE MICROANALYSIS AND STAINING IN THE STUDY OF DIAGENESIS IN LIMESTONES AND CHERTS. SPECIFIC TOPICS INCLUDE THE DIFFERENTIATION AND ORIGINS OF MULTIPLE STAGES OF CEMENTATION, SILICA/CARBONATE RELATIONSHIPS, AND ELECTRON-MICROSCOPY OF EXTREMELY FINE GRAINED CARBONATE AND SILICA SEDIMENTS. SEE THE SOURCE OF FERROAN AND NON-FERROAN CALCITE CEMENTS IN THE HALKIN AND WENLOCK LIMESTONES, GEOL. JOUR., VOL. 5, PT. 2, 1967.

1111. PENDLEBURY, G., MCGILL UNIV.-
PATCH REEF SEDIMENTATION, EASTERN CARRIACOU, WEST INDIES, 1967-68, M.SC. THESIS.
A STUDY TO DETERMINE SEDIMENT CONTRIBUTION BY PATCH REEFS AND WHETHER SEDIMENTATION AFFECTS DISTRIBUTION OF PATCH REEFS.

1112. PETERSON, N.N., USHER, J.L., QUEEN*S UNIV.-
DETAILED PETROGRAPHY AND STRATIGRAPHY OF ORDOVICIAN LIMESTONES, KINGSTON, ONTARIO, 1964-68, PH.D. THESIS (PATTERSON).

1113. PULLEN, M.J., UNIV. OF BRITISH COLUMBIA-
SEDIMENTATION - PITT LAKE, BRITISH COLUMBIA, 1967-69, PH.D. THESIS.

1114. RAHMANI, R., GARRISON, R.E., UNIV. OF BRITISH COLUMBIA-
SEDIMENTOLOGIC STUDIES OF UPPER CRETACEOUS ROCKS IN THE NANZIMO GROUP, BRITISH COLUMBIA, 1967-, M.SC. THESIS (RAHMANI).
STUDIES TO INCLUDE COLLECTION OF STRATIGRAPHIC AND PETROLOGIC DATA, AND MEASUREMENT AND INTERPRETATION OF SEDIMENTARY STRUCTURES, TO FIND OUT DEPOSITIONAL ENVIRONMENTS AND FACIES CHANGES.

1115. RUKAVINA, N.A., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GREAT LAKES NEARSHORE SEDIMENTOLOGY PROGRAM, 1967-.
A PROGRAM OF SEDIMENTOLOGICAL STUDIES IN THE NEARSHORE ZONE (0-10 FATHOMS) OF THE CANADIAN GREAT LAKES. ITS PURPOSE IS TO IDENTIFY AND CLASSIFY THE MATERIALS, PROCESSES, AND MORPHOLOGY OF THE ZONE, AND TO DEVELOP A COMPREHENSIVE MODEL OF THE MECHANICS OF

SEDIMENTOLOGY

NEARSHORE SEDIMENTATION.

1116. RUST, B.R., WILLIAMS, P.F., UNIV. OF OTTAWA- SEDIMENTATION IN A BRAIDED RIVER, YUKON TERRITORY, 1967-69.

SURFACE TOPOGRAPHY AND LITHOFACIES HAVE BEEN STUDIED IN A REACH OF THE GLACIALLY-FED DONJEK RIVER NEAR MILE 1130, ALASKA HIGHWAY, YUKON. LATERAL MIGRATION OF ACTIVE CHANNELS PROVIDES SECTIONS THROUGH OLDER DEPOSITS FROM WHICH A THREE-DIMENSIONAL MODEL CAN BE CONSTRUCTED RELATING LITHOFACIES AND INTERNAL STRUCTURE TO SURFACE TOPOGRAPHY. VARIATION IN CURRENT VECTORS WAS OBSERVED FOR ALL STRUCTURES FROM THE SMALLEST BEDFORMS TO THE TREND OF THE RIVER ITSELF. FUTURE WORK WILL PROVIDE COMPARISONS BETWEEN THE FEATURES ALREADY OBSERVED, AND THOSE OF OTHER REACHES OF THE RIVER.

1117. RUST, B.R., UNIV. OF OTTAWA, YOLE, R.W., CARLETON UNIV.- THE SEDIMENTARY HISTORY OF THE ST. CLAIR DELTA, ONTARIO, 1967-.

A RAFT-MOUNTED CORING APPARATUS, THE CONSTRUCTION OF WHICH IS NOW COMPLETE, IS DESIGNED TO CORE THROUGH THE DELTA SEDIMENTS, BOTH FROM THE LAKE, AND DRY LAND. THE CORES WILL BE USED TO STUDY CHANGES IN FACIES DISTRIBUTION DURING THE DEVELOPMENT OF THE DELTA AND PROVENANCE OF DELTA SEDIMENTS. MODERN PATTERNS OF DISPERSAL AND SEDIMENTATION WILL BE STUDIED ON THE DELTA SURFACE.

1118. SCHENK, P.E., HARRIS, I., DALHOUSIE UNIV.- SEDIMENTOLOGY AND STRATIGRAPHY OF THE MEGUMA GROUP (EARLY PALAEOZOIC) OF NOVA SCOTIA, 1963-- PH.D. THESIS (HARRIS).

THE FLYSCH-LIKE MEGUMA GROUP IS BEING STUDIED TO DETERMINE PROVENANCE, PALEOCURRENT PATTERN, DEPOSITIONAL ENVIRONMENT, AGE, AND BOTH LATERAL AND VERTICAL VARIATION IN MINERALOGY AND SEDIMENTARY STRUCTURES.

1119. SCHENK, P.E., MURRAY, D., DALHOUSIE UNIV.- CARBONATE PETROLOGY, PALAEOECOLOGY, AND STRATIGRAPHY OF SCOTIA, 1965-- PH.D. THESIS (MURRAY).

THE OBJECTIVE IS TO STUDY LATERAL AND VERTICAL VARIATIONS IN WINDSORIAN PETROGRAPHY, MINERALOGY, TRACE ELEMENTS, INSOLUBLE RESIDUE, HEAVY MINERALS AND FAUNA-FLORA TO UNRAVEL CHRONOSTRATIGRAPHY AND SO TO RECONSTRUCT PALAEOGEOGRAPHY. SEE THE SIGNIFICANCE OF ALGAL STROMATOLITES TO PALAEOENVIRONMENTAL AND

CHRONOSTRATIGRAPHIC INTERPRETATIONS OF THE WINDSORIAN STAGE (MISSISSIPPIAN), MARITIME PROVINCES= PROC. GEOL. ASSOC. CANADA, SPEC. PAPER 4 (IN PRESS).

1120. SCHWARCZ, H.P., PRASAD, N., MCMASTER UNIV.-
OXYGEN AND CARBON ISOTOPE ANALYSES OF DIAGENETIC AND SYNGENETIC DOLOMITE, 1964-67, M.SC. THESIS (PRASAD).

1121. SLY, P.G., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
LACUSTRINE SEDIMENTOLOGICAL STUDIES OF THE GREAT LAKES, 1967-.
INVESTIGATION OF TECHNIQUES AND EQUIPMENT ASSOCIATED WITH SAMPLING, RAPID METHODS OF GRAIN SIZE ANALYSIS, UNDERWATER T.V. AND PHOTOGRAPHY, AND VERTICAL AND OBLIQUE ECHOGRAM INTERPRETATION.

1122. SRIVASTAVA, P.N., MCGILL UNIV.-
ENVIRONMENTAL STUDIES IN BRECCIAS OF THE ANCIENT WALL REEF COMPLEX, ALBERTA, 1967-69, M.SC. THESIS.

1123. STEWART, J., DALHOUSIE UNIV.-
SEDIMENT DISTRIBUTION ON THE MID-ATLANTIC RIDGE (45 DEGREES NORTH), 1966-68- M.SC. THESIS.
A DETAILED STUDY OF SIZE FRACTIONS WAS CARRIED OUT ON A NUMBER OF LONG CORES FROM THE MID-ATLANTIC RIDGE. AN ATTEMPT WILL BE MADE TO CORRELATE THE STRATIGRAPHIC SECTIONS OF SEVERAL BASINS OF THE MID-ATLANTIC RIDGE AREA.

1124. THOMAS, R.L., INLAND WATERS BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
THE INORGANIC GEOCHEMISTRY OF GREAT LAKES SEDIMENTS, 1967-.
A STUDY OF THE VERTICAL AND SPATIAL DISTRIBUTION OF MAJOR, MINOR, AND TRACE ELEMENTS IN THE BOTTOM SEDIMENTS OF LAKE ONTARIO WITH PARTICULAR REFERENCE TO THE GEOCHEMISTRY OF IRON AND SULPHUR.

1125. TIPHANE, M., UNIV. OF MONTREAL-
STUDY OF THE SANDS AROUND THE MAGDELEINE ISLANDS, QUEBEC, 1967-68.
PART OF A GENERAL RESEARCH PROGRAM ON THE SEDIMENTS OF THE GULF OF ST. LAWRENCE, STARTED IN 1960 IN THE CHALEUR BAY AREA.

SEDIMENTOLOGY

1126. TOVELL, W.M., ROYAL ONTARIO MUSEUM-
TOPOGRAPHY AND BOTTOM DEPOSITS BETWEEN TOBERMORY AND FITZWILLIAM ISLAND, GEORGIAN BAY, ONTARIO, 1965-70.

1127. TRETTIN, H.P., GEOL. SURV. CANADA-
STRATIGRAPHY, STRUCTURE, AND CARBONATE PETROGRAPHY OF THE MARBLE CANYON FORMATION (PERMIAN) IN THE MARBLE RANGE, CARIBOO DISTRICT, BRITISH COLUMBIA, 1964-68. SEE GEOL. SURV. CAN., PAPER 66-1, PP. 98-101, 1966.

1128. VAN DE POLL, H.W., NEW BRUNSWICK DEPT. OF NATURAL RESOURCES-
SEDIMENTATION AND PALAEOCURRENTS IN THE CARBONIFEROUS BASINS OF NEW BRUNSWICK, 1965-.
SEDIMENTATION PALAEOCURRENTS, PROVENANCE, SEDIMENT MATURITY AND MORPHOLOGY OF PENNSYLVANIAN SANDSTONES ARE USED AS A MAPPING TECHNIQUE IN THE STUDY OF THE CONFIGURATION, TECTONICS, BOTTOM TOPOGRAPHY AND PALAEOGEOGRAPHY OF THE CARBONIFEROUS BASINS OF NEW BRUNSWICK. SEE SEDIMENTATION AND PALAEOCURRENTS DURING PENNSYLVANIAN TIME IN THE MONCTON BASIN, NEW BRUNSWICK, REPORT OF INVESTIGATION NO. 1, DEPARTMENT OF NATURAL RESOURCES, NEW BRUNSWICK.

1129. VASQUEZ, J.C., MCCARTNEY, W.D., QUEEN*S UNIV.-
GEOTHERMOMETRY OF PINE POINT CALCITES BY FLUID INCLUSION METHOD, 1966-67, M.SC. THESIS (VASQUEZ).
THE WINDSORIAN STAGE (MISSISSIPPIAN) OF NOVA SIX TYPES OF CALCITE ARE RECOGNIZED. THE FIVE TYPES WHICH CONTAIN SUITABLE PRIMARY LIQUID-GAS INCLUSIONS SHOW SYSTEMATIC TEMPERATURES OF HOMOGENIZATION RANGING FROM 145-165 DEGREES C FOR THE OLDEST TO 45-50 DEGREES C FOR THE YOUNGEST CALCITE. SEE BARITE-FLUORITE STUDY, GEOL. SURV. CAN., PAPER 64-2, PP. 75-78, 1964.

1130. WALKER, R.G., MCMASTER UNIV.-
FACIES CHANGES DURING THE FILLING OF DEEP SEDIMENTARY BASINS, 1964-.
SUBJECT IS BEING INVESTIGATED FROM A GENERAL POINT OF VIEW, DEVELOPING QUANTITATIVE TECHNIQUES OF FACIES ANALYSIS (SEE REFERENCE). CURRENT AREAS UNDER INVESTIGATION ARE NORTH DEVON, ENGLAND, AND CENTRAL PENNSYLVANIA. IT IS HOPED TO START WORK IN GASPE, QUEBEC, IN 1968. SEE TURBIDITE SEDIMENTARY STRUCTURES AND THEIR RELATIONSHIP TO PROXIMAL AND DISTAL DEPOSITIONAL ENVIRONMENTS, JOUR. SEDIMENT. PETROL., VOL. 37, PP. 25-43, 1967.

SEDIMENTOLOGY

1131. WARDLAW, N.C., BRAUN, W.K., UNIV OF SASKATCHEWAN-
DEVONIAN SEDIMENTARY ROCKS OF THE LOWER MACKENZIE
1967-69.
SEDIMENTOLOGICAL STUDIES OF REEF-COMPLEX SEDIMENTS IN THE MIDDLE DEVONIAN (KEE SCARP) OF THE NORMAN WELLS AREA. THIS STUDY OF SEDIMENTARY SEQUENCES AND RELATIONSHIPS IS BEING ACCOMPANIED BY DETAILED PALAEONTOLOGICAL WORK. IT IS PROPOSED TO DETERMINE THE RESERVOIR PROPERTIES OF THE MAJOR LITHOLOGIES BY CAPILLARY INJECTION TECHNIQUES AND TO CORRELATE RESERVOIR PROPERTIES WITH LITHOLOGY, FACIES AND ENVIRONMENT. SEE STRATIGRAPHY AND MICROFAUNA OF MIDDLE AND UPPER DEVONIAN FORMATIONS, NORMAN WELLS AREA, N.W.T.- N. JB. GEOL. PALAEONT., VOL. 125, PP. 247-264, 1966.

1132. WARDLAW, N.C., STATHAM, K.F., UNIV. OF SASKATCHEWAN-
MIDDLE DEVONIAN CARBONATE DEPOSITS OF THE NORTHWEST TERRITORIES, 1967-69- M.SC. THESIS (STATHAM).

1133. WESTERMANN, G.E.G., MCMASTER UNIV.-
THE RELATIVE BUOYANCY OF IMMATURE AND ADULT AMMONITE SHELLS, 1967-69.

1134. WILLIAMS, G.D., UNIV. OF ALBERTA-
GEOCHEMISTRY OF MUDS AND SHALES, 1963-.
SEE CHEMICAL COMPOSITION OF SHALES OF THE MANNVILLE GROUP (LOWER CRETACEOUS) OF CENTRAL ALBERTA, CANADA, BULL. AMER. ASSOC. PETROLEUM GEOLOGISTS, VOL. 49, PP. 81-87, 1965.
RECENT FLUVIAL AND RELATED SEDIMENTS FROM WESTERN CANADA, 1962-.
SEE ORIGIN OF SHALE-PEBBLE CONGLOMERATE, BULL. AMER. ASSOC. PETROLEUM GEOLOGISTS, VOL. 50, PP. 573-577, 1966.

1135. WINDER, C.G., UNIV. OF WESTERN ONTARIO-
THE STRATIGRAPHY OF MIDDLE ORDOVICIAN SOUTHWESTERN ONTARIO, 1951-.
INCLUDES BOTH SEDIMENTARY PETROLOGY, MACROPALAEONTOLOGY AND MICROPALAEONTOLOGY. SEE FABRIC OF A MIDDLE ORDOVICIAN LIMESTONE AT COLBORNE, ONTARIO, CAN. JOUR. EARTH SCIENCES, VOL. 4, PP. 529-540, 1967.

1136. WORTH, J.K., ACADIA UNIV.-
EARLY MISSISSIPPIAN STRATIGRAPHY AND SEDIMENTATION, HANTS COUNTY, NOVA SCOTIA, 1967-68, M.SC. THESIS.

SEDIMENTOLOGY

1137. YOLE, R.W., CARLETON UNIV.-
STRATIGRAPHY, PALAEONTOLOGY AND SEDIMENTOLOGY OF THE SICKER GROUP, VANCOUVER ISLAND , BRITISH COLUMBIA, 1960-67.
SEE AN EARLY PERMIAN FAUNA FROM VANCOUVER ISLAND, BRITISH COLUMBIA- ALTA. SOC. PETROL. GEOL., BULL. CANADIAN PETROL. GEOL., VOL. 11, PP. 138-149, 1963.

PETROLOGY OF ORDOVICIAN CARBONATE ROCKS, OTTAWA VALLEY, 1965-69.

1138. YORATH, C.J., GEOL. SURV. CANADA-
MESOZOIC STRATIGRAPHY AND SEDIMENTATION OF THE ARCTIC COASTAL PLAINS, NORTHWEST TERRITORIES, 1967-68.
DETAILED STRATIGRAPHIC STUDIES OF THE CRETACEOUS ROCKS OF THE ARCTIC COASTAL PLAINS IN CONJUNCTION WITH PALEOCURRENT ANALYSIS AND SHALE PETROLOGY.

1139. YOUNG, F.G., MCGILL UNIV.-
STRATIGRAPHY AND SEDIMENTATION OF LOWER CAMBRIAN CARIBOO GROUP, CARIBOO DISTRICT, BRITISH COLUMBIA, 1967-69, PH.D. THESIS.
BESIDES PROVIDING AN ANALYSIS OF THE CARIBOO GROUP THIS STUDY WILL ATTEMPT TO CORRELATE THE CARIBOO GROUP WITH ROCKS OF THE COG GROUP ACROSS THE ROCKY MOUNTAIN TRENCH TO THE EAST.

1140. YOUNG, G.M., UNIV. OF WESTERN ONTARIO-
REGIONAL INVESTIGATION OF THE GOWGANDA FORMATION (EARLY PROTEROZOIC) IN ONTARIO, 1965-69.
SEE SEDIMENTARY STRUCTURES IN HURONIAN ROCKS OF ONTARIO, PALAEOGEOGRAPHY, PALAEOECOLOGY, PALAEOCLIMATOLOGY, VOL. 4, PP. 125-153 (IN PRESS).

1141. YOUNG, H.R., GREGGS, R.G., QUEEN*S UNIV.-
CARBONATE PETROGRAPHY OF VIRDEN MEMBER, LODGEPOLE FORMATION, MANITOBA, 1965-68, PH.D. THESIS (YOUNG).

STRATIGRAPHY AND PALAEONTOLOGY

Precambrian

1142. BELL, R.T., GEOL. SURV. CANADA-
ENNADAI-RANKIN AREA, NORTHWEST TERRITORIES- STRATIGRAPHIC AND STRUCTURAL STUDY OF THE HURWITZ GROUP, 1967-.

1143. CHANDLER, F.W., UNIV. OF WESTERN ONTARIO-
STRATIGRAPHY, STRUCTURE AND SEDIMENTOLOGY OF HURONIAN ROCKS IN HARROW AND MCKINNON TOWNSHIPS AND SURROUNDING AREAS OF ONTARIO, 1965-68.

1144. CHRISTIE, R.L., GEOL. SURV. CANADA-
STRATIGRAPHY AND AGE OF PRECAMBRIAN SEDIMENTARY ROCKS AND CONTAINED SILLS AND DYKES, EAST COAST OF CANADIAN ARCTIC ISLANDS AND NORTHWEST AND NORTH GREENLAND, 1967-70.
IN COOPERATION WITH THE GREENLAND GEOLOGICAL SURVEY.

1145. CHRISTIE, R.L., FRISCH, T., GEOL. SURV. CANADA-
STRATIGRAPHY AND STRUCTURE OF PARTS OF NORTHEASTERN ELLESMERE ISLAND, 1963-69, PH.D. THESIS (FRISCH).
INCLUDES COOPERATIVE FIELD WORK AND LIAISON WITH THE GREENLAND GEOLOGICAL SURVEY. SEE OPERATION GRANT LAND, 1966, GEOL. SURV. CAN., PAPER 67-1, P. 2, 1967.

1146. CHURCH, W.R., YOUNG, G.M., UNIV. OF WESTERN ONTARIO-
STRATIGRAPHY, STRUCTURE AND SEDIMENTOLOGY OF THE HURONIAN NORTH OF MANITOULIN ISLAND, ONTARIO, 1963-.
SEE HURONIAN STRATIGRAPHY OF THE MCGREGOR BAY AREA, ONTARIO, RELEVANCE TO THE PALEOGEOGRAPHY OF THE LAKE SUPERIOR REGION, JOUR. EARTH SCI., VOL. 3, PP. 203-210, 1966.

1147. DONALDSON, J.A., GEOL. SURV. CANADA-
MARTIN FORMATION, BEAVERLODGE AREA, SASKATCHEWAN, 1967-.
THE COMPARISON OF MARTIN FORMATION WITH THE SOUTH CHANNEL AND KAZAN FORMATIONS OF THE DUBAWNT GROUP.

1148. JENNINGS, D.S., SHAW, D.M., MCMASTER UNIV.-
STRATIGRAPHY AND METAMORPHIC HISTORY OF THE HERMON FORMATION, SOUTHEASTERN ONTARIO, 1964-69, PH.D. THESIS (JENNINGS).
A STUDY OF MINERAL EQUILIBRIA, METAMORPHIC HISTORY

AND ORIGINAL ROCK COMPOSITION IN A WELL-DEFINED BELT OF GRENVILLE METASEDIMENTARY AND METAVOLCANIC ROCKS. SEE GEOLOGY OF CHANDOS TOWNSHIP, ONT. DEPT. MINES, GEOL. REPT. NO. 11, 1967.

1149. MILLIGAN, G.C., NOVA SCOTIA DEPT. OF MINES (PART TIME), DALHOUSIE UNIV.-
STRATIGRAPHIC STUDY OF THE PRECAMBRIAN GEORGE RIVER GROUP, CAPE BRETON, 1963-67.
IN ADDITION TO FIELD STUDIES, A LABORATORY STUDY OF THE METAMORPHIC HISTORY OF THESE ROCKS IS BEING UNDERTAKEN.

Cambrian to Silurian

1150. AITKEN, J.D., GEOL. SURV. CANADA-
PRE-DEVONIAN STRATIGRAPHY, SOUTHERN ROCKY MOUNTAINS, ALBERTA AND BRITISH COLUMBIA, 1961-.
FIELDWORK ON THIS PROJECT IS COMPLETE. PAPERS ON UPPER CAMBRIAN STRATIGRAPHIC NOMENCLATURE, THE SURFACE/SUBSURFACE CORRELATION, AND ALGAL CARBONATES ARE IN PRESS, A MANUSCRIPT ON THE MIDDLE CAMBRIAN STRATIGRAPHY IS IN PREPARATION. SEE LOWER ORDOVICIAN SURVEY PEAK AND OUTRAM FORMATION, SOUTHERN ROCKY MOUNTAINS OF ALBERTA, BULL. CAN. PETROL. GEOL., VOL. 15, PP. 150-207.

1151. BARNES, C.R., UNIV. OF WATERLOO-
CONODONT BIOSTRATIGRAPHY OF THE WILDERNESS STAGE (ORDOVICIAN), 1965-70.
SOME 60,000 CONODONTS FROM 700 SAMPLES FROM 92 LOCALITIES IN NEW YORK, VERMONT, ONTARIO, AND QUEBEC ARE BEING STUDIED. A CONODONT ZONATION OF THE BLACK RIVER GROUP AND LOWEST TRENTON GROUP IS BEING ATTEMPTED. SEE STRATIGRAPHY AND SEDIMENTARY ENVIRONMENTS OF SOME WILDERNESS (ORDOVICIAN) LIMESTONES, OTTAWA VALLEY, ONTARIO, CAN. JOUR. EARTH SCI., VOL. 4, PP. 209-224, 1967.

1152. BOLTON, T.E., GEOL. SURV. CANADA-
ORDOVICIAN AND SILURIAN STRATIGRAPHY OF ANTICOSTI ISLAND, QUEBEC, 1957-.
INVESTIGATION OF FAUNAS BOTH FROM SURFACE EXPOSURES AND SUBSURFACE CORE. SEE GEOL. SURV. CAN., PAPER 65-1, 1965, PP. 113-114.

1153. CUMMING, L.M., GEOL. SURV. CANADA-
ORDOVICIAN BIOSTRATIGRAPHY OF THE HUDSON BAY LOWLANDS,

ONTARIO AND QUEBEC, 1967-68.
SEE OPERATION WINISK, GEOL. SURV. CAN., PAPER 68-1, 1968.

1154. DAVIES, J.L., NEW BRUNWICK DEPT. OF NATURAL RESOURCES-
GEOLOGY AND GEOCHEMISTRY OF THE VOLCANIC ROCKS OF THE TETAGOUCHE GROUP, NEW BRUNSWICK, 1964-70

1155. GLOBENSKY, Y., QUEBEC DEPT. OF NATURAL RESOURCES-
REVISION OF THE PORTNEUF MAP-AREA AND A MICROPALAEONTOLOGICAL INVESTIGATION OF THE TRENTON OF THE AREA, 1967-68.

1156. GREGGS, R.G., QUEEN S UNIV.-
UPPER CAMBRIAN REGIONAL BIOSTRATIGRAPHY, 1966-.

1157. HUBERT, C., QUEBEC DEPT. OF NATURAL RESOURCES-
DETAILED STRATIGRAPHY OF CAMBRO-ORDOVICIAN ROCKS OF ORLEANS AREA (WESTERN PART), QUEBEC, 1967-68.

1158. HUBERT, C., UNIV. OF MONTREAL-
STRATIGRAPHIE DES ROCHES CAMBRIENNES ET ORDOVICIENNES DES REGIONS DE ROSAIRE-ORLEANS, PROVINCE DE QUEBEC, 1965-68.
A ETABLIR LA LITHO-STRUCTURE DANS CES REGIONS ET A Y ETUDIER QUELQUES ASPECTS PARTICULIERS TELS QUE LES PROBLEMES SEDIMENTOLOGIQUES ASSOCIES A CERTAINS TYPES DE ROCHES. LES ROCHES CAMBRIENNES ET ORDOVICIENNES ONT UNE GRANDE AFFINITE AU TYPE **FLYSCH** ET **WILD FLYSCH** EUROPEEN. VOIR TECTONICS OF PART OF THE SILLERY IN THE CHAUDIERE-MATAPEDIA SEGMENT OF THE QUEBEC APPALACHIANS- ROY. SOC. OF CAN., SPEC. PUB., 1967 (SOUS PRESSE).

1159. KERR, J.WM., GEOL. SURV. CANADA-
ORDOVICIAN STRATIGRAPHY IN ARCTIC CANADA, 1961-.
SEE NEW NOMENCLATURE FOR ORDOVICIAN ROCK UNITS OF THE EASTERN AND SOUTHERN QUEEN ELIZABETH ISLAND, ARCTIC CANADA, BULL. CAN. PETROL. GEOL., VOL. 15, NO. 1, PP. 91-113.

1160. LAJOIE, J., LEONARD, M.A., HEROUX, Y., MATHEY, B., UNIV. DE MONTREAL-
PALEOGEOGRAPHIE DU PALEOZOIQUE INFERIEUR DANS LES APPALACHES DU QUEBEC, 1967-, THESE DE MAITRISSE (LEONARD, HEROUX, MATHEY).

L ETUDE AMORCEE EN 1966 EST CONCENTREE SUR LE FLYSCH D AGE CAMBRO-ORDOVICIEN ENTRE TROIS-PISTOLES ET RIMOUSKI, P.Q.

1161. LEONARD, M.A., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME)-
ST. MODESTE AREA, QUEBEC, 1967-68, PH.D. THESIS.
DETAILED STRATIGRAPHY OF AN AREA OF CAMBRO-ORDOVICIAN AND SILURIAN ROCKS IN THE VICINITY OF TROIS-PISTOLES.

1162. MACQUEEN, R.W., GEOL. SURV. CANADA-
LOWER PALAEOZOIC BEDROCK GEOLOGICAL STUDIES, LOWER MACKENZIE RIVER AREA, OPERATION NORMAN, 1967-70.
OPERATION NORMAN IS A HELICOPTER-SUPPORTED, RECONNAISSANCE BEDROCK AND SURFICIAL GEOLOGICAL STUDY OF THE LOWER MACKENZIE RIVER AREA (125,000 SQUARE MILES). DR. MACQUEEN IS RESPONSIBLE FOR STRATIGRAPHIC STUDIES (INCLUDING SEDIMENTOLOGY AND CORRELATION) OF ROCKS OF ORDOVICIAN AND SILURIAN AND FOR SOME OF THE MAPPING OF THESE ROCKS.

1163. MCALLISTER, A.L., DE CARLE, A.L., UNIV. OF NEW BRUNSWICK-
A STUDY OF ROCKS OF THE MASCARENE GROUP, CHARLOTTE COUNTY, NEW BRUNSWICK, 1964-69, M.SC. THESIS (DE CARLE).

1164. MOUNTJOY, E.W., MCGILL UNIV. AND GEOL. SURV. CANADA-
CAMBRIAN STRATIGRAPHY AND PETROLOGY OF NORTHERN JASPER PARK, ALBERTA, 1960-.
REGIONAL STUDY OF CAMBRIAN STRATIGRAPHY TO DETERMINE DISTRIBUTION THICKNESS AND PETROGRAPHY OF VARIOUS UNITS. A STUDY OF ORDOVICIAN STRATA AND THE PRE-DEVONIAN UNCONFORMITY IS ALSO INCLUDED.

1165. NORFORD, B.S., GEOL. SURV. CANADA-
MIDDLE ORDOVICIAN STRATIGRAPHIC AND FAUNAL STUDY, SOUTHERN ALBERTA AND SOUTHEAST BRITISH COLUMBIA, 1962-69.
STUDY OF THE STRATIGRAPHY OF THE SKOKI AND OWEN CREEK FORMATIONS AND DESCRIPTION OF THEIR FAUNAS.
SILURIAN STRATIGRAPHY OF THE HUDSON BAY AND JAMES BAY LOWLANDS, 1967-69.

1166. PETERSON, N.N., USHER, J.L., QUEEN*S UNIV.-
DETAILED PETROGRAPHY AND STRATIGRAPHY OF ORDOVICIAN LIMESTONES, KINGSTON, ONTARIO, 1964-68, PH.D.

STRATIGRAPHY AND PALAEONTOLOGY

THESIS (PATTERSON).

1167. SCHENK, P.E., HARRIS, I., DALHOUSIE UNIV.-
SEDIMENTOLOGY AND STRATIGRAPHY OF THE MEGUMA GROUP (EARLY PALAEOZOIC) OF NOVA SCOTIA, 1963-- PH.D. THESIS (HARRIS).
THE FLYSCH-LIKE MEGUMA GROUP IS BEING STUDIED TO DETERMINE PROVENANCE, PALEOCURRENT PATTERN, DEPOSITIONAL ENVIRONMENT, AGE, AND BOTH LATERAL AND VERTICAL VARIATION IN MINERALOGY AND SEDIMENTARY STRUCTURES.

1168. SCHENK, P.E., MURRAY, D., DALHOUSIE UNIV.-
CARBONATE PETROLOGY, PALAEOECOLOGY, AND STRATIGRAPHY OF THE WINDSORIAN STAGE (MISSISSIPPIAN) OF NOVA SCOTIA, 1965-- PH.D. THESIS (MURRAY).
THE OBJECTIVE IS TO STUDY LATERAL AND VERTICAL VARIATIONS IN WINDSORIAN PETROGRAPHY, MINERALOGY, TRACE ELEMENTS, INSOLUBLE RESIDUE, HEAVY MINERALS AND FAUNA-FLORA TO UNRAVEL CHRONOSTRATIGRAPHY AND SO TO RECONSTRUCT PALAEOGEOGRAPHY. SEE THE SIGNIFICANCE OF ALGAL STROMATOLITES TO PALAEOENVIRONMENTAL AND CHRONOSTRATIGRAPHIC INTERPRETATIONS OF THE WINDSORIAN STAGE (MISSISSIPPIAN), MARITIME PROVINCES- PROC. GEOL. ASSOC. CANADA, SPEC. PAPER 4 (IN PRESS).

1169. SHARP, D.A., BEARDS, R., SANDFORD, B.V., BERRY, C., HADLEY, C., HILL, J.V., WINDER, C.G., ONTARIO DEPT. ENERGY AND RESOURCES MANAGEMENT, GEOL. SURV. CANADA, UNIV. OF WESTERN ONTARIO-
STRATIGRAPHIC NOMENCLATURE OF THE PALAEOZOIC SEDIMENTS IN SOUTHWESTERN ONTARIO, 1965-.
A GRID OF 33 WELLS HAS BEEN ESTABLISHED TO DEFINE BY LITHOLOGIC AND MECHANICAL LOGS THE FORMATIONS IN THE PALAEOZOIC SUBSURFACE. ALL PAST AND FUTURE DRILLING CAN BE RELATED TO THIS STANDARD. WORK WILL CONTINUE IN THE OTTAWA VALLEY, THE NATURAL OUTCROPS AND QUARRIES OF THE REGION WILL ALSO BE RELATED TO THE SUBSURFACE. SEE GUIDE TO THE SUBSURFACE PALAEOZOIC STRATIGRAPHY OF SOUTHERN ONTARIO, ONTARIO DEPT. OF ENERGY AND RESOURCES MANAGEMENT, PAPER 67-2, 1967.

1170. SINCLAIR, G.W., GEOL. SURV. CANADA-
ORDOVICIAN STRATIGRAPHY AND PALAEONTOLOGY OF EASTERN CANADA - CONTINUING STUDIES, 1954-.

1171. UYENO, T.T., GEOL. SURV. CANADA-
CONODONT BIOSTRATIGRAPHY OF THE LEVIS FORMATION (LOWER

ORDOVICIAN) OF THE TYPE AREA, QUEBEC, 1967-68. THIS PROJECT IS BEING CONDUCTED JOINTLY WITH DR. C.R. BARNES, UNIV. OF WATERLOO.

1172. WHITTINGTON, H.B., CAMBRIDGE UNIV., FRITZ, W.H., AITKEN, J.D., GEOL. SURV. CANADA-
PALAEONTOLOGY, STRATIGRAPHY, AND PALAEOECOLOGY OF THE BURGESS SHALE, 1966-70.

1173. WINDER, C.G., UNIV. OF WESTERN ONTARIO-
THE STRATIGRAPHY OF MIDDLE ORDOVICIAN SOUTHWESTERN ONTARIO, 1951-.
INCLUDES BOTH SEDIMENTARY PETROLOGY, MACRO-PALAEONTOLOGY AND MICROPALAEONTOLOGY. SEE FABRIC OF A MIDDLE ORDOVICIAN LIMESTONE AT COLBORNE, ONTARIO, CAN. JOUR. EARTH SCIENCES, VOL. 4, PP. 529-540, 1967.

1174. YOUNG, F.G., MCGILL UNIV.-
STRATIGRAPHY AND SEDIMENTATION OF LOWER CAMBRIAN CARIBOO GROUP, CARIBOO DISTRICT, BRITISH COLUMBIA, 1967-69, PH.D. THESIS.
BESIDES PROVIDING AN ANALYSIS OF THE CARIBOO GROUP THIS STUDY WILL ATTEMPT TO CORRELATE THE CARIBOO GROUP WITH ROCKS OF THE COG GROUP ACROSS THE ROCKY MOUNTAIN TRENCH TO THE EAST.

Devonian to Permian

1175. BAMBER, E.W., GEOL. SURV. CANADA-
STRATIGRAPHY AND PALAEONTOLOGY OF THE CARBONIFEROUS AND PERMIAN OF NORTHERN YUKON, 1963-68.

1176. BAMBER, E.W., MACQUEEN, R.W., GEOL. SURV. CANADA-
PALAEONTOLOGY AND BIOSTRATIGRAPHY OF MISSISSIPPIAN ROCKS, ROCKY MOUNTAINS, ALBERTA AND SOUTHERN COLUMBIA, 1966-.
SEE STRATIGRAPHY OF BANFF FORMATION AND LOWER RUNDLE GROUP (MISSISSIPPIAN), SOUTHWESTERN ALBERTA, GEOL. SURV. CAN., PAPER 67-47 (IN PRESS).

1177. BAMBER, E.W., TAYLOR, G.C., PROCTER, R.M., GEOL. SURV. CANADA-
STRATIGRAPHY AND PALAEONTOLOGY OF CARBONIFEROUS AND PERMIAN ROCKS IN THE ROCKY MOUNTAINS AND LIARD PLATEAU, NORTHERN BRITISH COLUMBIA, 1965-68.
SEE STRATIGRAPHY OF CARBONIFEROUS AND PERMIAN ROCKS, OPERATION LIARD, GEOL. SURV. CAN., PAPER 66-1, P. 50.

1178. BELYEA, H.R. (MISS), GEOL. SURV. CANADA-
UPPER DEVONIAN OF ALBERTA, NORTHEASTERN BRITISH COLUMBIA AND SOUTHERN DISTRICT OF MACKENZIE, 1950-.
DEVONIAN OF SOUTHERN DISTRICT OF MACKENZIE, 1966-68. INCLUDES STUDY OF RELATIONSHIP BETWEEN LITHOFACIES AND TECTONICS, TATHLINA ARCH.

1179. BELYEA, H.R. (MISS), NORRIS, A.W., GEOL. SURV. CANADA-
LATE MIDDLE AND EARLY UPPER DEVONIAN FORMATIONS OF MANITOBA, CENTRAL SASKATCHEWAN TO GREAT SLAVE LAKE, 1965-.

1180. BRAUN, W.K., NAUTIYAL, A.C., UNIV. OF SASKATCHEWAN-
MIDDLE AND UPPER DEVONIAN BIOSTRATIGRAPHY AND MICROFAUNAS OF WESTERN CANADA, 1964-70, PH.D. THESIS (NAUTIYAL).

1181. CROWELL, G.D., ACADIA UNIV.-
WINDSOR GROUP SEDIMENTS ALONG MEANDER RIVER, HANTS COUNTY, NOVA SCOTIA, 1966-68, M.SC. THESIS.

1182. DANNER, W.R., NESTELL, M., SADA, K., UNIV. OF BRITISH COLUMBIA-
STRATIGRAPHY AND PALAEONTOLOGY OF CACHE CREEK GROUP ROCKS OF THE TYPE AREA AND NEARBY AREAS OF BRITISH COLUMBIA AND WASHINGTON, 1959-.
AREA UNDER INVESTIGATION INCLUDES NORTHWESTERN WASHINGTON STATE, VANCOUVER ISLAND, SOUTHWESTERN MAINLAND AND SOUTHERN INTERIOR OF BRITISH COLUMBIA. SEE PERMIAN CALCAREOUS ALGAE FROM NORTHWESTERN WASHINGTON AND SOUTHWESTERN BRITISH COLUMBIA, JOUR. OF PALAEONT., VOL. 40, NO. 2, 1966.

1183. DINELEY, D.L., WILLIAMS, B.P., UNIV. OF OTTAWA-
SEDIMENTOLOGY AND PALAEOECOLOGY OF CONTINENTAL DEVONIAN ROCKS OF THE CHALEUR BAY AREA, QUEBEC, 1965-68.
STRATIGRAPHICAL AND SEDIMENTOLOGICAL FEATURES OF PRE-ESCUMINAC ROCKS ARE DESCRIBED. ESCUMINAC SEDIMENTOLOGY AND PALAEOECOLOGY INDICATE A COMPLEX LACUSTRINE ENVIRONMENT WITH A LARGE SPECIALIZED VERTEBRATE FAUNA. TWO PAPERS ARE IN PRESS. SEE STUDIES ON THE DEVONIAN STRATA OF CHALEUR BAY, QUEBEC-MARITIME SEDIMENTS, VOL. 2, PP. 7-10, 1966.

1184. HOLTER, M.E. SASKATCHEWAN DEPT. OF MINERAL RESOURCES-
THE MIDDLE DEVONIAN PRAIRIE EVAPORITE FORMATION OF

SASKATCHEWAN, 1965.
A STUDY OF THE STRATIGRAPHY OF THE PRAIRIE EVAPORITE FORMATION WITH PARTICULAR REFERENCE TO THE POTASH-RICH ZONES IN THE UPPER PORTION, BASED LARGELY ON EXAMINATION OF DRILL CORE, CUTTINGS, AND WELL LOGS.

1185. KERR, J.WM., GEOL. SURV. CANADA-
DEVONIAN STRATIGRAPHY IN THE CANADIAN ARCTIC ARCHIPELAGO, NORTHWEST TERRITORIES, 1961-.
SEE DEVONIAN OF FRANKLINIAN MIOGEOSYNCLINE AND ADJACENT CENTRAL STABLE REGION, ARCTIC CANADA, INT. SYMP. ON THE DEVONIAN SYSTEM, VOL. 1, PP. 677-692, ALTA. SOC. PETROL. GEOL., 1967.

1186. KING, A.F., MEMORIAL UNIV. OF NEWFOUNDLAND-
STRATIGRAPHY AND STRUCTURE OF THE UPPER CARBONIFEROUS BUDE FORMATION, NORTH CORNWALL, ENGLAND, 1963-.
INCLUDES ALL THE UPPER CARBONIFEROUS SANDSTONES AND SHALES EXPOSED ALONG THE BUDE COAST BETWEEN WANSON MOUTH AND SANDY MOUTH (ABOUT 8 KM). SEE STRUCTURE AND STRATIGRAPHY OF THE UPPER CARBONIFEROUS BUDE SANDSTONES, NORTH CORNWALL, PROC. USSHER SOCIETY, VOL. 1, PT. 5, PP. 229-232, 1966.

1187. LENZ, A.C., UNIV. OF WESTERN ONTARIO-
UPPER SILURIAN AND LOWER DEVONIAN BRACHIOPOD BIOSTRATIGRAPHY OF NORTHERN YUKON AND WESTERN NORTHWEST TERRITORIES, 1964-69.
SEE UPPER SILURIAN AND LOWER DEVONIAN BIOSTRATIGRAPHY, ROYAL CREEK, YUKON TERRITORY, CANADA, INTERNATIONAL SYMPOSIUM ON THE DEVONIAN SYSTEM, VOL. II, 1967.

1188. LOGAN, A., UNIV. OF NEW BRUNSWICK-
PERMIAN BIOSTRATIGRAPHY OF CANADIAN ROCKIES AND YUKON, 1967-69.

1189. MACKENZIE, W.S., GEOL. SURV. CANADA-
STRATIGRAPHY OF THE DEVONIAN SOUTHESK CAIRN CARBONATE COMPLEX AND ASSOCIATED STRATA, EASTERN JASPER NATIONAL PARK, ALBERTA, 1961-67.
A STUDY OF THE STRATIGRAPHY OF THE SOUTHESK CAIRN CARBONATE COMPLEX AND ITS RELATION TO LATERALLY EQUIVALENT SHALES AND ARGILLACEOUS LIMESTONE. A PETROGRAPHIC STUDY OF SELECTED ROCK UNITS WITHIN THE CARBONATE COMPLEX IS INCLUDED. SEE GEOL. SURV. CAN., PAPER 64-19, 1964.

STRATIGRAPHY AND PALAEONTOLOGY

1190. MACQUEEN, R.W., BAMBER, E.W., GEOL. SURV. CANADA-
MISSISSIPPIAN STRATIGRAPHY, SEDIMENTOLOGY, AND CORRELATION, SOUTHERN ALBERTA, ROCKY MOUNTAINS AND FOOTHILLS, 1963-68.
A CONTINUING STUDY OF ALL MISSISSIPPIAN STRATA FROM THE CROWSNEST PASS AREA OF SOUTHERN ALBERTA TO THE JASPER AREA OF WEST-CENTRAL ALBERTA. THE STUDY HAS BEEN CONFINED TO SURFACE EXPOSURES IN THE ROCKY MOUNTAIN FOOTHILLS AND FRONT RANGES. SEE STRATIGRAPHY OF THE BANFF FORMATION AND LOWER RUNDLE GROUP (MISSISSIPPIAN), SOUTHWESTERN ALBERTA, GEOL. SURV. CAN., PAPER 67-47 (IN PRESS).

1191. MAMET, B., UNIV. DE MONTREAL-
ZONATION DU CARBONIFERE INFERIEUR DE CANADA ET DES ETATS-UNIS PAR MICROFACIES, 1965-.
UN ESSAI D HARMONISATION DES NOMENCLATURES STRATIGRAPHIQUES D EUROPE ET DU CONTINENT NORD-AMERICAIN, LES CORRELATIONS SONT BASEES SUR L ETUDE DU MICROFACIES ET EN PARTICULIER DES FORAMINIFERES. VOIR LOWER CARBONIFEROUS FORAMINIFERA, IMPLICATIONS FOR ZONATION OF THE MISSISSIPPIAN IN NORTH AMERICA, 7TH INTER. CONG. OF CARBONIFEROUS STRATIGRAPHY, SHEFFIELD, SEPT. 1967.

1192. MOORE, R.G., ACADIA UNIV.-
BIOSTRATIGRAPHIC UNITS IN THE UPPER PART OF THE WINDSOR GROUP, NOVA SCOTIA.

1193. MOUNTJOY, E.W., MCGILL UNIV. AND GEOL. SURV. CANADA-
CARBONIFEROUS STRATIGRAPHY AND PETROLOGY OF NORTHERN JASPER PARK, 1959-.
REGIONAL STUDY TO DETERMINE EXTENT, THICKNESS AND PETROGRAPHY OF VARIOUS UNITS. SEE THE PERMO-CARBONIFEROUS SUCCESSION OF MOUNT GREENOCK AND NORTHERN JASPER PARK, BULL. CAN. PETROL. GEOL., VOL. 13, PP. 340-345, 1965.
UPPER DEVONIAN MIETTE AND ANCIENT WALL REEF COMPLEXES, ALBERTA, 1960-.
INVESTIGATION INCLUDES A STUDY OF GROSS STRATIGRAPHIC RELATIONSHIPS, PETROLOGY AND DETAILED EXAMINATION OF REEF MARGINS IN ORDER TO DETERMINE DEPOSITIONAL HISTORY AND ENVIRONMENTS. A STUDY WAS ALSO UNDERTAKEN WITH DR. C.W. STEARN TO INVESTIGATE IN MORE DETAIL THE STRATIGRAPHY, PETROGRAPHY AND PALAEOECOLOGY OF THE SOUTHERN MARGIN OF THE ANCIENT WALL REEF. THE DETAILED STUDY OF ALL DEBRIS BRECCIA BEDS IS UNDERWAY, COMPARISONS WITH SUBSURFACE REEFS ARE ALSO UNDERWAY. SEE FACTORS GOVERNING THE DEVELOPMENT OF THE FRASNIAN, MIETTE AND ANCIENT WALL REEF COMPLEXES (BANKS AND BIOSHONES), ALBERTA, FIRST WORLD SYMPOSIUM ON THE DEVONIAN SYSTEM, VOL. 2.

STRATIGRAPHY AND PALAEONTOLOGY

1194. MOUNTJOY, E.W., MCGILL UNIV., MACKENZIE, W.S., GEOL. SURV. CANADA-
STRATIGRAPHY OF THE SOUTHERN PART OF THE DEVONIAN ANCIENT WALLREEF COMPLEX, JASPER NATIONAL PARK, ALBERTA, 1964-68.
A STUDY BASED ON MOUNTAIN OUTCROPS IN THE REGION NORTHWEST OF JASPER, OF THE STRATIGRAPHY OF AN UPPER DEVONIAN CARBONATE COMPLEX AND ITS RELATIONSHIP TO SURROUNDING ARGILLACEOUS STRATA. A PETROGRAPHIC ANALYSIS OF THE CAIRN AND SOUTHESK FORMATION CARBONATES IS INCLUDED.

1195. NASSICHUCK, W.W., GEOL. SURV. CANADA-
PERMIAN AMMONOIDS IN THE SVERDRUP BASIN AND BIOSTRATIGRAPHIC IMPLICATIONS, 1966-68.
SEE THE PERMIAN AMMONOIDS OF ARCTIC CANADA, GEOL. SURV. CAN., BULL. 131, 1965.

1196. SMITH, L., QUEENS UNIV.
EROSIONAL ASPECTS OF DEVONIAN CORRELATIONS, WESTERN CANADA, 1966-70.
A FIELD STUDY OF THE NEGLECTED EROSIONAL RELATIONSHIPS WITHIN THE WESTERN CANADIAN DEVONIAN, WHOSE DEPOSITIONAL RELATIONS HAVE RECEIVED SUCH EXTENSIVE STUDY.

1197. TAKE, W.F., NOVA SCOTIA RESEARCH FOUNDATION-
STRUCTURAL AND STRATIGRAPHIC STUDIES OF THE WINDSOR GROUP (MISSISSIPPIAN) OF CAPE BRETON ISLAND, 1967-.
A STUDY OF NUMEROUS STRUCTURAL AND STRATIGRAPHIC PROBLEMS IN AN ATTEMPT TO RECONSTRUCT THE ORIGINAL SPATIAL RELATIONSHIPS OF THE VARIOUS SECTIONS, AND TO DETERMINE THE SEDIMENTARY FACIES AND DEPOSITIONAL BASINS INVOLVED. THE ULTIMATE OBJECTIVE IS A BETTER UNDERSTANDING OF THE CARBONATE AND EVAPORITE ROCKS OF THE WINDSOR GROUP.

1198. TAYLOR, G.C., MACKENZIE, W.S., GEOL. SURV. CANADA-
DEVONIAN STRATIGRAPHY OF NORTHEAST BRITISH COLUMBIA, 1966-67.
A STUDY OF LOWER AND MIDDLE DEVONIAN FORMATIONS IN THE MOUNTAINS OF NORTHEAST BRITISH COLUMBIA BETWEEN 57 DEGREES AND 60 DEGREES N. LATITUDE AND 122 DEGREES AND 126 DEGREES W. LONGITUDE. INCLUDES COMPARISON OF THE LOCAL STRATIGRAPHY WITH ROCK UNITS IN THE NEARBY SURFACE AND SUBSURFACE.

STRATIGRAPHY AND PALAEONTOLOGY

1199. TOOMEY, D.F., PAN AMER. PETROL. CORP., MOUNTJOY, E.W., MCGILL UNIV., MACKENZIE, W.S., GEOL. SURV. CAN.- UPPER DEVONIAN (FRASNIAN) ALGAE AND FORAMINIFERA FROM THE ANCIENT WALL CARBONATE COMPLEX, JASPER NATIONAL PARK, ALBERTA, 1967-68.
A STUDY OF THE DISTRIBUTION OF FORAMINIFERA AND ALGAE WITHIN THE ANCIENT WALL CARBONATE COMPLEX OF NORTHERN JASPER NATIONAL PARK WITH A DISCUSSION OF OTHER KNOWN DEVONIAN FORAMINIFERAL HORIZONS IN NORTH AMERICA, AND AN EVALUATION OF THE POSSIBLE FUTURE ROLE OF FORAMINIFERA IN STRATIGRAPHIC AND ECOLOGIC STUDIES.

1200. TRETTIN, H.P., GEOL. SURV. CANADA- STRATIGRAPHY, STRUCTURE, AND CARBONATE PETROGRAPHY OF THE MARBLE CANYON FORMATION (PERMIAN) IN THE MARBLE RANGE, CARIBOO DISTRICT, BRITISH COLUMBIA, 1964-68. SEE GEOL. SURV. CAN., PAPER 66-1, PP. 98-101, 1966.

1201. UYENO, T.T. GEOL. SURV. CANADA- CONODONT BIOSTRATIGRAPHY OF MIDDLE AND UPPER DEVONIAN ROCKS OF MANITOBA, 1967-69.

1202. WARDLAW, N.C., UNIV. OF SASKATCHEWAN- CARNALLITE-SYLVITE RELATIONSHIPS IN THE MIDDLE DEVONIAN PRAIRIE EVAPORITE FORMATION, SASKATCHEWAN, 1965-67.
ABRUPT LATERAL AND VERTICAL CHANGES FROM RED CARNALLITE (CARNALLITE-HALITE ROCK) TO RED SYLVINITE (SYLVITE-HALITE ROCK) OCCUR IN THE PRAIRIE EVAPORITE FORMATION BETWEEN WATROUS AND KANDAHAR, SASKATCHEWAN. SUCH CHANGES ARE OF CONSIDERABLE ECONOMIC IMPORTANCE, SINCE CARNALLITE IS TO BE AVOIDED IN POTASH MINING OPERATIONS. STRATIGRAPHIC, MINERALOGICAL AND GEOCHEMICAL ASPECTS OF THE RELATIONSHIP HAVE BEEN INVESTIGATED AND CONCLUSIONS OF SIGNIFICANCE IN EXPLORATION DRAWN. SEE CARNALLITE-SYLVITE RELATIONSHIPS IN THE MIDDLE DEVONIAN PRAIRIE EVAPORITE FORMATION, SASKATCHEWAN- GEOL. SOC. AMER. BULL. (IN PRESS).

1203. WARDLAW, N.C., HOLTER, M.E., UNIV. OF SASKATCHEWAN- STRATIGRAPHY OF THE PRAIRIE EVAPORITE FORMATION, 1965-68- M.SC. THESIS (HOLTER).

1204. WARDLAW, N.C., STATHAM, K.F., UNIV. OF SASKATCHEWAN- MIDDLE DEVONIAN CARBONATE DEPOSITS OF THE NORTHWEST TERRITORIES, 1967-69- M.SC. THESIS (STATHAM).

1205. WORTH, J.K., ACADIA UNIV.-
EARLY MISSISSIPPIAN STRATIGRAPHY AND SEDIMENTATION, HANTS COUNTY, NOVA SCOTIA, 1967-68, M.SC. THESIS.

1206. YOLE, R.W., CARLETON UNIV.-
STRATIGRAPHY, PALAEONTOLOGY AND SEDIMENTOLOGY OF THE SICKER GROUP, VANCOUVER ISLAND , BRITISH COLUMBIA, 1960-67.
SEE AN EARLY PERMIAN FAUNA FROM VANCOUVER ISLAND, BRITISH COLUMBIA- ALTA. SOC. PETROL. GEOL., BULL. CANADIAN PETROL. GEOL., VOL. 11, PP. 138-149, 1963.

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1207. ACHAM, P., UNIV. OF ALBERTA-
THE MANNVILLE GROUP (LOWER CRETACEOUS) IN THE WINTERING HILLS - HUSSAR - CARBON GAS AREA, CENTRAL ALBERTA, 1966-68, M.SC. THESIS.

1208. BRAUN, W.K., BROOKE, (MISS) M.M., UNIV. OF SASKATCHEWAN-
MICROFAUNA AND STRATIGRAPHY OF THE JURASSIC RIERDON AND SWIFT FORMATIONS OF NORTHEAST MONTANA AND SOUTHWEST SASKATCHEWAN, 1966-68- M.A. THESIS (BROOKE).

1209. BURK, C.F. JUR., GEOL. SURV. CANADA-
SUBSURFACE STRATIGRAPHY OF DUNVEGAN FORMATION (UPPER CRETACEOUS), WEST-CENTRAL ALBERTA AND ADJACENT BRITISH COLUMBIA, 1963-68.
THE DUNVEGAN FORMATION IS AN EXCELLENT EXAMPLE OF A DELTAIC COMPLEX, THE DESCRIPTION AND ANALYSIS OF WHICH IS MADE POSSIBLE BY ABUNDANT WELL-CONTROL. SEE GEOL. SURV. CAN., PAPER 65-2, 1965.

1210. CALDWELL, W.G.E., NORTH, B.R., MCLEAN, J.R., HUFFMAN, D.P., RASK, D., UNIV. OF SASKATCHEWAN-
CRETACEOUS ROCKS OF THE CANADIAN GREAT PLAINS, 1959--
PH.D. THESIS (MCLEAN), M.SC. THESES (HUFFMAN AND RASK).
NORTH IS STUDYING THE FORAMINIFERA FROM THE COMPLETE CRETACEOUS SECTION EXPOSED IN SHAFTS OF THE VARIOUS POTASH MINES IN THE PROVINCE- MCLEAN IS UNDERTAKING A REGIONAL STRATIGRAPHICAL AND DETAILED PETROLOGICAL STUDY OF THE BELLY RIVER FORMATION- HUFFMAN IS STUDYING THE FORAMINIFERA OF THE WHITE-SPECKLED SHALES IN SOUTHWESTERN SASKATCHEWAN- RASK IS INVESTIGATING THE YOUNGER CRETACEOUS FORMATIONS IN THE FRENCHMAN RIVER VALLEY BETWEEN THE INTERNATIONAL BORDER AND THE CYPRESS HILLS. SEE FORAMINIFERAL ZONES IN THE CRETACEOUS WHITE

-SPECKLED SHALES OF EASTERN SASKATCHEWAN- GEOL. SOC. AMER., ANN. PROG., P. 34, 1966.

1211. CARRIGY, M.A., RESEARCH COUNCIL OF ALBERTA-
PETROLOGY OF NONMARINE UPPER CRETACEOUS-TERTIARY SANDSTONES, ALBERTA, 1961-68.
A SUBDIVISION OF THE POST KNEE HILLS MEMBER FORMATIONS OF THE ALBERTA PLAINS BASED ON THE PETROGRAPHY OF THE SANDSTONES WILL BE PROPOSED.
MCMURRAY FORMATION STUDIES, ALBERTA, 1953-67.
SEE THE PHYSICAL AND CHEMICAL NATURE OF A TYPICAL TAR SAND. PART 1- BULK PROPERTIES AND BEHAVIOUR, PROC. 7TH WORLD PETROL. CONG., MEXICO CITY.

1212. COATES, J.A., UNIV. OF BRITISH COLUMBIA-
DEWDNEY CREEK AND PASAYTEN GROUPS IN MANNING PARK, BRITISH COLUMBIA, 1965-68, PH.D. THESIS.
PART OF CORDILLERAN STRUCTURAL PROJECT.

1213. FREBOLD, H., GEOL. SURV. CANADA-
THE JURASSIC SYSTEM OF CANADA, 1950-.
SUBJECTS UNDER INVESTIGATION INCLUDE- (1) JURASSIC BEDS AND FOSSILS IN MANNING PARK AREA (WITH J. COATES), (2) LOWER JURASSIC FAUNAS FROM QUEEN CHARLOTTE ISLANDS, (3) NEW SINEMURIAN FAUNA FROM SOUTHEASTERN BRITISH COLUMBIA, (4) STRATIGRAPHY AND FAUNA OF THE UPPER PLIENSBACHIAN BEDS IN ALBERTA, (5) THE JURASSIC SYSTEM OF CANADA. SEE HETTANGIAN AMMONITE FAUNAS OF THE TASEKO LAKES AREA, B.C., GEOL. SURV. CAN., BULL. 158, 1967, MIDDLE CALLOVIAN SEDIMENTARY ROCKS AND GUIDE AMMONITES FROM SOUTHWESTERN B.C. (WITH H.W. TIPPER), GEOL. SURV. CAN., PAPER 67-21, 1967, NEW OCCURRENCES OF JURASSIC ROCKS AND FOSSILS IN CENTRAL AND NORTHERN YUKON TERRITORY (WITH E.W. MOUNTJOY AND D.J. TEMPELMAN-KLUIT), GEOL. SURV. CAN., PAPER 67-12, 1967.

1214. HAVARD, C.J. (MISS), GEOL. SURV. CANADA-
STRATIGRAPHY AND STRUCTURE OF LOWER CRETACEOUS SEDIMENTARY ROCKS OF THE WATERTON-CASTLE RIVER AREA, ALBERTA, 1967-69.

1215. JELETZKY, J.A., GEOL. SURV. CANADA-
CRETACEOUS AND JURASSIC OF NORTHEASTERN RICHARDSON MOUNTAINS, YUKON AND NORTHWEST TERRITORIES, 1954-70.
SEE JURASSIC AND TRIASSIC ROCKS OF THE EASTERN SLOPE OF RICHARDSON MOUNTAINS, NORTHWESTERN DISTRICT OF MACKENZIE, GEOL. SURV. CAN., PAPER 66-50, 1966.

CRETACEOUS MARINE ZONES OF THE CANADIAN WESTERN INTERIOR AND THEIR CORRELATION WITH THE U.S. WESTERN INTERIOR AND EUROPEAN ZONES AND STAGES, 1956-70.

JURASSIC-CRETACEOUS TRANSITION BEDS, PACIFIC SLOPE OF NORTH AMERICA, 1966-68.
SEE ABSTRACT VOLUME, GEOL. SOC. AMERICA, PP. 102-103, 1966.

CRETACEOUS AND LATE UPPER JURASSIC STRATIGRAPHY AND PALAEONTOLOGY OF WESTERN CANADIAN CORDILLERA, 1967-.
THE OBJECTIVE IS TO WORK OUT THE SEQUENCE OF THE CRETACEOUS AND LATE UPPER JURASSIC (BUCHIA-BEARING BEDS ONLY) MARINE FAUNAS OF THE CANADIAN WESTERN CORDILLERA.

1216. MCCABE, H.R., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES-
STRATIGRAPHIC MAP SERIES - JURASSIC AND LOWER CRETACEOUS FORMATIONS, MANITOBA, 1966-68.

1217. MOUNTJOY, E.W., MCGILL UNIV. AND GEOL. SURV. CANADA-
MESOZOIC STRATIGRAPHY OF NORTHERN YUKON, 1961-.
A REGIONAL STUDY OF THE MESOZOIC STRATIGRAPHY AS PART OF OPERATION PORCUPINE OF THE GEOLOGICAL SURVEY. INCLUDES DETERMINATION OF GROSS STRATIGRAPHIC RELATIONSHIPS, PETROGRAPHY AND DEPOSITIONAL HISTORY OF THESE ROCKS. SEE GEOL. SURV. CAN., PAPERS 66-16 AND 66-19, 1966 AND 67-12, 1967.

1218. NORRIS, G., UNIV. OF TORONTO-
CRETACEOUS STRATIGRAPHIC PALYNOLOGY OF WESTERN CANADA, 1964-.
DETAILED TAXONOMIC AND DISTRIBUTIONAL STUDIES OF CRETACEOUS MIOSPORES AND MICROPLANKTON TO EVALUATE THEIR CORRELATION POTENTIAL AND ENVIRONMENTAL SIGNIFICANCE. SEE SPORES AND POLLEN FROM THE LOWER COLORADO GROUP (ALBIAN - CENOMANIAN) OF CENTRAL ALBERTA, PALAEONTOGRAPHICA, ABT. B., VOL. 120, PP. 72-115.

1219. PRICE, L.L., GEOL. SURV. CANADA-
CORRELATION OF THE TYPE AREA OF THE LOWER CRETACEOUS SWAN RIVER GROUP, MANITOBA WITH SUBSURFACE ROCKS OF THE WILLISTON BASIN, 1959-68.

STRATIGRAPHIC STUDY OF THE WHITE-SPECKLED SHALES OF THE VERMILION RIVER FORMATION FROM THE MANITOBA ESCARPMENT TO CENTRAL SASKATCHEWAN, 1961-68.
RECENT ECONOMIC INTEREST IN THE SPECKLED SHALES HAS PROVIDED SUBSURFACE DATA NEAR THE MANITOBA ESCARPMENT TO AUGMENT EARLIER WORK IN OUTCROP. MORE INFORMATION IS PROVIDED BY THE LARGE DIAMETER POTASH MINE SHAFTS IN SASKATCHEWAN.

STRATIGRAPHY AND PALAEONTOLOGY

STRATIGRAPHY IN POTASH SHAFTS IN SASKATCHEWAN, 1963-69.

1220. RUSSELL, L.S., ROYAL ONTARIO MUSEUM, COBBAN, W.A., GILL, J.R., U.S. GEOLOGICAL SURVEY-
CORRELATION OF UPPER CRETACEOUS FORMATIONS IN MONTANA AND SOUTHERN ALBERTA, 1963-68.
THE TRANSGRESSIVE NATURE OF MANY FORMATIONAL BOUNDARIES IN THE UPPER CRETACEOUS OF ALBERTA AND MONTANA HAS MADE TIME CORRELATION DIFFICULT. IN THIS STUDY ALL AVAILABLE CRITERIA ARE BEING USED TO ESTABLISH TIME BOUNDARIES, WHICH WILL PERMIT A BETTER RECONSTRUCTION OF PHYSICAL HISTORY OF THIS REGION IN LATE CRETACEOUS TIME. SEE CRETACEOUS NON-MARINE FAUNAS OF NORTHWESTERN NORTH AMERICA, ROYAL ONT. MUS., LIFE SCI. CONTRIBUTION 61, 24 PP., 1964.

1221. SCHAU, M., UNIV. OF BRITISH COLUMBIA-
NICOLA GROUP, NEAR NICOLA LAKE, BRITISH COLUMBIA, 1965-68, PH.D. THESIS.
PART OF CORDILLERAN STRUCTURAL PROJECT.

1222. SNEAD, R., UNIV. OF ALBERTA-
CRETACEOUS-TERTIARY TRANSITION IN ALBERTA, 1964-68.

1223. STELCK, C.R., UNIV. OF ALBERTA-
CRETACEOUS STRATIGRAPHY OF WESTERN CANADA, 1940-.
SEE THE RECORD OF THE ROCKS - CHAPTER II IN A NATURAL HISTORY OF ALBERTA, W.G. HARDY ED., M.G. HURTIG, EDMONTON, PP. 21-51.

1224. STOTT, D.F., GEOL. SURV. CANADA-
STRATIGRAPHIC AND STRUCTURAL INVESTIGATIONS OF KING CHRISTIAN, ELLEF AND AMUND RINGNES ISLANDS, NORTHWEST TERRITORIES, 1967-.
THIS PROJECT WILL PROVIDE DATA ON JURASSIC AND CRETACEOUS STRATA AND THE DEVELOPMENT OF DIAPIRIC STRUCTURES.
STRATIGRAPHY OF LOWER CRETACEOUS BULLHEAD AND FORT ST. JOHN GROUPS, NORTHEASTERN BRITISH COLUMBIA, 1961-68.
FIELD WORK HAS BEEN COMPLETED BETWEEN PEACE RIVER (LATITUDE 56 DEGREES) AND NORTHERN BOUNDARY OF BRITISH COLUMBIA (LATITUDE 60 DEGREES). THIS INVESTIGATION PERMITS THE CORRELATION OF STRATA, OUTLINES THE LATERAL FACIES VARIATIONS, AND INDICATES THE POTENTIALITIES AS SOURCES AND RESERVOIRS OF OIL AND GAS. IN ADDITION, GEOLOGICAL MAPPING HAS BEEN CARRIED ON WITHIN THE REGION. SEE LOWER CRETACEOUS BULLHEAD AND

FORT ST. JOHN GROUPS, BETWEEN SMOKY AND PEACE RIVERS, ROCKY MOUNTAIN FOOTHILLS, ALBERTA AND BRITISH COLUMBIA, GEOL. SURV. CAN., BULL. 152, 1968.
CRETACEOUS SUBSURFACE STUDIES IN NORTHEASTERN BRITISH COLUMBIA, 1962-.
RECENT SUBSURFACE STUDIES HAVE ESTABLISHED CORRELATION OF FORMATIONS OF FORT ST. JOHN AND BULLHEAD GROUPS IN REGION BETWEEN PEACE RIVER IN BRITISH COLUMBIA AND UPPER MACKENZIE RIVER IN DISTRICT OF MACKENZIE. SEE GEOL. SURV. CAN., BULL. 152, 1968.
STRATIGRAPHY OF FERNIE FORMATION AND MINNES GROUP, NORTHEASTERN BRITISH COLUMBIA, 1962-70.
THIS STUDY IS BEING EXTENDED INTO THE REGION BETWEEN SMOKY (54 DEGREES) AND PEACE (56 DEGREES) RIVERS WHERE A NORTHERN FACIES OF DOMINANTLY MARINE SEDIMENTS GRADES INTO A WELL DEVELOPED CONTINENTAL FACIES SOUTHWARD ALONG THE FOOTHILLS. THIS STUDY WILL PROVIDE DETAILED LITHOLOGIC INFORMATION, OUTLINE THE EXTENT AND DISTRIBUTION OF THE VARIOUS FACIES AND THE DEVELOPMENT OF THE JURASSIC-EARLIEST CRETACEOUS BASIN. SEE GEOL. SURV. CAN., PAPER 67-19 (PART A).

1225. SUTHERLAND-BROWN, A., BRITISH COLUMBIA DEPT. MINES AND PETROLEUM RESOURCES-
STRATIGRAPHY OF THE HAZELTON AND BOWSER GROUPS AND THE RELATIONSHIP OF THE FORMER TO MINOR PLUTONS, 1967-.

1226. TIPPER, H.W., GEOL. SURV. CANADA-
OPERATION SKEENA RIVER, BRITISH COLUMBIA, 1 INCH TO 4 MILES, 1966-.
INVESTIGATION OF MESOZOIC STRATIGRAPHY OF SKEENA RIVER REGION. SEE GEOL. SURV. CAN., PAPER 67-1, 1967, P. 93.

1227. WESTERMANN, G.E.G., VICENCIO, R., MCMASTER UNIV.-
CALLOVIAN (JURASSIC) BIOSTRATIGRAPHY AND AMMONITE FAUNAS OF CHILE, 1967-69, PH.D. THESIS (VICENCIO).
SEE SUCCESSION DE AMMONITES DEL JURASICO MEDIO EN ANTOFAGASTA ATACAMMA, MENDOZA Y NEUQUEN, REVISTA ASOC. GEOL. ARGENTINA, VOL. 22, NO. 1, 1967.
JURASSIC BIOSTRATIGRAPHY AND AMMONITE FAUNAS OF THE SOUTHERN ANDES, 1965-70.
SEE SUCCESSION DE AMMONITES DEL JURASICO MEDIO EN ANTOFAGASTA ATACAMA, MENDOZA Y NEUQUEN, REVISTA ASOC. GEOL. ARGENTINA, VOL. 22, NO. 1, 1967.

1228. YORATH, C.J., GEOL. SURV. CANADA-
MESOZOIC STRATIGRAPHY OF THE EAGLE PLAINS AREA, YUKON

TERRITORY, 1967.
PRIMARILY A SUBSURFACE STUDY.
MESOZOIC STRATIGRAPHY AND SEDIMENTATION OF THE ARCTIC COASTAL PLAINS, NORTHWEST TERRITORIES, 1967-68.
DETAILED STRATIGRAPHIC STUDIES OF THE CRETACEOUS ROCKS OF THE ARCTIC COASTAL PLAINS IN CONJUNCTION WITH PALEOCURRENT ANALYSIS AND SHALE PETROLOGY.

Cenozoic

1229. MATTHEWS, J., UNIV. OF ALBERTA-
PALAEO-ENVIRONMENTAL STUDY OF THE QUATERNARY DEPOSITS ON THE SOUTH SIDE OF KOTZEBUE SOUND, ALASKA, 1967-69.

1230. RUSSELL, L.S., STORER, J.E., ROYAL ONTARIO MUSEUM-
FAUNA AND CORRELATION OF THE WOOD MOUNTAIN GRAVEL, MIOCENE, OF SASKATCHEWAN, 1967-69, PH.D. THESIS (STORER).
ALL AVAILABLE COLLECTIONS OF THE WOOD MOUNTAIN FAUNA ARE BEING STUDIED, AND NEW MATERIAL IS BEING COLLECTED. THIS STUDY SHOULD NOT ONLY PROVIDE ADEQUATE KNOWLEDGE OF AN IMPORTANT VERTEBRATE FAUNA, BUT SHOULD CONTRIBUTE TO THE WORKING OUT OF THE PHYSICAL HISTORY OF THE NORTHERN PLAINS IN TERTIARY TIME. SEE TERTIARY PLAINS OF ALBERTA AND SASKATCHEWAN, PROC. GEOL. ASSOC. CANADA, VOL. 9, PP. 17-19, 1957.

1231. SNEAD, R., UNIV. OF ALBERTA-
CRETACEOUS-TERTIARY TRANSITION IN ALBERTA, 1964-68.

1232. TERASMAE, J., GEOL. SURV. CANADA-
QUATERNARY STRATIGRAPHIC PALYNOLOGY IN CANADA, AND ITS PALEOECOLOGICAL AND CLIMATOLOGICAL IMPLICATIONS, 1952-.
THIS PROJECT IS INTEGRATED WITH OTHER INVESTIGATIONS IN DIFFERENT FIELDS OF QUATERNARY RESEARCH CARRIED ON BY GOVERNMENT AND UNIVERSITY SCIENTISTS. THE LONG-TERM PROJECT PROCEEDS WITH COMPLETION OF NUMEROUS SUBPROJECTS OF MORE LIMITED SCOPE IN SELECTED GEOGRAPHICAL AREAS WHERE OTHER STUDIES, SUCH AS GEOLOGICAL MAPPING, REQUIRE SUPPORTING PALYNOLOGICAL INVESTIGATION. THESE LIMITED STUDIES ARE PERIODICALLY BROUGHT TOGETHER IN MORE COMPREHENSIVE REGIONAL SUMMARY REPORTS. SEE A REVIEW OF QUATERNARY PALAEOBOTANY AND PALYNOLOGY IN CANADA, GEOL. SURV. CAN., PAPER 67-13, 1967.

STRATIGRAPHY AND PALAEONTOLOGY

1233. WESTGATE, J.A., UNIV. OF ALBERTA-
QUATERNARY VOLCANIC ASH CHRONOLOGY IN WESTERN CANADA, 1965-.
SEE VOLCANIC ASH LAYERS OF RECENT AGE AT BANFF NATIONAL PARK, ALBERTA, CANADA, CAN. J. EARTH SCIENCES, VOL. 4, PP. 155-161, 1967.

1234. WESTGATE, J.A., UNIV. OF ALBERTA, GREEN, R., RESEARCH COUNCIL OF ALBERTA-
STRATIGRAPHY AND PALAEOECOLOGY OF THE SASKATCHEWAN GRAVELS IN THE PEACE RIVER AREA, ALBERTA, 1965-69.

1235. WESTGATE, J.A., SMITH, D.G.W., UNIV. OF ALBERTA-
CHARACTERISATION OF QUATERNARY VOLCANIC ASH DEPOSITS IN WESTERN CANADA, 1967-.

General Problems

1236. BEALES, F., OLDERSHAW, A.E., UNIV. OF TORONTO-
STRATIGRAPHY AND PALEOECOLOGY OF PALEOZOIC AND RECENT LIMESTONES - A CONTINUING PROJECT.
A STUDY OF THE CONDITIONS OF DEPOSITION OF ANCIENT LIMESTONES AND THEIR SUBSEQUENT DIAGENESIS INCLUDING PARTICULAR INTEREST IN THE ORIGIN AND SUBSEQUENT DEVELOPMENT OF POROSITY IN LIMESTONES. THE SEDIMENTS OF THE BRENT METEORITE CRATER ARE BEING STUDIED AS AN EXAMPLE OF ACCUMULATION, AND DIAGENESIS, IN A CONTROLLED SETTING. SEE AN ASPECT OF SEDIMENTARY BASIN EVOLUTION - THE CONCENTRATION OF MISSISSIPPI VALLEY TYPE ORES DURING THE LATE STAGES OF DIAGENESIS, BULL. CAN. PETROL., VOL. 16, 1967.

1237. BELAND, J., GENTILE, F., UNIV. DE MONTREAL-
STRUCTURE ET STRATIGRAPHIE DU DOME LEMIEUX, GASPESIE, QUEBEC, 1965-68, THESE DE MAITRISSE (GENTILE).
RELATIONS D UNE MINERALISATION DE CUIVRE, PLOMB ET ZINC A UNE SERIE DE BRECHES TECTONIQUES FORMEES EN BORDURE ET A L INTERIEUR DE DOME. ORIGINE ET MODE DE FRACTURATION DU DOME.

1238. BOLTON, T.E., GEOL. SURV. CANADA-
LEXICON OF STRATIGRAPHIC NAMES USED IN CANADA, 1958-.

1239. CHARLESWORTH, H.A.K., ZATURECKY, J.W., UNIV. OF ALBERTA-
STRUCTURE, STRATIGRAPHY AND METAMORPHISM OF PRECAMBRIAN ROCKS IN THE CANADIAN ROCKY MOUNTAINS, 1959-,

M.SC. THESIS (ZATURECKY).
AT PRESENT THE NATURE OF THE VARIOUS TYPES OF CLEAVAGE PRESENT, THEIR RELATIONSHIP TO ASSOCIATED STRUCTURES, AND THEIR ORIGIN, ARE BEING STUDIED. SEE PRECAMBRIAN GEOLOGY OF THE JASPER REGION, ALBERTA, RES. COUN. ALBERTA, BULL. 23, 1967.

1240. DIXON, O.A., UNIV. OF OTTAWA-
LOWER CARBONIFEROUS STRATIGRAPHY AND PALAEONTOLOGY OF NORTHEASTERN IRELAND, 1963-68.
BIOSTRATIGRAPHIC STUDIES AND SYSTEMATIC INVESTIGATION OF CERTAIN RUGOSE CORAL FAUNAS.

1241. FYSON, W.K., UNIV. OF OTTAWA-
STRUCTURAL AND STRATIGRAPHIC RELATIONS OF PALAEOZOIC AND MESOZOIC ROCKS IN THE SHUSWAP LAKE AREA, BRITISH COLUMBIA, 1965-68.

1242. GIBSON, D.W., GEOL. SURV. CANADA-
TRIASSIC STRATIGRAPHY AND PETROLOGY IN THE FOOTHILLS AND FRONT RANGES OF WESTERN CANADA, ALBERTA AND BRITISH COLUMBIA, 1962-.
THE DETAILED STUDY OF THE STRATIGRAPHY AND PETROLOGY TO PROVIDE DATA ON THE CHARACTER, STRUCTURE, DISTRIBUTION, AGE, STRATIGRAPHIC RELATIONSHIPS, ORIGIN OF THE BEDROCK, AND OTHER GEOLOGICAL DATA REQUIRED TO EVALUATE THE OIL, GAS AND MINERAL POTENTIALITIES OF THE REGION.

1243. GILMORE, R.G., MCGILL UNIV.-
STRATIGRAPHY OF PHILLIPSBURG THRUST SHEET, QUEBEC, 1966-69, M.SC. THESIS.

1244. GORDON, A.J., UNIV. OF NEW BRUNSWICK-
LOWER PALAEOZOIC SEDIMENTS OF CENTRAL NEW BRUNSWICK, 1966-69.
SEE MACTAQUAC-WOODSTOCK AREA- INFORMATION CIRCULAR 67-1, MINES BRANCH, NEW BRUNSWICK DEPT. NATURAL RESOURCES.

1245. KARROW, P.F., UNIV. OF WATERLOO-
FLORA AND FAUNA OF THE GLACIAL LAKES OF SOUTHERN ONTARIO, 1957-.

1246. KARROW, P.F., CARTER, J.C., FERNANDO, C.H., DUTHIE, H.C., MANNADA RANI, R.G., HUI, H.T., UNIV. OF WATERLOO-
STUDY OF FOSSIL REMAINS OF THE TORONTO INTERGLACIAL

AND INTERSTADIAL DEPOSITS, 1957-, PH.D. THESIS, MANNADA RANI AND HUI.
SEE PLEISTOCENE GEOLOGY OF THE SCARBORO AREA, ONT. DEPT. MINES, GEOL. REPT. 46.

1247. KERR, J.WM., GEOL. SURV. CANADA-
STRATIGRAPHY OF CENTRAL AND EASTERN ELLESMERE ISLAND, NORTHWEST TERRITORIES, 1961-.
SEE GEOL. SURV. CAN., PAPER 67-27, PART I, 1967.

1248. KERR, J.WM., TEMPLE, P.G., GEOL. SURV. CANADA-
STRATIGRAPHY AND STRUCTURE OF BATHURST ISLAND, NORTHWEST TERRITORIES, 1963-68.
SEE GEOL. SURV. CAN., PAPER 65-1, 1965.

1249. LIBERTY, B.A., UNIV. OF GUELPH-
PALAEOZOIC GEOLOGY OF KINGSTON AREA, ONTARIO-
SEE PALAEOZOIC GEOLOGY OF THE KINGSTON AREA, ONTARIO, GEOL. ASSOC. CAN. KINGSTON MEETINGS, GUIDEBOOK, PP. 167-182 AND 235-240, 1967.

1250. MASON, G.D., QUEBEC DEPT. OF NATURAL RESOURCES-
STRATIGRAPHIC STUDY IN THE EAST GASPE BASIN, 1967-68.
A TWO-YEAR FIELD INVESTIGATION OF THE PETROLEUM POSSIBILITIES IN THE LOWER DEVONIAN FORMATIONS OF EASTERN GASPE PENINSULA, WITH SPECIAL EMPHASIS ON THE GASPE LIMESTONE-GASPE SANDSTONE TRANSITION.

1251. MCCABE, H.R., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES-
STRUCTURAL AND ISOPACH FEATURES OF THE PALAEOZOIC FORMATIONS OF SOUTHWESTERN MANITOBA, 1966-68.
SEE TECTONIC FRAMEWORK OF PALAEOZOIC FORMATIONS IN MANITOBA, CANADIAN MINING AND METALLURGICAL BULLETIN, VOL 60, NO. 663, PP. 765-774, JULY 1967.

1252. MCGUGAN, A., AND GRADUATE STUDENTS-
STUDIES IN CRETACEOUS MICROPALEONTOLOGY, ORGANIC RHYTHMS AND GEOCHRONOLOGY, PERMIAN STRATIGRAPHY, PALAEOZOIC CONODONTS AND TRACE FOSSILS, M.SC. THESES (LANGHUS, BAXTER, NAQVI).
SEE BERGAUERIA FROM THE CAMBRIAN OF SENTINEL PASS, ALBERTA, JOUR. PALAEONT., JANUARY, 1968.

1253. NELSON, S.J., UNIV. OF CALGARY-
HISTORICAL GEOLOGY OF WESTERN CANADA, 1967-69.
AN ATTEMPT TO GRAPHICALLY PORTRAY THE DEVELOPMENT OF WESTERN CANADA (MANITOBA TO BRITISH COLUMBIA) FROM

PROTEROZOIC TIMES TO RECENT, BY MEANS OF PALAEO-GEOGRAPHICALLY AND STRUCTURALLY ACCURATE BLOCK DIAGRAMS.

1254. NORTH, F.K., CARLETON UNIV.-
THE CAMBRIAN SYSTEM IN CANADA, 1967.
A COORDINATED SUMMARY OF ALL ASPECTS OF THE CAMBRIAN SYSTEM WHEREVER IT OCCURS IN MAINLAND CANADA FOR THE VOLUME ON THE CAMBRIAN SYSTEM IN NORTH AMERICA IN THE WILEY INTER-SCIENCE SERIES ON THE GEOLOGICAL SYSTEMS OF THE WORLD. SEE CAMBRIAN OF THE CORDILLERA-IN GEOLOGICAL HISTORY OF WESTERN CANADA- ALTA. SOC. PETROL. GEOL., DECEMBER 1964, PP. 28-33.

1255. PROCTER, R.M., GEOL. SURV. CANADA-
SUBSURFACE STRATIGRAPHY, MISSISSIPPIAN, PENNSYLVANIAN, PERMIAN AND TRIASSIC OF NORTHEASTERN BRITISH COLUMBIA, 1961-.
SEE GEOL. SURV. CAN., PAPER 66-2, 1966.
PRECAMBRIAN AND CAMBRIAN STRATIGRAPHY, NORTHERN YUKON AND DISTRICT OF MACKENZIE, 1962-68.

1256. SANFORD, B.V., GEOL. SURV. CANADA-
SUBSURFACE STUDIES OF EACH OF THE PALAEOZOIC SYSTEMS OF SOUTHWESTERN ONTARIO, 1958-.
TO DESCRIBE AND INTERPRET THE GEOLOGICAL FEATURES OF THE FORMATIONS OF EACH SYSTEM, AND TO ASSESS THEIR ECONOMIC POTENTIALITIES. SEE GEOL. SURV. CAN., PAPER 65-30, 1965.

1257. THORSTEINSSON, R., KERR, J.WM., GEOL. SURV. CANADA-
CORNWALLIS ISLAND AREA, NORTHWEST TERRITORIES, 1965-67.
SEE GEOL. SURV. CAN., PAPER 66-1, 1966.

STRUCTURAL GEOLOGY

Alberta

1258. BIELENSTEIN, H.V., GEOL. SURV. CANADA-
STRUCTURAL ANALYSIS OF THE RUNDLE THRUST SHEET, ALBERTA, 1965-68, PH.D. THESIS, QUEEN S UNIV.
THE OBJECTIVES ARE TO OUTLINE THE FORM OF THE SHEET AND ESTABLISH ITS SPATIAL RELATIONSHIPS WITH CONTIGUOUS THRUST SHEETS, AND TO INVESTIGATE THE PATTERN OF DISPLACEMENT OF THE SHEET AND THE NATURE AND VARIATION OF THE TECTONIC FABRIC WITHIN THE SHEET, WITH PARTICULAR EMPHASIS ON MESOSCOPIC FABRIC ELEMENTS AND THEIR BEARING ON THE KINEMATICS AND DYNAMICS OF THE DEVELOPMENT AND TRANSLATION OF THE SHEET.

1259. BIELENSTEIN, H.V., AMBROSE, J.W., QUEEN*S UNIV.-
THE RUNDLE THRUST SHEET, BANFF, ALBERTA, 1966-68, PH.D. THESIS (BIELENSTEIN).
INCLUDES DETAILED FIELD MAPPING OF THE THRUST SHEET AND ASSOCIATED STRUCTURES, STATISTICAL INVESTIGATION OF ASSOCIATED MINOR STRUCTURES.

1260. HAVARD, C.J. (MISS), GEOL. SURV. CANADA-
STRATIGRAPHY AND STRUCTURE OF LOWER CRETACEOUS SEDIMENTARY ROCKS OF THE WATERTON-CASTLE RIVER AREA, ALBERTA, 1967-69.

1261. MOUNTJOY, E.W., MCGILL UNIV. AND GEOL. SURV. CANADA-
STRUCTURE OF FRONT AND MAIN RANGES, NORTHERN JASPER PARK, ALBERTA, 1957-.
EXTENT, GEOMETRY AND DEVELOPMENT OF FOLD AND THRUST STRUCTURES, RELATIONSHIPS OF FOLDS WITH ABRUPT TERMINATION OF THRUSTS, INTERRELATIONS OF HANGING-WALL AND FOOT-WALL STRUCTURES. SEE ROCKY MOUNTAIN FRONT RANGES BETWEEN ROCKY RIVER AND MEDICINE LAKE, JASPER NATIONAL PARK, ALBERTA, EDMONTON GEOL. SOC. 6TH GUIDEBOOK.

1262. OLLERENSHAW, N.C., GEOL. SURV. CANADA-
STRUCTURE AND STRATIGRAPHY OF THE LAKE MINNEWANKA AND WILDCAT HILLS (WEST HALF) MAP-AREAS, SOUTHERN FOOTHILLS OF ALBERTA, 1966-68.

1263. PRICE, R.A., GEOL. SURV. CANADA-
TECTONIC FABRICS IN THE SOUTHERN FOOTHILLS AND ROCKY MOUNTAINS, ALBERTA AND BRITISH COLUMBIA, 1964-.
THE PROJECT IS CONCERNED WITH THE NATURE AND VARIATION OF TECTONIC FABRICS IN THE VARIOUS STRUCTURAL SUBDIVISIONS OF THE REGION, THE KINEMATIC HISTORY AND

RELATIONSHIPS OF THESE STRUCTURAL SUBDIVISIONS, AND THE MECHANICAL BASIS FOR VARIOUS TYPES OF GEOLOGIC STRUCTURE OCCURRING IN THE REGION. SEE THE TECTONIC SIGNIFICANCE OF MESOSCOPIC SUBFABRICS IN THE SOUTHERN ROCKY MOUNTAINS OF ALBERTA AND BRITISH COLUMBIA, CAN. JOUR. EARTH SCIENCES, VOL. 4, PP. 39-70, 1967.

1264. SRIVASTAVA, P.N., MCGILL UNIV.-
ENVIRONMENTAL STUDIES IN BRECCIAS OF THE ANCIENT WALL REEF COMPLEX, ALBERTA, 1967-69, M.SC. THESIS.

British Columbia

1265. BALKWILL, H.R., GEOL. SURV. CANADA-
STRUCTURAL ANALYSIS OF THE WESTERN RANGES SUBPROVINCE, ROCKY MOUNTAINS, GOLDEN AREA, BRITISH COLUMBIA, 1966-68, PH.D. THESIS, UNIV. OF TEXAS.
THE OBJECTIVES ARE TO ESTABLISH THE WESTERN RANGES SUBPROVINCE IN THIS REGION, ITS STRUCTURAL RELATIONSHIPS TO THE MAIN RANGES SUBPROVINCE OF THE ROCKY MOUNTAINS AND THE DOGTOOTH RANGE SUBPROVINCE OF THE PURCELL MOUNTAINS, AND THE CHARACTER AND PHYSICAL SIGNIFICANCE OF MESOSCOPIC FABRIC ELEMENTS IN THE REGION.

1266. BONE, M.N., BARR, K.G., BERRY, M.J., DOMINION OBSERVATORY-
CRUSTAL STUDIES IN THE CORDILLERA - A CONTINUING
A PROGRAM OF SEISMIC REFRACTION STUDIES TO OUTLINE THE MAJOR CRUSTAL AND UPPER MANTLE FEATURES OF THE CORDILLERAN REGION. OBSERVATIONS PARALLEL TO THE WEST COAST AND A REVERSED PROFILE FROM MERRIT TO QUESNELL HAVE BEEN PUBLISHED. THE LATEST WORK CONSISTS OF A REVERSAL OF AN ACROSS STRIKE PROFILE. A RE-EVALUATION AND INTERPRETATION OF ALL DATA ACQUIRED SINCE 1964 IS UNDERWAY. SEE SEISMIC REFRACTION SURVEYS IN BRITISH COLUMBIA, 1964-1966- A PRELIMINARY INTERPRETATION, AGU MONOGRAPH, 1967 (IN PRESS).

1267. COOK, D.G., GEOL. SURV. CANADA-
STRUCTURAL ANALYSIS OF THE **STEPHEN-DENNIS FAULT**, KICKINGHORSE PASS REGION, BRITISH COLUMBIA, 1965-67, PH.D. THESIS, QUEEN S UNIV.
THE OBJECT IS TO ESTABLISH THE NATURE AND TECTONIC SIGNIFICANCE OF THE **STEPHEN-DENNIS FAULT**, TO INVESTIGATE THE TECTONIC SIGNIFICANCE OF THE CHANGE IN STYLE OF DEFORMATION BETWEEN THE EASTERN AND WESTERN PARTS OF THE MAIN RANGES SUBPROVINCE OF THE CANADIAN ROCKIES, AND TO ANALYZE THE KINEMATICS OF THE DEFORMATION OF THE REGION.

STRUCTURAL GEOLOGY

1268. COOK, D.G., AMBROSE, J.W., QUEEN*S UNIV.-
THE STEPHEN-DENNIS ZONE, FIELD, BRITISH COLUMBIA, 1966-67, PH.D. THESIS (COOK).
AN INTENSIVE STUDY OF THE STRATIGRAPHIC AND STRUCTURAL RELATIONSHIPS BETWEEN THE EASTERN AND WESTERN MAIN RANGES OF THE ROCKY MOUNTAINS INVOLVING AN INVESTIGATION OF THE SO-CALLED STEPHEN-DENNIS FAULT ZONE.

1269. FYSON, W.K., UNIV. OF OTTAWA-
STRUCTURAL AND STRATIGRAPHIC RELATIONS OF PALAEOZOIC AND MESOZOIC ROCKS IN THE SHUSWAP LAKE AREA, BRITISH COLUMBIA, 1965-68.

1270. PRICE, R.A., GEOL. SURV. CANADA-
TECTONIC FABRICS IN THE SOUTHERN FOOTHILLS AND ROCKY MOUNTAINS, ALBERTA AND BRITISH COLUMBIA, 1964-.
THE PROJECT IS CONCERNED WITH THE NATURE AND VARIATION OF TECTONIC FABRICS IN THE VARIOUS STRUCTURAL SUBDIVISIONS OF THE REGION, THE KINEMATIC HISTORY AND RELATIONSHIPS OF THESE STRUCTURAL SUBDIVISIONS, AND THE MECHANICAL BASIS FOR VARIOUS TYPES OF GEOLOGIC STRUCTURE OCCURRING IN THE REGION. SEE THE TECTONIC SIGNIFICANCE OF MESOSCOPIC SUBFABRICS IN THE SOUTHERN ROCKY MOUNTAINS OF ALBERTA AND BRITISH COLUMBIA, CAN. JOUR. EARTH SCIENCES, VOL. 4, PP. 39-70, 1967.

1271. SIMONY, P.S., ELLISON, A.H., WIND, G., UNIV. OF CALGARY-
GEOLOGY OF THE DOGTOOTH MOUNTAINS AND OF ADJACENT PORTIONS OF THE ROCKY MOUNTAIN TRENCH, BRITISH COLUMBIA, 1965-69, M.SC. THESES (ELLISON, WIND).

1272. STOCKWELL, C.H., GEOL. SURV. CANADA-
TECTONIC MAP OF CANADA, 1958-.
SEE GEOL. SURV. CAN., PAPER 64-17, 1964.

1273. TRETTIN, H.P., GEOL. SURV. CANADA-
STRATIGRAPHY, STRUCTURE, AND CARBONATE PETROGRAPHY OF THE MARBLE CANYON FORMATION (PERMIAN) IN THE MARBLE RANGE, CARIBOO DISTRICT, BRITISH COLUMBIA, 1964-68. SEE GEOL. SURV. CAN., PAPER 66-1, PP. 98-101, 1966.

Manitoba

1274. ARTHUR, J.C.L., UNIV. OF MANITOBA-
STRUCTURAL STUDIES OF THE SAN ANTONIO FORMATION AND

UNDERLYING VOLCANIC ROCKS, MANITOBA, 1966-68-
M.SC. THESIS.

1275. BELL, K.W., UNIV. OF MANITOBA-
STRUCTURAL STUDIES OF THE SAN ANTONIO CONGLOMERATE,
MANITOBA, 1965-67- M.SC. THESIS.

1276. BRISBIN, W.C., UNIV. OF MANITOBA-
A STUDY OF DEFORMATIONAL ENVIRONMENTS IN THE PRE-
CAMBRIAN SHIELD, EASTERN MANITOBA, NORTHWESTERN
ONTARIO, 1965-68.
AT LEAST THREE DEFORMATIONAL LARGE SUBAREAS OF THE SUPERIOR PROVINCE ARE CHARACTERIZED BY STRUCTURES HAVING DISTINCTLY DIFFERENT GEOMETRIC AND KINEMATIC PROPERTIES. DETAILED STUDIES OF THESE STRUCTURES SUGGEST THAT THE DIFFERENCES ARE A RESULT OF DIFFERENT DEFORMATIONAL ENVIRONMENTS RELATED TO THE EMPLACEMENT OF GRANITIC DIAPIRIC INTRUSIONS. PRESENT WORK IS DIRECTED TOWARDS OUTLINING THE GEOMETRY OF FOLDS AND MOVEMENTS WHICH HAVE PRODUCED THEM IN AREAS WHICH ARE BELIEVED TO REPRESENT (A) THE ROOT ZONE, (B) THE FLANK ZONE, (C) THE OVERLYING ZONE, OF THE INTRUSIVE MASSES. TREATMENT OF DATA FOR DETAILED STRUCTURAL ANALYSIS IS BEING DONE BY COMPUTER TECHNIQUES. SEE A COMPUTER ORIENTED FIELD SHEET FOR STRUCTURAL DATA, CAN. JOUR. EARTH SCI., VOL. 4, PP. 657-662, 1967.

1277. BRISBIN, W.C., WILSON, H.D.B., UNIV. OF MANITOBA-
REGIONAL STRUCTURAL STUDIES IN MANITOBA AND NORTH-
WESTERN ONTARIO, 1964-69.
INVOLVES SYNTHESIS OF SURFACE GEOLOGIC, GRAVITY, DEEP AND UPPER CRUSTAL SEISMIC, AEROMAGNETIC, AND AIRPHOTO LINEAR DATA. OBJECTIVES ARE TO EXTABLISH RELATIONSHIP BETWEEN CRUSTAL STRUCTURE, COMPOSITION AND DISTRIBUTION OF GEOLOGIC FEATURES ON THE SURFACE. WORK TO DATE HAS INDICATED THAT SUBDIVISIONS OF BOTH THE CHURCHILL AND SUPERIOR PROVINCES OF THE PRECAMBRIAN SHIELD HAVE MARKEDLY DIFFERENT PETROLOGIC, METAMORPHIC AND STRUCTURAL CHARACTER AND THAT THESE SUBDIVISIONS ARE RELATED TO MAJOR FEATURES OF CRUSTAL STRUCTURE.

1278. STAUFFER, M.R., UNIV. OF SASKATCHEWAN-
STUDY OF ROCK DEFORMATION, 1967-.

1279. STUTSKY, B.E., UNIV. OF MANITOBA-
STRUCTURAL GRAVITY OF GNEISSIC ROCKS IN THE CEDAR LAKE
AREA, MANITOBA, 1967-68.

1280. TUREK, A., HAUGH, I., MCRITCHIE, D., WEBER, W., SCOATES, R.F.J., PHILLIPS, K.A., MANITOBA DEPT. OF MINES AND NATURAL RESOURCES- ANDERSON, D.T., BRISBIN, W.C., CHURCH, N.B., HALL, D.H., TURNOCK, A.C., WILSON, H.D.B., AND GRADUATE STUDENTS, UNIV. OF MANITOBA-
PROJECT PIONEER, 1965-71.
A COOPERATIVE COMPREHENSIVE FIELD AND LABORATORY STUDY OF THE RICE LAKE-BERESFORD LAKE AREA OF SOUTHEASTERN MANITOBA. INCLUDES DETAILED MAPPING, PHOTOGEOLOGIC INTERPRETATION, AEROMAGNETIC INTERPRETATION, DEEP CRUSTAL SEISMIC SURVEY, GRAVITY, ROCK MAGNETISM, REGIONAL AND LOCAL DETAILED STRUCTURAL ANALYSES, GAMMA-RAY SPECTROMETRY, PETROLOGY, MINERALOGY, CHEMISTRY, TRACE ELEMENTS, GEOCHRONOLOGY, ECONOMIC GEOLOGY, AND STUDIES OF VOLCANICITY, SEDIMENTATION, AND METAMORPHISM.

1281. ZWANZIG, H.V., UNIV. OF MANITOBA-
STRUCTURAL GEOLOGY OF THE LONG LAKE AREA, EASTERN MANITOBA, 1967- M.SC. THESIS.

Newfoundland and Labrador

1282. KENNEDY, M.J., MEMORIAL UNIV. OF NEWFOUNDLAND-
STRUCTURAL STUDY OF THE FLEUR DE LYS GROUP, NORTHEASTERN NEWFOUNDLAND, 1966-68.
THE PURPOSES ARE TO MAP THE DETAILED STRUCTURE OF THIS GROUP, RELATE METAMORPHISM TO THE STRUCTURAL SEQUENCE, DETERMINE THE RELATIONSHIP BETWEEN STRUCTURES IN THESE ROCKS AND STRUCTURAL FEATURES OF OTHER ROCKS IN THE AREA, AND TO COMPARE THE STRUCTURE, STRATIGRAPHY AND METAMORPHISM OF THE FLEUR DE LYS GROUP WITH THE MOINE/DALRADIAN ROCKS OF SCOTLAND AND IRELAND. SEE THE RELATIONSHIP OF THE FLEUR DE LYS GROUP TO YOUNGER ROCKS IN THE BURLINGTON PENINSULA, NEWFOUNDLAND, GEOL. ASSOC. CAN., SPECIAL VOLUME NO. 4, 1967.

1283. STEVENS, R., UNIV. OF WESTERN ONTARIO-
THE TACONIC OROGENY, WILD FLYSCH, AND GRAVITY SLIDING IN WESTERN NEWFOUNDLAND, 1966-69, PH.D. THESIS.

Nova Scotia

1284. BIDGOOD, D.E.T., TAKE, W.F., NOVA SCOTIA RESEARCH FOUNDATION-
GRAVITY STUDY OF A HORTON GRABEN IN CENTRAL NOVA SCOTIA, 1967-.
THREE GRAVITY PROFILES ACROSS AN AREA OF HORTON

ROCKS BOUNDED BY MAJOR FAULTS GAVE POSITIVE ANOMALIES. GEOPHYSICAL AND GEOLOGICAL INTERPRETATION INDICATED PRESENCE OF DENSE ROCKS BELOW THE HORTON. THIS WORK IS BEING CARRIED OUT IN CONJUNCTION WITH THE NOVA SCOTIA DEPARTMENT OF MINES.

1285. TAKE, W.F., NOVA SCOTIA RESEARCH FOUNDATION-
STRUCTURAL AND STRATIGRAPHIC STUDIES OF THE WINDSOR GROUP (MISSISSIPPIAN) OF CAPE BRETON ISLAND, 1967-.

A STUDY OF NUMEROUS STRUCTURAL AND STRATIGRAPHIC PROBLEMS IN AN ATTEMPT TO RECONSTRUCT THE ORIGINAL SPATIAL RELATIONSHIPS OF THE VARIOUS SECTIONS, AND TO DETERMINE THE SEDIMENTARY FACIES AND DEPOSITIONAL BASINS INVOLVED. THE ULTIMATE OBJECTIVE IS A BETTER UNDERSTANDING OF THE CARBONATE AND EVAPORITE ROCKS OF THE WINDSOR GROUP.

PHOTOLINEAR PATTERNS ASSOCIATED WITH INTRUSIVE SALT BODIES IN NOVA SCOTIA, 1967-.

STRONG PHOTOLINEAR PATTERNS, APPARENTLY CAUSED BY CONTINUED MOVEMENT OF INTRUSIVE SALT BODIES, ASSIST IN THE INTERPRETATION OF GRAVITY DATA AND THE LOCATION OF NEAR SURFACE EXTENSIONS OF SALT.

Northwest Territories

1286. BARR, K.G., TYRLIK, W.T., BERRY, M.J., DOMINION OBSERVATORY-
CRUSTAL STUDIES IN YELLOWKNIFE AREA, NORTHWEST TERRITORIES, 1966-68.

AN EXPERIMENT USING 18 SHOT POINTS AND ELEVEN OBSERVING CREWS WAS UNDERTAKEN IN 1966 TO DETERMINE THE SUB-MOHO VELOCITY AND TIME TERMS AT POINTS INSIDE AND OUTSIDE THE SLAVE PROVINCE, AND TO SHOOT A PROFILE THROUGH YELLOWKNIFE AT DISTANCES BRACKETING THE CROSS OVER DISTANCE, ACROSS THE BEAR-SLAVE PROVINCIAL BOUNDARY AND CROSS THE MCDONALD FAULT. PARTICULAR ATTENTION WILL BE PAID TO THE CRUSTAL CALIBRATION OF THE YELLOWKNIFE ARRAY, AND TO AN EVALUATION OF DIGITAL PROCESSING TECHNIQUES. SEE UPPER MANTLE STRUCTURE IN CANADA FROM SEISMIC OBSERVATIONS USING CHEMICAL EXPLOSIONS, CAN. J. EARTH SCI., VOL. 4, PP. 961-976, 1967.

CRUSTAL STUDIES IN CANADIAN ARCTIC, 1962-.

REFRACTION SEISMIC PROFILES IN THE ARCTIC ARCHIPELAGO WITH SPECIAL INTEREST IN ANOMALOUS FEATURES IN THE WESTERN ARCTIC ISLANDS AND THE CONTINENTAL MARGIN. ATTEMPTS ARE BEING MADE TO RELATE THE SEISMIC REFRACTION RESULTS TO OTHER GEOPHYSICAL RESULTS IN THE SAME AREA. DURING 1967 A REVERSED PROFILE WAS RUN ACROSS THE CONTINENTAL SHELF 200 KM. N.W. FROM PRINCE PATRICK ISLAND. SEE DEEP SEISMIC REFRACTION INVESTIGATION IN

THE CANADIAN ARCTIC ARCHIPELAGO, GEOPHYSICS, VOL. 30, P. 87, 1965.

1287. NORRIS, D.K., LAROCHELLE, A., GEOL. SURV. CANADA-
STRUCTURAL AND PALAEOMAGNETIC FABRIC OF THE MACKENZIE DEFLECTION, 1966-69.
A DETAILED ANALYSIS OF THE REGIONAL AND LOCAL STRUCTURE AND OF THE PALAEOMAGNETIC FABRIC OF THE MACKENIZE DEFLECTION TO ASSESS ITS ORIGIN AND TECTONIC SIGNIFICANCE.

1288. SOBCZAK, L.W., BERKOUT, A.J., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY FIELD - SOMERSET AND PRINCE OF WALES ISLANDS, NORTHWEST TERRITORIES, 1965-67.
DURING THE SPRING AND SUMMER OF 1965 SOME 750 GRAVITY OBSERVATIONS WERE MADE. THE BOUGUER ANOMALY MAP PREPARED FROM THESE DATA DISPLAYS, IN THE CENTRAL AND SOUTHERN PART OF THE AREA, A SERIES OF NORTH-TRENDING HIGHS AND LOWS. THESE ANOMALIES ARE ATTRIBUTED TO DENSITY VARIATIONS WITHIN THE CRYSTALLINE BASEMENT ROCKS. TWO LOCAL GRAVITY HIGHS OVER WESTERN PRINCE OF WALES ISLAND ARE INTERPRETED AS INDICATING RELATIVELY NEAR-SURFACE BASIC INTRUSIONS. SEE A PRELIMINARY INVESTIGATION OF GRAVITY OBSERVATIONS IN THE SOMERSET AND PRINCE OF WALES ISLANDS, ARCTIC CANADA, DOM. OBS., GRAVITY MAP SERIES, NO. 81, 1967 (IN PRESS).

1289. STOTT, D.F., GEOL. SURV. CANADA-
STRATIGRAPHIC AND STRUCTURAL INVESTIGATIONS OF KING CHRISTIAN, ELLEF AND AMUND RINGNES ISLANDS, NORTHWEST TERRITORIES, 1967-.
THIS PROJECT WILL PROVIDE DATA ON JURASSIC AND CRETACEOUS STRATA AND THE DEVELOPMENT OF DIAPIRIC STRUCTURES.

Ontario

1290. BRIGHAM, R.J., UNIV. OF WESTERN ONTARIO-
THE STRUCTURAL GEOLOGY OF PALAEOZOIC SEDIMENTS IN SOUTHWESTERN ONTARIO, 1964-68, PH.D. THESIS.
TREND SURFACE ANALYSIS ON THE PRECAMBRIAN SURFACE AT THE BASE OF THE PALAEOZOIC SECTION CLEARLY INDICATES THE TREND OF THE ALGONQUIN ARCH WAS CONTINUOUS WITH THE FINLAY ARCH AND HAD A GEOGRAPHIC POSITION SOUTH OF THE PRESENTLY EVIDENT ALGONQUIN ARCH. SEE TREND SURFACE ANALYSIS - A NEW LOOK AT OLD DATA, THE ONTARIO PETROLEUM INSTITUTE PROCEEDINGS, LONDON MEETING, 1967.

STRUCTURAL GEOLOGY

1291. BRISBIN, W.C., UNIV. OF MANITOBA-
A STUDY OF DEFORMATIONAL ENVIRONMENTS IN THE PRE-CAMBRIAN SHIELD, EASTERN MANITOBA, NORTHWESTERN ONTARIO, 1965-68.
AT LEAST THREE DEFORMATIONAL LARGE SUBAREAS OF THE SUPERIOR PROVINCE ARE CHARACTERIZED BY STRUCTURES HAVING DISTINCTLY DIFFERENT GEOMETRIC AND KINEMATIC PROPERTIES. DETAILED STUDIES OF THESE STRUCTURES SUGGEST THAT THE DIFFERENCES ARE A RESULT OF DIFFERENT DEFORMATIONAL ENVIRONMENTS RELATED TO THE EMPLACEMENT OF GRANITIC DIAPIRIC INTRUSIONS. PRESENT WORK IS DIRECTED TOWARDS OUTLINING THE GEOMETRY OF FOLDS AND MOVEMENTS WHICH HAVE PRODUCED THEM IN AREAS WHICH ARE BELIEVED TO REPRESENT (A) THE ROOT ZONE, (B) THE FLANK ZONE, (C) THE OVERLYING ZONE, OF THE INTRUSIVE MASSES. TREATMENT OF DATA FOR DETAILED STRUCTURAL ANALYSIS IS BEING DONE BY COMPUTER TECHNIQUES. SEE A COMPUTER ORIENTED FIELD SHEET FOR STRUCTURAL DATA, CAN. JOUR. EARTH SCI., VOL. 4, PP. 657-662, 1967.

1292. BRISBIN, W.C., WILSON, H.D.B., UNIV. OF MANITOBA-
REGIONAL STRUCTURAL STUDIES IN MANITOBA AND NORTH-WESTERN ONTARIO, 1964-69.
INVOLVES SYNTHESIS OF SURFACE GEOLOGIC, GRAVITY, DEEP AND UPPER CRUSTAL SEISMIC, AEROMAGNETIC, AND AIRPHOTO LINEAR DATA. OBJECTIVES ARE TO EXTABLISH RELATIONSHIP BETWEEN CRUSTAL STRUCTURE, COMPOSITION AND DISTRIBUTION OF GEOLOGIC FEATURES ON THE SURFACE. WORK TO DATE HAS INDICATED THAT SUBDIVISIONS OF BOTH THE CHURCHILL AND SUPERIOR PROVINCES OF THE PRECAMBRIAN SHIELD HAVE MARKEDLY DIFFERENT PETROLOGIC, METAMORPHIC AND STRUCTURAL CHARACTER AND THAT THESE SUBDIVISIONS ARE RELATED TO MAJOR FEATURES OF CRUSTAL STRUCTURE.

1293. CLIFFORD, P.M., NOSKA, C., MCMASTER UNIV.-
EVOLUTION OF KEEWATIN GREENSTONE BELTS, NORTHWESTERN ONTARIO, 1963-, PH.D. THESIS (NOSKA).

1294. FABBRI, A.G., UNIV. OF OTTAWA-
STRUCTURAL ANALYSIS OF GRENVILLE ROCKS, MADOC AREA, ONTARIO, 1967-69- PH.D. THESIS.

1295. FONG, D., WYNNE-EDWARDS, H.R., QUEEN*S UNIV.-
STRUCTURE OF THE POTSPOON LAKE SYNCLINE, FRONTENAC AXIS, ONTARIO, 1965-69, M.SC. THESIS (FONG).
SEE GEOLOGY OF TICHBORNE (EAST HALF) MAP-AREA, ONTARIO, GEOL. SURV. CAN., PAPER 64-56, 1965.

STRUCTURAL GEOLOGY

1296. HENDERSON, J.R., MCMASTER UNIV.-
STRUCTURAL ANALYSIS OF THE GRENVILLE PROVINCE-
SOUTHERN PROVINCE BOUNDARY ZONE NEAR SUDBURY, ONTARIO, 1964-68.
SEE THE GRENVILLE FRONT IN THE REGION EAST AND SOUTH OF SUDBURY, ONTARIO- IN GUIDEBOOK, GEOLOGY OF PARTS OF EASTERN ONTARIO AND WESTERN QUEBEC, ANN. MEETINGS, G.A.C. AND M.A.C., KINGSTON, 1967.

1297. HENDERSON, J.R., KWAK, T.A.P., HSU, M.Y., CLIFFORD, P.M., MCMASTER UNIV.-
STRUCTURAL AND METAMORPHIC STUDIES IN THE VICINITY OF THE GREVILLE FRONT, NEAR SUDBURY, ONTARIO, 1964-, PH.D. THESIS (KWAK), M.SC. THESIS (HSU).
SEE THE GRENVILLE FRONT IN THE REGION EAST AND SOUTH OF SUDBURY, ONTARIO, GAC GUIDEBOOK, GEOL. OF PARTS OF E. ONTARIO AND W. QUEBEC, PP. 5-9, 1967.

1298. JACOBY, W., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALIES IN THE ANSTRUTHER AREA, ONTARIO, 1967-68.
A DETAILED STUDY OF THE NEGATIVE GRAVITY ANOMALIES OVER GRANITES IN THE ANSTRUTHER AREA, ONTARIO, COMPUTER METHODS ARE BEING USED TO FORMULATE 2-D AND 3-D MODELS OF THE GRANITE BATHOLITHS.

1299. NEWSON, R., AMBROSE, J.W., QUEEN*S UNIV.-
A STRUCTURAL STUDY OF THE PERTH ROAD SYNCLINE, ONTARIO, 1967-68, M.SC. THESIS (NEWSON).
AN ATTEMPT TO RELATE THE MACROSCOPIC AND MICROSCOPIC STRUCTURAL ELEMENTS WITHIN THE REGION OF A FOLD IN THE GRENVILLE PROVINCE.

1300. PRYSLAK, A.P., UNIV. OF MANITOBA-
STRUCTURAL GEOLOGY OF THE MACNICOL AND TUSTIN TOWNSHIPS, ONTARIO, 1967-69- M.SC. THESIS.

1301. RAMACHANDRA RAO, D.S., UNIV. OF OTTAWA-
STRUCTURAL ANALYSIS OF GRENVILLE ROCKS, EAST BANCROFT AREA, ONTARIO, 1967-69- PH. D. THESIS.

1302. SMITH, J.E., LEWIS, C.F.M., GEOL. SURV. CANADA-
POST-GLACIAL CRUSTAL DEFORMATION ON MANITOULIN ISLAND, 1967-69, PH.D. THESIS (SMITH, UNIV. OF TORONTO).
A BETTER UNDERSTANDING OF LOCAL DEFORMATION OF A POST-GLACIAL GEOIDAL SURFACE IS BEING SOUGHT THROUGH A DETAILED STUDY OF EMERGED SHORELINES OF THE NIPISSING

GREAT LAKES ON MANITOULIN ISLAND. WATER-PLANE ELEVATIONS ARE INTERPRETED FROM ACCURATE MULTIPLE PROFILES OF CONSTRUCTIONAL AND EROSIONAL SHORELINE SEGMENTS OF NUMEROUS LOCATIONS AROUND THE ISLAND. TRENDS AND VARIATIONS WITHIN THE DATA WILL BE EVALUATED BY TREND SURFACE ANALYSIS. EFFECTS OF BEDROCK TOPOGRAPHY, BEACH DEPOSITIONAL PROCESSES AND POST-DEPOSITIONAL COMPACTION AND EROSION UPON BEACH MORPHOLOGY ARE BEING EVALUATED THROUGH SEISMIC SURVEYS AND RELATED STUDIES OF POST-NIPISSING AND MODERN LITTORAL ENVIRONMENTS.

1303. VAGT, G.O., UNIV. OF MANITOBA-
RELATIONSHIP OF DEFORMATION TO THE EMPLACEMENT OF IGNEOUS ROCKS IN SOUTHWESTERN ONTARIO, 1967-68-
M.SC. THESIS.

1304. VENKITASUBRAMANYAN, C.S., AMBROSE, J.W., QUEEN S UNIV.-
THE NORTH BROOK ANTICLINE NEAR MADOC, ONTARIO, 1967-68,
PH.D. THESIS (VENKITASUBRAMANYAN).
AN ATTEMPT TO UNRAVEL THE STRATIGRAPHIC AND STRUCTURAL RELATIONSHIPS OF A COMPLEX AREA IN THE GRENVILLE NORTH OF THE CLAIRE RIVER SYNCLINE.

1305. WYNNE-EDWARDS, H.R., WALLACH, J., QUEEN*S UNIV.-
STRUCTURES IN GREY GNEISS AT PARHAM, ONTARIO, 1967-69,
PH.D. THESIS (WALLACH).
THE STRUCTURE AND PETROLOGY OF A GREY GNEISS COMPLEX NEAR PARHAM IS TO BE COMPARED TO THOSE OF SURROUNDING ROCKS OF THE GRENVILLE GROUP TO ASSESS THE RELATIVE AGES OF THE TWO CATEGORIES OF ROCKS, AND TEST THE HYPOTHESIS THAT THE GREY GNEISS REPRESENTS BASEMENT. SEE GEOLOGY OF TICHBORNE (EAST HALF) MAP-AREA, ONTARIO, GEOL. SURV. CAN., PAPER 64-56, 1965.

Quebec

1306. BASSAGET, J.P., QUEBEC DEPT. OF NATURAL RESOURCES-
MANICOUAGAN CIRCULAR STRUCTURE, QUEBEC, 1 INCH TO 2 MILES, 1967-68.

1307. BELAND, J., GENTILE, F., UNIV. DE MONTREAL-
STRUCTURE ET STRATIGRAPHIE DU DOME LEMIEUX, GASPESIE, QUEBEC, 1965-68, THESE DE MAITRISSE (GENTILE).
RELATIONS D UNE MINERALISATION DE CUIVRE, PLOMB ET ZINC A UNE SERIE DE BRECHES TECTONIQUES FORMEES EN BORDURE ET A L INTERIEUR DE DOME. ORIGINE ET MODE DE FRACTURATION DU DOME.

STRUCTURAL GEOLOGY

1308. BELAND, J., ROY, D., UNIV. DE MONTREAL-
ETUDE DES DIACLASES AU POURTOUR ET A L INTERIEUR DE LA STRUCTURE CIRCULAIRE DE MANICOUAGAN, QUEBEC, 1966-68, THESE DE MAITRISSE (ROY).
DISPOSITION GEOMETRIQUES DES DIACLASES DANS LE STRUCTURE CIRCULAIRE (PLUTOT POLYGONALE) COMME INDICATION DE SON ORIGINE POSSIBLE- ASTROBLEME VERSUS GEOBLEME.

1309. CURRIE, K.L., GEOL. SURV. CANADA-
MANICOUAGAN CIRCULAR STRUCTURE, QUEBEC, 1963-.
INVESTIGATION OF CORE OF THE MANICOUAGAN-MUSHALAGAN LAKE STRUCTURE AND ITS RELATIONSHIP TO SURROUNDING LAVA PLATEAU. SEE GEOL. SURV. CAN., PAPER 67-1, P. 165, 1967.
GEOCHEMISTRY OF CANADIAN CRATERS, 1967-.

1310. GILMORE, R.G., MCGILL UNIV.-
STRATIGRAPHY OF PHILLIPSBURG THRUST SHEET, QUEBEC, 1966-69, M.SC. THESIS.

1311. KUMARAPELI, P.S., MCGILL UNIV.-
TECTONICS OF ST. LAWRENCE VALLEY REGION, QUEBEC, 1965-68, PH.D. THESIS.

1312. MARTIGNOLE, J., QUEBEC DEPT. OF NATURAL RESOURCES (PART TIME)-
MICROTECTONICS OF SHAWINIGAN AREA, QUEBEC, 1965-69, PH.D. THESIS, UNIV. OF MONTREAL.

1313. MARTIGNOLE, J., HOCQ, M., UNIV. DE MONTREAL-
ANALYSE STRUCTURALE DES SERIES CATAZONALES DE LA PROVINCE DE GRENVILLE DANS LE SUD DU QUEBEC, 1965-, THESE DE MAITRISSE (HOCQ).
VOIR TECTONIQUE, INTRUSION, ANATEXIE DANS LES SERIES CATAZONALES DE LA REGION DE SHAWINIGAN, GUIDEBOOK, GEOL. ASSOC. CANADA, PP. 87-97, 1967.

1314. MURTAUGH, J.G., QUEBEC DEPT. OF NATURAL RESOURCES-
STUDY OF CRYPTOVOLCANIC ROCKS OF THE CIRCULAR STRUCTURE BETWEEN MOUCHALAGAN AND MANICOUAGAN LAKES, QUEBEC, 1965-68, PH.D. THESIS.

1315. SHARMA, K.N.M., AMBROSE, J.W., QUEEN*S UNIV.-
A STRUCTURAL STUDY OF THE BASKATONG RESERVOIR, QUEBEC, 1966-68, PH.D. THESIS (SHARMA).

AN ATTEMPT TO APPLY PETROFABRIC TECHNIQUES TOGETHER WITH MICROSCOPIC STRUCTURAL ELEMENTS IN A STUDY OF A LARGE FOLD IN THE BASKATONG AREA.

1316. SIKANDER, A.H., UNIV. OF OTTAWA-
STRUCTURAL ANALYSIS OF THE LOWER PALAEOZOIC ROCKS OF WESTERN GASPE, QUEBEC, 1964-67- PH.D. THESIS.

1317. WILLIAMS, F.M.G., MCGILL UNIV.-
FOLDBELT, SNEGAMOOK LAKE, LABRADOR, QUEBEC, 1965-68, PH.D. THESIS.

Saskatchewan

1318. BAER, A.J., GEOL. SURV. CANADA-
ENNADAI OROGENIC BELT - FOND-DU-LAC, SASKATCHEWAN, 1966-.
STRUCTURAL STUDIES IN GNEISSIC TERRAIN. SEE GEOL. SURV. CAN., PAPER 67-1, P. 120, 1967.

1319. BYERS, A.R., UNIV. OF SASKATCHEWAN-
STRUCTURAL GEOLOGY OF SASKATCHEWAN - A CONTINUING STUDY OF VARYING ASPECTS OF THE GEOLOGY OF SASKATCHEWAN, EXPECIALLY THE PRECAMBRIAN.

1320. STAUFFER, M.R., MUKHERJEE, A.C., UNIV. OF SASKATCHEWAN-
A STRUCTURAL STUDY OF THE MISSI SEDIMENTS, FLIN FLON, SASKATCHEWAN-MANITOBA, 1967-68- M.SC. THESIS (MUKHERJEE).

1321. WALCOTT, R.I., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALY FIELD IN NORTHERN SASKATCHEWAN, 1967-68.
THE MOST STRIKING FEATURE IN THE AREA IS THE CENTRAL BELT OF UNUSUALLY INTENSE ANOMALIES BOUNDED ON THE NORTHWEST AND SOUTHEAST BY AREAS OF LOW GRAVITY RELIEF. THE WIDTH OF THE GRAVITY HIGHS AND LOWS ARE IN THE RANGE OF 40 TO 70 KILOMETERS AND INDICATE LARGE SCALE VARIATIONS IN MEAN CRUSTAL DENSITY OF THE BASEMENT ROCKS. THAT IS, THE GRAVITY MAPS SHOW A VARIATION IN CRUSTAL LITHOLOGY OF VERY GREAT WAVELENGTH, A VARIATION WHICH IS NOT INDICATED ON EXISTING SMALL SCALE GEOLOGICAL MAPS. IN DETAIL, HOWEVER, WHERE ADEQUATE LARGE SCALE GEOLOGICAL MAPPING DOES EXIST A CORRELATION BETWEEN SURFACE GEOLOGY AND GRAVITY IS INDICATED. FOR INSTANCE, NORTH OF STONY RAPIDS THE GRAVITY HIGH IS CLOSELY RELATED TO NORITES AND METAVOLCANICS OF UNUSUALLY HIGH DENSITY AND THE GRAVITY

LOW APPEARS TO BE RELATED TO ALKALINE GRANITE.

General Problems

1322. AMBROSE, J.W., QUEEN S UNIV.-
A STUDY OF SUPERTENUOUS FOLDS DEVELOPED IN STRATA OVERLYING THE PRECAMBRIAN EROSION SURFACE, 1967-. OF PARTICULAR CONCERN ARE THE FORMS OF SUPERTENUOUS FOLDS THAT ARE DEVELOPED IN THE STRATA OVERLYING THE PRECAMBRIAN, THEIR INITIAL DIPS ON THE LIMBS, AND THE CHARACTER OF THE INTERFACE.

1323. AUMENTO, F., GEOL. SURV. CANADA-
THE MID-ATLANTIC RIDGE NEAR 45 DEGREES N, 1966-70. CLOSELY SPACED ROCK DREDGING, IN CONJUNCTION WITH DETAILED BATHYMETRIC, GRAVIMETRIC AND MAGNETIC SURVEYS, ARE YIELDING A LARGE SUITE OF SPECIMENS THAT MAY APPROACH BEING REPRESENTATIVE OF AN AREA OF THE MID-ATLANTIC RIDGE. THOLEIITIC, HIGH ALUMINA, TRANSITIONAL AND ALKALI BASALTS HAVE BEEN RECOVERED AND ANALYZED. CHEMICAL DATA SHOWS CORRELATION WITH DEPTH OF EXTRUSION AND TOPOGRAPHY. CHRONOLOGICAL DATA INDICATE THAT NUMEROUS EXTRUSIVE CYCLES, IN DIFFERENT STAGES OF DEVELOPMENT, ARE CURRENTLY ACTIVE. SEE MAGMATIC EVOLUTION ON THE MID-ATLANTIC RIDGE- EARTH AND PLANETARY SCIENCE LETTERS, VOL. 2, NO. 3, PP. 225-230, 1967.

1324. AUMENTO, F., LAWRENCE, D.F., GEOL. SURV. CANADA-
MARINE GEOLOGICAL INVESTIGATIONS, NORTH ATLANTIC OCEAN, 1967-.

1325. BARRON, K., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
FRACTURE INITIATION AND ULTIMATE FAILURE OF ROCK SPECIMENS, 1966-.
TO PREDICT THE STRENGTH OF ROCK MASSES IT WILL BE NECESSARY TO TAKE INTO ACCOUNT SYSTEMATIC DISCONTINUITIES, SUCH AS JOINTS, BEDDING PLANES AND FLOW WEAKNESS. AN ATTEMPT IS BEING MADE TO SIMULATE THE EFFECTS OF SUCH ANISOTROPIC PROPERTIES BY TESTING LABORATORY SAMPLES WITH PREDETERMINED PLANES OF FAILURE. IF SUCH TESTING CONFIRMS THEORETICAL POSTULATES THAT HAVE BEEN MADE, IT IS POSSIBLE THAT THESE POSULATES WOULD THEN ALSO APPLY TO ROCK MASSES.

1326. BERTRAND, C., HAFEZ, A., UNIV. OF WESTERN ONTARIO-
A STUDY OF THE PETROFABRIC OF DEFORMED ROCKS AND OF THE CRYSTAL STRUCTURES OF DEFORMED MINERALS, 1966-68, PH.D. THESES.

CLAUDE BERTRAND IS WORKING ON A DEFORMED MASSIVE SULPHIDE OREBODY AT NORMETAL, QUEBEC. THE DEFORMATIONAL FEATURES OF THE SULPHIDES ARE BEING STUDIED IN RELATIONSHIP BOTH TO THE DEFORMATION OF THE SURROUNDING SILICATE ROCKS AND TO THE CHANGES IN METAMORPHIC GRADE. ALEYA HAFEZ IS WORKING ON A DEFORMED CONGLOMERATE FROM FUNZIE, SHETLAND ISLANDS, RELATING THE FAILURE OF THE ROCKS AND MINERALS TO THE STRAIN AS INDICATED BY THE DEFORMED PEBBLES OF THE CONGLOMERATE. SEE ON THE RELATIONSHIP OF PERICLINE AND ALBITE TWINNING TO THE COMPOSITION AND STRUCTURAL STATE OF PLAGIOCLASE FELDSPARS, SCHWEIZERISCHE MINERALOGISCHE UND PETROGRAPHISCHE MITTEILUNGEN, VOL. 47, PP. 257-268, 1967.

1327. BROWN, R.L., UNIV. OF NEW BRUNSWICK-
STRUCTURAL STUDIES IN NORTHERN APPALACHIANS, BOOTHIA PENINSULA AND MOINES OF SCOTLAND, 1964-69.
SEE STRUCTURAL DATING OF THE SILLIMANITE-GRADE METAMORPHISM OF THE MOINES IN ARDGOUR (ARGYLL) AND MOIDART (INVERNESS-SHIRE)- SCOT. J. GEOL., VOL. 1, PT. 3, PP. 304-311, 1965.

1328. BUCKINGHAM, M.J., UNIV. OF MANITOBA-
FOLD STUDIES IN EWART TOWNSHIP, ONTARIO, 1966-68- M.SC. THESIS.

1329. BURKE, K.B.S., GANTELA, C., UNIV. OF SASKATCHEWAN-
INTERPRETATION OF HUDSON BAY CRUSTAL STRUCTURE, 1966-68.
A SIMPLE PLUS-MINUS INTERPRETATION OF THE SEISMIC REFRACTION FIRST ARRIVALS HAS BEEN MADE FOR THE WEST-EAST PROFILE. THIS SHOWS A THINNING OF THE CRUST TOWARDS THE CENTRE OF THE BAY. VALUES OF THICKNESS VARY FROM 35 KM IN THE WEST, TO 32 KM IN THE CENTRE, TO 35 KM IN THE EAST, THE INTERPRETATION BEING RESTRICTED TO THE CENTRAL 300 KM OF THE WEST-EAST PROFILE. AN ALTERNATIVE INTERPRETATION OF THE DATA COULD BE A HIGHER VELOCITY CRUST TOWARDS THE CENTRE. A MORE COMPREHENSIVE INTERPRETATION INVOLVING THE SECONDARY ARRIVALS, IS NOW IN PROGRESS.

1330. CHARLESWORTH, H.A.K., BOETZKES, P.C., UNIV. OF ALBERTA-
THE ANALYSIS OF JOINTING, 1963-, M.SC. THESIS (BOETZKES).
AT THE PRESENT TIME, THE STUDY IS CONCENTRATED AROUND (1) THE MEASUREMENT OF DISPERSION OF JOINT-SETS, (2) A METHOD OF PLOTTING DATA THAT TAKES THE ROUGHNESS OF JOINTS INTO CONSIDERATION, AND (3) THE RELATIONSHIP

BETWEEN JOINTING AND THE ANISOTROPY OF MAGNETIC SUSCEPTIBILITY.

1331. CHARLESWORTH, H.A.K., ZATURECKY, J.W., UNIV. OF ALBERTA-
STRUCTURE, STRATIGRAPHY AND METAMORPHISM OF PRECAMBRIAN ROCKS IN THE CANADIAN ROCKY MOUNTAINS, 1959-,
M.SC. THESIS (ZATURECKY).
AT PRESENT THE NATURE OF THE VARIOUS TYPES OF CLEAVAGE PRESENT, THEIR RELATIONSHIP TO ASSOCIATED STRUCTURES, AND THEIR ORIGIN, ARE BEING STUDIED. SEE PRECAMBRIAN GEOLOGY OF THE JASPER REGION, ALBERTA, RES. COUN. ALBERTA, BULL. 23, 1967.

1332. CLIFFORD, P.M., MCMASTER UNIV.-
ARCHAEAN CRUSTAL DEVELOPMENT, 1966-.
SEE STRUCTURAL EVOLUTION OF A KEEWATIN GREENSTONE BELT, N.W. ONTARIO, GSA-(NE), PHILADELPHIA 1966 (ABSTRACT).

1333. COATES, D.F., PARSON, R.C., HEDLEY, D.G.F., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
CLASSIFICATION OF ROCKS, 1962-70.
SEE EXPERIMENTAL CRITERIA FOR CLASSIFICATION OF ROCK SUBSTANCES, INT. J. ROCK MED. AND MIN. SCI., VOL. 3, PP. 181-189, PERGAMON PRESS LTD. 1966.

1334. CURRIE, K.L., GEOL. SURV. CANADA-
GEOCHEMISTRY OF CANADIAN CRATERS, 1967-.

1335. DENCE, M.R., ROBERTSON, P.B., DOMINION OBSERVATORY-
SHOCK METAMORPHISM IN CANADA CRATERS, 1962-.
DEFORMATION ATTRIBUTED TO HIGH-PRESSURE SHOCK-WAVES HAS BEEN IDENTIFIED AT FIFTEEN CANADIAN CRATERS. THE SIMILARITY BETWEEN NATURAL MASKELYNITE, AN ISOTROPIC FORM OF PLAGIOCLASE, AND ARTIFICALLY SHOCKED MASKELYNITE HAS BEEN DEMONSTRATED BY OPTICAL, X-RAY AND INFRARED SPECTROSCOPIC METHODS. DIAMOND DRILLING AT SEVERAL CRATERS HAS SHOWN A SYSTEMATIC DECREASE IN THIS DEFORMATION WITH DEPTH, CORROBORATING AN ORIGIN BY HYPERVELOCITY METEORITE IMPACT. SEE NASA CONFERENCE ON SHOCK METAMORPHISM OF NATURAL MATERIALS, 1967 (IN PRESS).

1336. DENCE, M.R., ROBERTSON, P.B., INNES, M.J.S., HALLIDAY, K., GRIFFIN, A.A., DOMINION OBSERVATORY-
GEOLOGICAL AND GEOPHYSICAL STUDIES OF CANADIAN CRATERS, 1953-.

THE CONTINUING SEARCH FOR POSSIBLE ANCIENT METEORITE CRATERS IN CANADA HAS LED TO THE INVESTIGATION OF 6 CRATERS BY DIAMOND DRILLING, 12 BY GRAVITY SURVEYS, 8 BY MAGNETIC AND 6 BY SEISMIC METHODS. RECENT WORK HAS BEEN LARGELY CONCERNED WITH THE BRENT, DEEP BAY, WEST HAWK LAKE, LAC COUTURE, PILOT LAKE, NICHOLSON LAKE AND LA MALBAIE CRATERS WITH FURTHER ANALYSIS OF DATA FROM THE NEW QUEBEC, CLEARWATER LAKE, CARSWELL AND MANICOUAGAN CRATERS ALSO IN PROGRESS. SEE CONTR. DOM. OBS., VOL. 31, NO. 10 AND NASA SYMPOSIUM ON SHOCK METAMORPHISM OF NATURAL MATERIALS, 1967 (IN PRESS).

1337. FYSON, W.K., UNIV. OF OTTAWA-
RELATIONSHIP OF MINOR TO MAJOR STRUCTURES IN THE MARITIME PROVINCES, 1962-.
SEE GRAVITY SLIDING AND CROSS FOLDING IN CARBONIFEROUS ROCKS, NOVA SCOTIA- AM. JOUR. SCI., VOL. 265, PP. 1-11.

1338. GRETENER, P.E., UNIV. OF CALGARY-
MECHANISM OF INTRUSION OF SILLS, 1966-.

1339. GIBB, R.A., DOMINION OBSERVATORY-
INTERPRETATION OF GRAVITY ANOMALIES IN NORTHERN MANITOBA, 1965-67.
DENSITY DETERMINATIONS OF SOME 2,000 PRECAMBRIAN ROCK SAMPLES PROVIDE A SOUND BASIS FOR INTERPRETATION OF THE BOUGUER ANOMALIES IN TERMS OF RELATIVELY NEAR-SURFACE MASS DISTRIBUTIONS IN THE UPPER CRUST. IN SOME PARTS OF THE AREA THERE IS EXCELLENT CORRELATION BETWEEN THE SURFACE ROCKS, THEIR DENSITIES, AND THE BOUGUER ANOMALIES. THE NELSON RIVER GRAVITY HIGH OUTLINES A BELT OF DENSE GRANULITES. TO THE NORTHWEST THREE GRAVITY LOWS ARE INTERPRETED AS THE GRAVITY EFFECTS OF THREE GRANITIC INTRUSIONS OF WHICH ONE IS LARGELY EXPOSED AT SPLIT LAKE AND THE OTHERS ARE LARGELY BURIED ALTHOUGH THEIR PRESENCE IS SUPPORTED BY THE OCCURRENCE OF NUMEROUS MAPPABLE STOCKS OF INTRUSIVE GRANITE WITHIN THE GRAVITY LOWS. THE NELSON RIVER HIGH IS SEPARATED FROM THESE LOWS BY A STEEP GRAVITY GRADIENT WHICH MARKS A BOUNDARY BETWEEN ROCKS OF PREDOMINANTLY DIFFERENT AGES (HUDSONIAN AND KENORAN) BETWEEN LATITUDES 54 DEGREES AND 56 DEGREES N. THE GRAVITY ANOMALIES, AGE DETERMINATIONS, AND GEOLOGY ARE CONSISTENT WITH AN INTERPRETATION OF THE PIKWITONEI SUBPROVINCE AS IN INLIER OF KENORAN AGE WITHIN THE CHURCHILL PROVINCE. THE MAIN CHURCHILL-SUPERIOR BOUNDARY MAY THEN BE MOVED SOUTH TO WHAT IS AT PRESENT THE SOUTHERN LIMIT OF THE CROSS LAKE SUBPROVINCE,

WHICH IS A RETURN TO APPROXIMATELY THE POSITION ORIGINALLY SELECTED BY M.E. WILSON. SEE THE DENSITIES OF PRECAMBRIAN ROCKS FROM NORTHERN MANITOBA, CAN. J. EARTH SCI., 1967 (IN PRESS).

1340. GRAY, W.M., TOEWS, N.A., MINES BRANCH, DEPT. OF ENERGY, MINES AND RESOURCES-
GROUND CONTROL ANALYTICAL AND NUMERICAL STUDIES RELATING TO STRESS MOVEMENT, 1966-.
SEE ANALYSIS OF ACCURACY IN THE DETERMINATION OF THE GROUND STRESS TENSOR BY MEANS OF BOREHOLE DEVICES, PROCEEDINGS OF NINTH ROCK MECHANICS SYMPOSIUM, GOLDEN, COLORADO, APRIL 1967 (IN PRESS).

1341. HAJNAL, Z., HALL, D.H., UNIV. OF MANITOBA-
DETAILED STUDY OF CONRAD DISCONTINUITY AND DEEP FAULTS IN THE PROJECT PIONEER AREA, EASTERN MANITOBA, 1967-69.
A CONTINUOUS SEISMIC REFRACTION AND WIDE-ANGLE REFLECTION SURVEY IS BEING CONDUCTED OVER A 60-MILE LINE IN AN ATTEMPT TO OBTAIN CONTINUOUS INFORMATION ON SEISMIC DISCONTINUITIES IN THE CRUST IN THE AREA OF **PROJECT PIONEER**. DATA ENHANCEMENT USING DIGITAL TECHNIQUES IS BEING EMPLOYED.

1342. HORNAL, R.W., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALIES IN THE BEAR AND SLAVE GEOLOGICAL PROVINCES, NORTHWEST TERRITORIES, 1966-68.
A STUDY OF THE REGIONAL GRAVITY SURVEY FROM GREAT SLAVE LAKE TO VICTORIA ISLAND AND FROM DUBAWNT LAKE TO GREAT BEAR LAKE IS IN PROGRESS. THE ANOMALIES CORRELATE WELL WITH STRUCTURAL TRENDS AND GEOLOGICAL FORMATIONS. A LARGE POSITIVE GRAVITY ANOMALY NORTH OF COPPERMINE IS DUE TO LATE PROTEROZOIC FLOOD BASALTS WHICH UNDERLIE PALAEOZOIC ROCKS EXCEPT IN THE AREAS OF THE MINTO ARCH AND THE COPPERMINE RIVER WHERE UP TO FOUR KILOMETRES OF BASALT ARE EXPOSED. A BELT OF POSITIVE ANOMALY PARALLELS THE ROCKS OF THE SNARE GROUP FROM GREAT SLAVE LAKE TO GREAT BEAR LAKE AND MAY REPRESENT BASIC INTRUSIONS ALONG THE GEOSYNCLINE. A GRAVITY HIGH OVER THE EAST ARM OF GREAT SLAVE LAKE MAY BE RELATED TO BASIC SILLS AND DYKES INTRUDING THE ROCKS OF THE GREAT SLAVE AND ET-THEN GROUPS. A STEEP GRAVITY GRADIENT BETWEEN MASSIVE GRANITE OF ARCHAEAN AGE AND GNEISSES OF PROTEROZOIC AGE MARKS THE BOUNDARY OF THE CHURCHILL AND SLAVE GEOLOGICAL PROVINCES BETWEEN ARTILLERY LAKE AND THE BACK RIVER. SEE THE GRAVITY ANOMALY FIELD IN THE COPPERMINE AREA, N.W.T., GRAVITY MAP SERIES, DOM. OBS. MAP NO. 45 (IN PRESS).

STRUCTURAL GEOLOGY

1343. INNES, M.J.S., GOODACRE, A.K., DOMINION OBSERVATORY-
INTERPRETATION OF GRAVITY ANOMALIES OVER LAKE SUPERIOR AND SURROUNDING AREAS, 1967.

GRAVITY SURVEYS HAVE OUTLINED LARGE AREAS OF RELATIVELY POSITIVE BOUGUER ANOMALIES IN LAKE SUPERIOR AND IN A ZONE EXTENDING 600 KM NORTH FROM CHAPLEAU THROUGH KAPUSKASING TO MOOSONEE ON JAMES BAY. THE ANOMALOUS AREAS REFLECT LARGE QUANTITIES OF BASIC MATERIAL THAT HAVE BEEN EMPLACED HIGH WITHIN THE CRUSTAL COLUMN, PERHAPS THROUGH A PROCESS OF CRUSTAL RIFTING. GEOLOGICAL AND GEOPHYSICAL MAPPING BY PROVINCIAL AND FEDERAL GOVERNMENT DEPARTMENTS HAVE DEFINED A NORTH TO NORTHEAST TRENDING ZONE OF SHEARING AND FAULTING WITH ASSOCIATED LINEAR MAGNETIC ANOMALIES. THIS FAULT ZONE, AND THE GRAVITY AND MAGNETIC ANOMALY BELTS CUT DIRECTLY ACROSS REGIONAL TRENDS OF EARLY PRECAMBRIAN ROCKS. UPLIFTED BLOCKS OF HIGH-GRADE METAMORPHIC ROCKS, MINOR BASIC AND ULTRABASIC INTRUSIONS, AND THE PRESENCE OF ALKALINE INTRUSIVE COMPLEXES TOGETHER WITH THE DISAPPEARANCE OF THE ARCHAEAN VOLCANIC-SEDIMENTARY ROCKS ALONG THE AXIS OF THE GRAVITY HIGH SUGGEST THAT THE KAPUSKASING FAULT MAY BE A DEEPLY-ERODED COUNTERPART OF AN EAST AFRICAN RIFT VALLEY. GRAVITY AND MAGNETIC ANOMALY PATTERNS OVER THE MICHIGAN BASIN SUGGEST A POSSIBLE EXTENSION OF THIS STRUCTURE TO THE SOUTH. SEE GRAVITY ANOMALIES OVER LAKE SUPERIOR AND SURROUNDING AREAS AND THEIR STRUCTURAL IMPLICATIONS, ANNUAL MEETING, 1967, INSTITUTE ON LAKE SUPERIOR GEOLOGY, MICHIGAN STATE UNIVERSITY (ABSTRACT).

1344. INNES, M.J.S., GOODACRE, A.K., WEBER, J.R., MCCONNELL, R.K., DOMINION OBSERVATORY-
INTERPRETATION OF THE GRAVITY ANOMALIES IN HUDSON BAY, 1965-67.

ANALYSIS OF ANOMALY PROFILES CROSSING HUDSON BAY USING SEISMIC DATA FOR CONTROL, SHOWS THAT PALAEOZOIC AND RECENT SEDIMENTS HAVE LITTLE OVERALL EFFECT ON THE GRAVITY FIELD AND THAT VARIATIONS IN DEPTH TO THE CRUST-MANTLE BOUNDARY HAVE LITTLE OR NO CORRESPONDENCE WITH VARIATIONS IN THE GRAVITY FIELD. IT IS BELIEVED THAT THE GRAVITY VARIATIONS ARE DUE LARGELY TO SYSTEMATIC DENSITY DIFFERENCES IN THE PRECAMBRIAN BASEMENT ROCKS. AN IMPORTANT CONCLUSION IS THAT THE GRAVITY FIELD IN THE NORTHERN PART OF HUDSON BAY MARKS A MAJOR CHANGE IN STRUCTURE AND THAT THE CHURCHILL CRUSTAL BLOCK DOES NOT EXTEND UNINTERRUPTEDLY EASTWARD. IT IS SUGGESTED THAT POSITIVE ANOMALIES REFLECT HIGH-DENSITY GNEISS OR BASIC VOLCANIC ROCKS UNDERLYING THE SEDIMENTARY VENEER. EVIDENCE IS PRESENTED WHICH STRENGTHENS THE HYPOTHESIS THAT THE KAPUSKASING GRAVITY ANOMALY AND ITS NORTHERN AND SOUTHERN EXTEN-

SIONS MARK AN ANCIENT ZONE OF CRUSTAL RIFTING OF CONTINENTAL PROPORTION. SEE STRUCTURAL IMPLICATIONS OF THE GRAVITY FIELD IN HUDSON BAY AND VICINITY, CAN. J. EARTH SCI., 1967 (IN PRESS).

1345. JONES, G.H.S., DIEHL, C.H.H., AND SUPPORTING STAFF, DEFENCE RESEARCH BOARD, DEPT. NATIONAL DEFENCE-
MORPHOLOGY OF CRATERS AND MECHANICS OF CRATERING, 1958-.

THE STUDY OF CRATERS AT DEFENCE RESEARCH ESTABLISHMENT, SUFFIELD STARTED AS A PRAGMATIC STUDY AIMED AT ELUCIDATING CRATER SCALING LAWS IN ORDER TO PROVIDE PLANNING DATA FOR LARGE SCALE TRIALS. WITH THE DEVELOPMENT OF A VARIETY OF NEW TECHNIQUES FOR STUDYING THE SUBSURFACE DEFORMATIONS ASSOCIATED WITH CRATERS, THIS STUDY EXPANDED TO INCLUDE MORE BASIC INVESTIGATIONS OF CRATER MORPHOLOGY.

A GREAT INCREASE IN INTEREST AND IMPORTANCE AROSE WHEN IT WAS FOUND THAT THE CRATERS PRODUCED WITH CHARGES OF MORE THAN A FEW TONS OF TNT DEVELOPED CENTRAL UPLIFT STRUCTURES. THIS BECAME MOST PRONOUNCED WITH THE 500 TON (SNOWBALL) CRATER WHICH DUPLICATED MANY FEATURES COMMON TO ASTROBLEMES BUT NOT PREVIOUSLY FOUND IN ASSOCIATION WITH EXPERIMENTALLY PRODUCED CRATERS. SINCE THE FORMATION OF THE SNOWBALL CRATER IN 1964 MUCH EFFORT HAS BEEN DEVOTED TO A DETAILED STUDY OF ITS MORPHOLOGY, AND SUBSEQUENTLY SEVERAL ADDITIONAL CRATERS HAVE BEEN PRODUCED WITH CENTRAL UPLIFTS, SOME OF WHICH CONTAIN ADDITIONAL FEATURES NOT NOTED ON SNOWBALL. THIS WORK IS CONTINUING WITH THE SUPPORT OF U.S. AGENCIES (AND FUNDING) AND IN ASSOCIATION WITH THE DOMINION OBSERVATORY AND THE USGS BRANCH OF ASTROGEOLOGIC STUDIES. SEE THE SNOWBALL CRATER - GENERAL INFORMATION AND BACKGROUND, SUFFIELD TECHNICAL NOTE NO. 187.

1346. KERR, J.WM., GEOL. SURV. CANADA-
STUDIES OF CONTINENTAL DRIFT, 1965-.

SEE NARES SUBMARINE RIFT VALLEY AND THE RELATIVE ROTATION OF NORTH GREENLAND, BULL. CAN. PETROL. GEOL., VOL. 15, NO. 4, 1967.

1347. KING, M.S., UNIV. OF SASKATCHEWAN-
STATIC AND DYNAMIC ELASTIC PROPERTIES OF ROCKS, 1967-71.

IT IS PROPOSED TO RECONCILE THE RESULTS OBTAINED TESTING ROCK SAMPLES UNDER STATIC AND DYNAMIC CONDITIONS. THE VELOCITIES ARE MEASURED SIMULTANEOUSLY ON A SINGLE ROCK SAMPLE SUBJECTED TO CHANGES IN TRIAXIAL LOADING CONDITIONS AND CHANGES IN TEMPERATURE. THE

LABORATORY PROGRAMME WILL BE EXTENDED TO A COMPARISON OF RESULTS OBTAINED FROM STATIC AND DYNAMIC TESTS UNDERGROUND. THE RESULTS OF THIS RESEARCH WILL LEAD TO A BETTER UNDERSTANDING OF THE MECHANISMS OF ROCK DEFORMATION, AND TO THE DEVELOPMENT OF ACOUSTIC TECHNIQUES FOR DETERMINING THE STATE OF STRESS UNDERGROUND.
MECHANICAL STATE OF ROCK APPROACHING FAILURE, 1967-72.
IT IS PROPOSED TO DETERMINE THE DOMINANT FREQUENCIES AND RELATIVE AMPLITUDES OF MICROSEISMIC **NOISE** AT FREQUENCIES AND RELATIVE ULTRASONIC RANGES PRODUCED BY A ROCK AS IT APPROACHES FAILURE. IT IS ANTICIPATED THAT THIS RESEARCH WILL LEAD TO A METHOD FOR PREDICTING FAILURE.

1348. KING, M.S., ACAR, K.Z., UNIV. OF SASKATCHEWAN-
RHEOLOGICAL PROPERTIES OF PRAIRIE EVAPORITES AT ELEVATED TEMPERATURES, 1967-69- M.SC. THESIS (ACAR).
IT IS PROPOSED TO DETERMINE THE LONG-TERM CREEP PROPERTIES OF SASKATCHEWAN POTASH ORE AND HALITE AT THE ELEVATED TEMPERATURES TO BE EXPECTED AT DEPTHS GREATER THAN THOSE BEING MINED TODAY. RESULTS OF RESEARCH TO DATE ON THE EFFECTS OF AN INCREASE IN TEMPERATURE ON THE CREEP PROPERTIES OF THE EVAPORITES ARE MEAGRE AND CONFLICTING. THE RESULTS OF THIS RESEARCH SHOULD CLARIFY THE SITUATION.

1349. KORNIK, L.J., GEOL. SURV. CANADA-
REGIONAL STRUCTURAL STUDY OF A PORTION OF THE CHURCHILL PROVINCE, 1965-68.
INVOLVES THE EXAMINATION OF MAGNETIC, SEISMIC AND GRAVITY DATA AND THE DEGREE OF METAMORPHISM OVER A BROAD AREA TO DETERMINE THE STRUCTURAL SETTING. GEOLOGIC-AEROMAGNETIC CORRELATION WAS CHECKED BY MEASURING IN SITU MAGNETIC SUSCEPTIBILITIES AND REMANENT MAGNETISM.

1350. LAJTAI, E.Z., UNIV. OF NEW BRUNSWICK-
THE SHEAR STRENGTH OF ROCK DISCONTINUITIES, 1967.
OTHER INVESTIGATIONS IN PROGRESS OR PLANNED INCLUDE BRITTLE FRACTURE IN DIRECT SHEAR- ROCK STRENGTH IN A TRULY TRIAXIAL STATE OF STRESS- THE ORIGIN AND SIGNIFICANCE OF TENSION GASHES ASSOCIATED WITH FAULTS.

1351. NAUSS, A.W., DIATONIC RESEARCH LTD., CALGARY-
EFFECT OF PRESSURE CHANGES CAUSED BY EROSION AND SEDIMENTATION ON THE NATURE AND DISTRIBUTION OF TECTONIC ACTIVITY.

STRUCTURAL GEOLOGY

1352. NORRIS, D.K., GEOL. SURV. CANADA-
MESOSCOPIC STRUCTURAL FABRICS IN THE EAST-CENTRAL CORDILLERA, 1964-.
AN ANALYSIS OF THE SIGNIFICANCE OF STATISTICALLY MEANINGFUL SAMPLES OF MESOSCOPIC FABRIC DATA, PRIMARILY FROM UNDERGROUND COAL MINES, IN RELATION TO REGIONAL AND LOCAL STRUCTURE. SEE THE MESOSCOPIC FABRIC OF ROCK MASSES ABOUT SOME CANADIAN COAL MINES, PROC. FIRST CONGRESS, INT. SOC. ROCK MECHANICS, VOL. 1, PP. 191-198.
STRUCTURAL PROTOTYPES IN CANADA, 1964-.
A KINEMATIC AND DYNAMIC ANALYSIS OF HOMOCLINES, FAULTS AND FOLDS IN CANADA AND U.S.A., IN ORDER TO EXPLAIN THEIR DEFORMATIONAL CHARACTERISTICS. SEE STRUCTURAL ANALYSIS OF THE QUEENSWAY FOLDS, OTTAWA, CANADA, CAN. JOUR. EARTH SCIENCES, VOL. 4, PP. 229-321, 1967.

1353. NORRIS, D.K., GEOL. SURV. CANADA, AND BARRON, K., MINES BRANCH, DEPT. ENERGY, MINES AND RESOURCES-
THE MECHANICS OF FAULTING, 1967-68.
THROUGH FIELD AND LABORATORY STUDIES TO FORMULATE DEFINITIVE CRITERIA FOR ASSESSING THE DIRECTION AND SENSE OF RELATIVE SLIP ON NATURALLY OCCURRING FAULT SURFACES.

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STRUCTURE OF THE SEDIMENTARY ROCKS OF THE INTERIOR PLAINS OF WESTERN CANADA, 1965-68, PH.D. THESIS (ROBINSON).
THE STRUCTURE OF THE SEDIMENTARY ROCKS IS BEING INVESTIGATED USING TWO DIMENSIONAL HARMONIC ANALYSIS. SEE SPATIAL FILTERING OF STRUCTURAL CONTOUR MAPS, INTERNAT. GEOL. CONG., PRAGUE, 1968 (IN PRESS).

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TO DETERMINE IF CONSPICUOUS HORNBLENDE LINEATIONS CAN SERVE AS INDICATORS OF DIRECTIONS AND RELATIVE MAGNITUDES OF MESOSCOPIC FINITE STRAIN. ROCKS FROM THREE AREAS HAVE BEEN STUDIED- (1) HELLANDSJOEEN, CLOSE TO TRONTHEIM, NORWAY, (II) TROUT LAKE AREA, LAC RA RONGE MAP SHEET, SASKATCHEWAN, (III) CHANDOS LAKE, ONTARIO. SEE PREFERRED ORIENTATION OF HORNBLENDE IN A BANDED HORNBLENDE GNEISS, AMER. JOUR. SCIENCE, VOL. 262, PP. 1212-1229, 1964.

STRUCTURAL GEOLOGY

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A STUDY OF RECENT VOLCANIC CENTRES IN BRITISH COLUMBIA AND THEIR RELATION TO REGIONAL TECTONICS. SEE GEOL. SURV. CAN., PAPER 67-1, P. 89.

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FOLD GEOMETRY, 1966-.
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OUTLINE OF THE HISTORICAL GEOLOGY OF NORTH AMERICA IN TERMS OF RECURRENT CONTINENTAL DRIFT, 1965-.
NOW THAT CONTINENTAL DRIFT IS BECOMING WIDELY ACCEPTED IT IS IMPORTANT TO DETERMINE ITS IMPLICATIONS. AN ATTEMPT IS BEING MADE TO REWRITE AN OUTLINE GEOLOGICAL HISTORY OF NORTH AMERICA IN TERMS OF DRIFT. IT SEEMS LIKELY THAT NOT ONLY HAS THE ATLANTIC OCEAN CLOSED AND REOPENED BUT THAT THE CARIBBEAN AND ARCTIC SEAS HAVE ALSO CLOSED AND REOPENED AT TIMES WHICH CAN BE DETERMINED. AS R. MELVILLE HAS SUGGESTED IT SEEMS LIKELY THAT THE WESTERN PART OF THE CORDILLERA IS A NEW ADDITION TO NORTH AMERICA AND THAT THE OMINECA GEANTICLINE AND ANTLER OROGENY MARK UPLIFTS EAST OF THE JUNCTION. SEE SOME IMPLICATIONS OF NEW IDEAS ON OCEAN-FLOOR SPREADING UPON THE GEOLOGY OF THE APPALACHIANS, ROY. SOC. CAN., SPEC. PUB. 10, PP. 93-99, 1967 AND THE MOUNTAIN BUILDING CYCLE AND ITS APPLICATION TO THE CORDILLERA, AMER. GEOPHY. UNIV., ANNUAL MEETING, 1958 (ABSTRACT).

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AUTHOR INDEX

Aarden, D. 662
Abbey, S. 166
Acar, K.Z. 1348
Acham, P. 1207
Agterberg, F.P. 130, 566
Ahmad, G. 551
Ahmed, S.M. 167
Ahmedali, S.T. 811
Ahrens, R.H. 342
Aitken, J.D. 49, 1150, 1172
Allard, G.O. 97
Allen, D.G. 441
Ambrose, J.W. 451, 1259, 1268, 1299, 1304, 1315, 1322
Amos, J.S. 784
Amukun, S.E. 568
Anderson, C.D. 24, 339
Anderson, D.T. 25, 446
Anderson, F.D. 33
Anderson, G.M. 169, 170
Anderson, M.M. 691
Andrieux, P. 340
Anglin, F. 418
Appleyard, E.C. 625, 789
Armstrong, C.W. 657
Arnold, R.G. 244, 470, 479, 569
Arthur, J.C.L. 1274
Atkins, F.B. 278
Aumento, F. 571
Ayres, L.D. 66
Azzaria, L.M. 171

Baadsgaard, H. 173, 174, 210, 297, 298
Babet, P.H. 524
Baer, A.J. 19, 119
Bailes, A.H. 572
Baker, P.E. 278
Baker, R.C. 386
Baleshta, T.M. 670
Balkwill, H.R. 49, 1265
Bamber, E.W. 1095, 1175, 1176, 1177
Bannatyne, B.B. 525
Banner, J.A. 1016
Baragar, W.R.A. 787, 790
Barnes, C.R. 692, 693, 694, 695, 1151
Barouch, M. 961
Barr, K.G. 402, 1286
Barron, K. 145, 146, 1353
Barron, L. 58
Barrett, V.A. 627
Bartlett, G. 539
Barton, J.M. 300, 817
Barua, M.C. 501
Baruah, K.C. 1053
Basham, P.W. 418
Bassaget, J.P. 98
Bayliss, P. 1046
Bayrock, L.A. 889, 890, 908
Beales, F. 442
Beards, R. 1169
Beaton, W.D. 175
Becker, A. 341
Beck, L.S. 502, 526
Beerbower, J.R. 176, 696, 1048, 1050
Beland, J. 1307, 1308
Bell, C.K. 26, 403
Bell, J.B. 278
Bell, K.W. 1275
Bell, R.T. 50
Belyea, H.R. (Miss) 1178, 1179
Bennett, G. 67, 68, 69
Benson, D.G. 47
Berg, T.E. 890, 891
Berger, A.R. 776
Berkhout, A.W.J. 349, 350, 368
Berry, C. 1169
Berry, L.G. 628, 639, 641, 647
Berry, M.J. 402, 405, 1286
Berti, A.A. 954
Bertrand, C. 1326
Bhattacharyya, B.K. 379, 380, 381
Bhatia, D.M.S. 495
Bidgood, D.E.T. 351, 404, 424, 1284
Bielenstein, H.V. 1258, 1259
Bihl, G. 697
Binda, P. 1052
Bishop, D. 445
Blackburn, C.B. 843
Blackwell, J.M. 151, 933
Blais, R.A. 446, 447, 448, 449, 489, 490, 507
Blake, W. Jr. 947

Blanchard, J.E. 424
Blattner, P. 767
Blecha, M. 450
Blusson, S.L 57
Boetzkes, P.C. 1330
Bolton, T.E. 699, 1152, 1238
Bone, M.N. 405
Bostock, H.H. 27, 29, 51
Botham, J.C. 562
Bourne, J. 887
Bower, D.R. 352
Bower, F. 268
Bower, M.E. 386
Bowman, W.S. 177
Boyd, J.B. 353
Boyle, R.W. 201, 487
Bozozuk, M. 1005
Brabec, D. 195
Braun, W.K. 1131, 1180, 1208
Bray, R.G. 696, 700
Bright, E.G. 71
Bright, N.F.H. 177, 228, 235, 264
Brigham, R.J. 1290
Brisbin, W.C. 31, 32, 354, 1276, 1277
Broad, D.S. 711
Brooke, M.M. (Miss) 1208
Broscoe, A.J. 319, 320, 321
Brown, A. 451
Brown, J. 406
Brown, G.M. 256
Brown, R.J. 355
Brown, R.J.E. 1006
Brown, R.L. 1327
Brueckner, W.D. 38
Buck, R.J. 356
Buckingham, M.J. 1328
Burk, C.F. Jr. 552, 1209
Burk, K.B.S. 407, 409, 425, 1008, 1009, 1329
Burley, B.J. 178, 629, 630
Burn, K.N. 1005
Burwash, R.A. 301
Burwasser, G.J. 1027
Butler, J. 538
Butterill, J.W. 676
Byers, A.R. 479, 930, 1319

Cabri, L.J. 179
Caldwell, W.G.E. 701, 1053, 1210
Caley, W. 872
Cameron, A.R. 564
Cameron, E.M. 180
Campbell, F.E. 254
Campbell, F.H.A. 1055
Campbell, R.B. 6, 22
Card, K.D. 72, 213, 791
Carlson, V.A. 892, 893, 904
Carmichael, D.M. 73
Carr, J.M. 7
Carr, P.A. 941
Carrigy, M.A. 1, 553, 1056
Carroll, R.L. 702
Carson, J. 400
Carter, J.C. 964
Carter, N.C. 302, 453
Cartier, G. 554
Chagnon, J.Y. 150, 528, 983
Chakrabarti, A.K. 120
Chambers, M.J. 894
Chamberlain, J.A. 454
Chamney, L. 951
Chamney, T.P. 703
Champ, W.H. 181, 182
Chandler, F.W. 1143
Charbonnier, R.P. 555
Charron, J.E. 942
Charbonneau, B. 382
Charlesworth, H.A.K. 1330, 1331, 1354
Chatterjee, A.K. 602
Chen, S.S.M. 629
Chen, T. 183
Chiang, K.K. 704
Chown, E.H. 100
Christiansen, E.A. 992
Chrismas, L. 298, 461
Christie, R.L. 1144, 1145
Chrzanowski, N. 585
Church, D.K. 185
Church, W.R. 39, 184, 203, 792, 845, 1058
Churcher, C.S. 705, 913
Chyi, L.L. 573
Cimon, J. 640
Clack, W.J. 1059
Clark, A.H. 187, 303, 322, 441, 455, 456, 467, 509, 574
Clark, G.S. 304
Clark, L.A. 457
Clark, W.B. 193
Clayton, G.L. 931
Clifford, P.M. 1293, 1297, 1332, 1358

Clissold, R.J. 319, 895
Coakley, J.P. 1060
Coates, D.F. 146, 151
Coates, J.A. 8, 1212
Cobban, W.A. 1220
Cockburn, G. 40
Coleman, L.C. 121
Collett, L.S. 342, 343
Colwell, J.M. 719
Cook, D.G. 49, 1267, 1268
Cooper, R.V. 361, 362, 370
Cooper, G.E. 41
Copeland, M.J. 706, 707
Copper, P. 708
Cormier, R.F. 305
Corneil, B. 1061
Costello, R. 1103
Courville, S. 234
Cox, R.L. 709
Craig, B.G. 27, 29, 1011
Crawford, C.B. 1005
Crerar, D.A. 169
Crocket, J.H. 185, 222, 248, 251, 515, 573, 575
Cross, C. 209
Crowell, G.D. 1063
Cumming, G.L. 298, 460
Cumming, L.M. 27, 29, 1153
Currie, D.V. 896
Currie, K.L. 794, 1309, 1334
Currie, L.J. 556

Danner, W.R. 1064, 1182
Darling, R. 458
Darnley, A.G. 399
Dastidar, P.G. 191
David, M. 446
David, P.P. 1012
Davidson, A. 54
Davies, J.C. 74
Davies, J.L. 1154
Davies, R. 583, 815
Davis, N. 386
De Carle, A.L. 1163
De La Cruz, N.N. 297
De Romer, H.S. 101
De Rosen, A. (Miss) 447
Dean, R.S. 529, 656
Deere, R. 1046
Delaeter, J. 193
Delavault, R.E. 194, 195
Delancey, P. 530
Delorme, L.D. 1013
Dence, M.R. 427, 428
Desaureault, R. 979, 983
Descarreaux, J. 816
Diehl, C.H.H. 1345
Dimroth, E. 102
Dineley, D.L. 55, 710, 711, 1065
Dixon, O.A. 712, 1240
Doig, R. 307, 817, 818
Donaldson, J.A. 656, 1147
Donaldson, J.R. 564
Dorr, A. 491
Douglas, J.A.V. 198
Drapeau, G. 1067
Draper, R.G. 555, 557
Dreimanis, A. 713, 954, 1014
Dube, J.C. 980, 990
Duckworth, P. 971
Dugas, J. 578
Dumesnil, J.C. 260
Dunn, D.E. 897
Duquette, G. 103
Duthie, H.C. 964
Dyck, J.H. 344, 431
Dyck, W. 200, 201

Eade, K.E. 854
Eastwood, G.E.P. 581
Eckstrand, N.L. 582
Eden, W.J. 1005
Edgar, A.D. 203, 204, 631, 657, 853
Edmund, G.A. 714
Elliott, T.M. 7
Ellison, A.H. 20
Elson, J.A. 324, 1015
Emslie, R.F. 777

Fabbri, A.G. 1294
Fahraeus, L.E. 715
Fahrig, W.F. 288, 854
Farrar, E. 308, 509, 608
Farvolden, R.N. 955
Fawcett, J.J. 207, 632, 858, 873
Faye, G.H. 658
Feenstra, B.H. 954
Felsher, M. 1103
Ferguson, L. 716, 1068
Ferguson, R.B. 633, 649
Ferguson, S.A. 510
Fernando, C.H. 964
Ferrigno, K. 717
Finlayson, G.B. 1008

Fischbuch, N.R. 701
Fisher, D.F. 465, 492
Fitzpatrick, M.M. 350, 371, 429, 959
Fleet, M.E. 400, 659
Fleischer, F.C. 961, 972
Fleming, J. 538
Fleming, J.M. 781
Fletcher, C.J.N. 809
Fletcher, W.K. 209
Fligg, E.K. 961
Folinsbee, R.E. 210, 298, 460, 461, 857
Fong, D. 1295
Forester, R. 58
Forsyth, D. 1069
Forsythe, L.H. 122
Fortescue, J.A.C. 227
Fortin, N. 507
Fou, T.J. 377
Fowler, J. 549
Fox, R.C. 718, 719
Frarey, M.J. 75
Fraser, J.A. 56
Frebold, H. 1213
Frechette, J.G. 987
Freeze, R.A. 1016
Frenkel, O.J. 211
Freund, H.H. 771
Friedlaender, C.G.L. 243, 514, 785
Frisch, T. 1145
Frison, E.H. 701
Fritz, W.H. 703, 1172
Fritz, P. 460, 857
Froese, E. 767, 768
Fryer, B.J. 311
Fuh, T-M. 296
Fulton, R.J. 325, 923, 1070
Fyles, J.T. 9
Fyson, W.K. 1269, 1337

Gabe, E.J. 660, 661
Gabert, G.M. 898
Gabrielse, H. 57
Gadd, N.R. 943
Gale, G.H. 580
Gantela, C. 409, 1329
Garrison, R.E. 1071, 1114
Gees, R.A. 1072
Geiger, K.W. 893, 899, 905
Geldsetzer, H. 1073
Geller, L. 165
Gendzwill, D.J. 357, 425, 430, 431
Gentile, F. 448, 1307
George, P.T. 590
Geul, J.J.C. 76
Ghent, E.D. 764
Gibb, F.G.F 858
Gibb, R.A. 358, 359, 360
Gibbons, R.V. 782
Gibbs, G.W. 531
Giblin, P.E. 77
Gibson, D.W. 1242
Giguere, J.F. 68, 78
Giles, P.S. 532
Gill, J.E. 583
Gilliland, J.A. 138
Gillespie, D.I. 213
Gilmore, R.G. 1243
Girard, P. 463
Gittins, J. 214, 309, 533, 662, 795, 796
Glen, W.E. 959
Globensky, Y. 1155
Godby, E.A. 386
Godfrey, J.D. 2
Golding, D.L. 900
Gomes, R.A.D. 215
Goodman, R.H. 216, 661
Goodacre, A.K. 361, 362, 364, 365
Gopalaswamy, T.K.N. 1075
Gordon, A.J. 1244
Gordon, T.M. 217, 219
Gorman, W.A. 981, 1019
Graham, R.A.F. 464, 465
Grant, A. 1076
Grant, D.R. 977, 1020
Grasty, R. 1360
Graterol, M. 634
Gray, D.M. 1028, 1029
Gray, J.T. 326
Gray, L. 932
Gray, N. 58
Gray, W.M. 165, 1340
Green, D.C. 298
Green, R. 1234
Greenman, L. 475
Greenwood, H.J. 218, 219, 766
Greggs, R.G. 1141, 1156
Gregory, M. 1078
Greig, J. 460
Greig, S. 820
Grenier, C. 982
Greiner, H.R. 722
Grenier, J. 449, 465
Gretener, P.E. 861
Grice, R.H. 151, 1021

Grieve, R.A.F. 207, 796
Griffin, A.A. 428
Grootenboer, J. 481
Gross, G.A. 493
Gross, H. 385
Grossman, L. 800
Grove, E.W. 584, 821
Grove, G.D. 1022
Guilloux, L. 490
Guillet, G.R. 534
Gunn, B.M. 220
Gunter, W.D. 871
Gurbuz, M.B. 410, 411
Gwyn, Q.H.J. 324, 327
Gyenge, M. 146

Hacquebard, P.A. 564
Hadley, C. 1169
Hafez, A. 1326
Hajnal, Z. 32, 412, 413, 414
Haley, E. 387
Hale, W.E. 585
Halferdahl, L.B. 535, 1080
Halliday, K. 428
Hall, D.H. 31, 32, 383, 406, 411, 413, 414
Hamilton, D.L. 631
Hamilton, J.B. 536
Hamilton, W.N. 537
Hanfield, R.C. 57
Hardy, R. 822
Harris, D. 724
Harris, D.C. 634, 663, 677
Harris, F.R. 623
Harris, I. 538, 1118
Harriss, R.C. 221, 222, 575, 1023, 1082
Hasegawa, H.S. 415
Hattersley-Smith, G. 948
Hattie, D.W. 465
Haugh, I. 28, 31
Haughton, D.R. 635
Havard, C.J. (Miss) 1214
Hay, P.W. 34
Hedley, D.G.F. 146, 151
Henderson, E.P. 960
Henderson, J.R. 1296, 1297
Heroux, Y. 1160
Hewins, R.M. 475
Hewitt, D.F. 538
Heywood, W.W. 59
Hill, F.C. 182
Hill, J.V. 1169
Hill, R. 872
Hills, L.V. 725, 726, 727, 758
Hitchon, B. 225
Hobson, G.D. 416
Hocq, M. 1313
Hodgson, C.J. 226
Hodgson, J.H. 421
Hofman, H.J. 728
Hogarth, D.D. 636, 664, 824
Holter, M.E. 540, 1203
Hood, P.J. 384, 385, 386, 436
Hooper, K. 729
Hoque, M. 615
Hore, R.C. 961
Hornal, R.W. 363
Hornbrook, E.H. 327
Horwood, J.L. 665
Howie, R.D. 558
Hsu, M.Y. 730, 1297
Hubert, C. 1157, 1158
Hudgins, A. 871
Huffman, D.P. 1210
Hughes, C.J. 779
Hughes, O.L. 1002
Hughson, M.R. 666, 669
Hui, H.T. 964
Hunter, H.I. 924
Hutchinson, R.W. 465, 466, 484, 541, 587, 657
Hutchison, W.W. 19

Imreh, L. 231
Innes, M.J.S. 364, 365, 366, 428
Irvine, T.N. 765
Iwasaki, H. 228

Jackson, D.E. 731, 732
Jackson, E.V. 773
Jackson, S.A. 460
Jacoby, R.S. 825
Jacoby, W. 367
Jambor, J.L. 517, 637, 638, 668
James, R.S. 632
Jarrett, P.M. 1005
Jeffs, D.N. 967
Jeletzky, J.A. 733, 1215
Jennings, D.S. 798
Jen, L.S. 475
Jessop, A.M. 378

Johnson, A.E. 467
Johnston, F.J. 79, 512
Johnston, G.H. 154, 155, 933, 949, 1025
Johnston, W.G.Q. 123
Jolliffe, A.W. 60, 494, 589
Jones, G.H.S. 1345
Jones, J.F. 902, 944
Jongejan, A. 230
Jost, A. 351
Judge, A.S. 378

Kaiman, S. 669
Karrow, P.F. 962, 963, 964
Katz, M.B. 106
Keeler, C.M. 329
Kehlenbeck, M.M. 826
Kelley, D.G. 48
Kelly, R. 231
Kemp, A.L.W. 1083
Kendrick, G. 971
Kennedy, M.J. 1282
Kerr, J.Wm. 60, 61, 63, 1084, 1159, 1185, 1247, 1346
Keys, J.D. 665, 670
Killeen, P.G. 401
Kim, K.T. 178
Kindle, E.D. 468
King, A.F. 1186
King, L.H. 1085
King, M.S. 156, 1348
Kingston, P.W. 639
Kinisky, J.J. 321
Kirkham, R.V. 12
Kish, L. 107
Klassen, R.W. 934, 935
Koh, I.S. 42
Kornik, L.J. 387, 433
Koster, F. 124
Kranck, E.H. 58
Krause, J.B. 628, 839
Kretschmar, U. 801
Kretz, R. 867
Krouse, H.R. 460
Kumarapeli, P.S. 1311
Kupsch, W.O. 125, 542, 1026, 1027, 1028, 1029, 1030
Kustra, C.R. 80
Kwak, T.A.P. 1297

Lachance, G.R. 234
Lajoie, J. 1160
Lajtai, E.Z. 158
Lake, R.H. 177, 235
Lambert, R.St.J. 824
Landy, R.A. 1031
Lang, A.H. 594
Langham, E.J. 995
Langford, F.F. 236, 868
Larochelle, A. 388, 389, 392, 1287
Lasalle, P. 596, 983
Laurin, A. 108
Lawrence, D.F. 1324
Lawson, D.E. 1086
Lawson, D.W. 925
Leblanc, G. 417
Le Breton, E.G. 903
Lecheminant, A.N. 219, 237
Ledoux, R.L. 640, 985
Lee, H.A. 1031
Lee, P.J. 140
Leech, G.B. 13, 487, 598
Legault, J.A. (Miss) 707
Leith, E.I. 936
Lennox, D.H. 904, 905, 1032
Lenz, A.C. 732, 1187
Leonard, M.A. 109, 1160
Le Page, Y. 645, 679
Lesperance, P.J. 734, 735
Levinson, A.A. 239, 672
Lewis, C.F.M. 965, 973, 1089
Lewis, T. 378
Liberty, B.A. 1090, 1249
Lin, H. 641
Lin, S.B. 630
Lissey, A. 930, 937
Liu, C. 599
Locker, G. 160
Logan, A. 736, 1188
Longe, R.B. 600
Lorberg, E. 332
Loveridge, W.D. 290, 487
Lovell, H. 81, 82
Lumbers, S.B. 83
Lyall, A.K. 165, 1091

MacDougall, J.D. 222
MacDonald, B.C. 27, 29
MacDonald, J.A. 503
MacFarlane, I.C. 471, 1033
MacIntosh, J.A. 110
Mackenzie, W.S. 49, 1189, 1194, 1198, 1199
Mackay, J.R. 334

Mackasey, W.O. 84
MacLean, B. 1085
MacLean, W.H. 242
MacLaren, A.S. 387
MacNeill, R.H. 946
MacQueen, R.W. 49, 1095, 1096, 1162, 1176
MacRae, N.D. 466
Mahajan, S.K. 513
Majmundar, H.H. 243, 514, 785, 1072
Makovicky, E. 642
Malik, O.P. 244, 470
Mamet, B. 1191
Manchee, E.B. 418
Mannada Rani, R.G. 964
Manson, R. 195
Marchand, M. 827
Martignole, J. 828, 1313
Martindale, R.D. 515
Mason, G.D. 1250
Mason, I.M. 802
Mathieu, A. 103
Mathey, B. 1160
Mathews, W.H. 333, 334
Matthews, J. 1229
Maurice, O.D. 543
Maxwell, J.A. 854
McAllister, A.L. 471, 495, 774, 1163
McAndrews, J.H. 966, 1035
McCammon, B. 247
McCabe, H.R. 1216, 1251
McCartney, W.D. 501, 608, 613, 1129
McConnell, R.K. 360, 365, 373
McDougall, R. 961
McGrath, P.H. 32, 399, 436
McGregor, D.C. 738
McGugan, A. 1252
McIlwaine, W.H. 85, 1099
McLeod, C.R. 496
McLellan, W. 1100
McLean, J.R. 1210
McNutt, R.H. 248, 311, 800, 801, 802
McPherson, R.A. 936, 938
McRitchie, D. 31
McRoberts, J.H.E. 739
McTaggart, K.C. 766
Medioli, F. 740
Mehrotra, P.N. 741
Meilleur, G. 29
Mellary, A.A. 967, 968
Meneley, W.A. 996
Meyboom, P. 1037
Meyn, H.D. 86
Miall, A.D. 1102
Middleton, G.V. 140, 1103
Mills, P.J. 111
Milligan, G.C. 602, 1149
Milne, V.G. 87, 472
Milne, W.G. 419
Mirynech, E. 969, 985
Misra, S.B. 43
Mitchell, R.H. 251
Monger, J.W.R. 14
Montgomery, D.S. 557
Mookherjee, A. 473
Moore, J.C.G. 252
Moore, R.G. 1192
Moorhouse, W.W. 475
Morley, L.W. 380, 387
Morris, W.G. 742
Morrison, B. 437
Morrison, W.D. 972
Morton, R.D. 313, 604, 841
Mott, R.J. 997
Mottana, A. 203
Mountjoy, E.W. 16, 1105, 1106, 1164, 1193, 1194, 1199, 1217, 1261
Mukherji, K.K. 1107
Mukherjee, A.C. 1320
Muller, F. 950, 951
Muller, J.E. 15
Mulligan, R. 253, 517
Murphy, P.J. 906
Murray, D.A. 544
Murray, D. 1119
Murtaugh, J.G. 830
Muysson, J.R. 254

Naldrett, A.J. 255, 256, 475, 805
Nassichuk, W.W. 744, 1195
Nauss, A.W. 1108
Nautiyal, A.C. 1180
Neal, W.J. 1103, 1109
Nelson, S.J. 745, 1253
Nestell, M. 1182
Newson, R. 1299
Nickel, E.H. 675, 676, 677
Nind, T.E.W. 930
Nixon, C.M. 824
Noble, J.P.A. 746
Norford, B.S. 27, 29, 747, 1165

Norris, A.W. 27, 29, 1179
Norris, D.K. 1287, 1352, 1353
Norris, G. 748, 1218
North, B.R. 1210
North, F.K. 1254
Nriagu, J. 170

O'Brien, J.A. 352
O'Brien, N.R. 1068
O'Donnell, N.D. 944
Oldershaw, A.E. 442, 1110
Oldershaw, M.A. 874
Ollerenshaw, N.C. 4
O'Nions, R.K. 313
Osborne, F.F. 113
Overton, A. 420

Pajari, G.E. 774, 775, 831, 871
Papezik, V.S. 780, 781, 782
Paquet, R. 543
Park, J.E. 394
Parkash, B. 1103
Parry, J.P. 1030
Parsons, M.L. 970
Parsons, R.C. 151
Pattison, E.F. 818, 832
Paulus, G.E. 772
Pawluk, S. 908
Pearce, G.W. 392
Pendlebury, G. 1111
Penner, E. 163
Pepper, T.P. 431, 998
Perrault, G. 259, 260, 644, 645, 678, 679, 680
Peters, C. 487
Peterson, N.N. 1112
Petruk, W. 677, 681
Petryk, A.A. 700
Philpotts, A.R. 833
Phillips, K.A. 31
Phipps, D. 261
Picklyck, D.D. 375
Pilula, R. 971
Pirie, J. 886
Plant, A.G. 638
Platt, R.G. 204
Pollett, F. 565
Potter, R.R. 607
Pouliot, G. 682
Poupard, M. 680
Prasad, N. 270
Prest, V.K. 1037
Prevot, J.M. 986
Price, L.L. 27, 29, 1096, 1219
Price, R.A. 16, 1264
Pringle, G. 775
Procter, R.M. 1177, 1255
Prochnau, J. 520
Procyshyn, E.L. 314, 477, 608
Pryslak, A.P. 89, 1300
Puccini, D.S. 961
Pullen, M.J. 1113
Putt, D.J. 262
Pyke, D.R. 90
Pyke, M.W. 840

Rahmani, R. 1114
Rajasekaran, K.C. 834
Ramachandra Rao, D.S. 1301
Rambaldi, E. 263
Rampton, V. 1003
Ramsden, J. 922
Rashid, M. 1085
Rask, D. 1210
Rector, R.J. 1358
Reesor, J.E. 767, 768
Reeve, D.A. 264
Reimchen, T.H.F.K. 749
Reinhardt, E.W. 62
Remick, J. 114
Render, F.W. 939
Renzoni, C.L. 961
Rich, T. 857
Richards, T.A. 769
Riley, R.A. 91, 169, 494, 497
Rimsaite, J.Y.H. (Miss) 646
Ripley, L.G. 683
Riva, J. 750
Robertson, J.A. 92, 505
Robertson, P.B. 427, 428
Robertson, W.A. 393, 394
Robinson, B. 604
Robinson, J.E. 1354
Rochette, F. 987
Roddick, J.A. 19
Roed, M. 909
Roeder, P. 872
Rondot, J. 115
Roscoe, S.M. 266, 487
Roscoe, W.E. 478
Rose, E.R. 611
Rothwell, R.L. 907
Rouse, G.E. 726
Rousell, D.H. 30
Rowland, J.F. 177
Roy, D. 1308

Roy, J.L. 393, 394
Rucklidge, J.C. 521, 805, 873, 1360
Ruitenberg, A.A. 35, 623
Rukavina, N.A. 1115
Rupert, R. 82
Russell, G.A. 164, 940
Russell, L.S. 751, 1220, 1230
Rust, B.R. 1116, 1117
Rutherford, A. 999
Rutter, N.W. 910, 926, 1004
Ryckborst, H. 927

Saba, K. 1182
Sabina, A.P. (Miss) 638
Sadler, L.D.M. 911, 1038
Sanford, B.V. 27, 29, 1169, 1256
Sangameshwar, S. 479
Sangster, A.L. 613
Sangster, D.F. 267
Sarjeant, W.A.S. 727
Sasaki, A. 460, 461, 857
Sass, D.B. 693
Sauve, P. 835
Sawatzky, P. 386
Schau, M. 1221
Schenk, P.E. 1118, 1119
Schindler, J.N. 271
Schwarcz, H.P. 268, 270, 271, 481, 684
Schwarz, E.J. 395, 396
Schwerdtner, W.M. 874, 875
Scoates, R.F.J. 31
Scott, B.P. 126
Scott, J.D. 647
Scott, J.S. 1039
Scott, S.A. (Mrs.) 482
Scott, W.J. 346
Seguin, M.K. 347
Sen Gupta, J.G. 273
Senenov, E.L. 664
Sergiades, A.O. 615
Sharp, D.A. 1169
Sharma, K.N.M. 1315
Shaw, D.M. 215, 247, 254, 274, 635, 798, 806
Sherwood, H.G. 616
Shilts, W.W. 988
Shklanda, R. 93, 498
Sibul, U. 972, 975, 1028
Sikander, A.H. 1316
Simard, G. 989, 990
Simon, C. 951
Simony, P.S. 20
Sims, W.A. 617
Sinclair, G.W. 1170
Singh, B.A. 968, 975
Singh, Ch. 752
Singh, R.N. 460
Singh, S.K. 868
Singh, T. 912
Sirois, L.L. 95
Sirois, R. 543
Sizgoric, T.M. (Mrs.) 522
Skibo, D.N. 381
Skinner, R. 94
Skippen, G.B. 876
Slaney, V.R. 439
Slankis, J.A. 483
Slivitzky, M. 991
Sly, P.G. 1121
Smith, A.Y. 277
Smith, C.H. 877
Smith, D.G.W. 210, 278, 648, 686, 841, 1235
Smith, D.L. 739, 1069, 1073, 1075
Smith, F.G. 142, 279, 880
Smith, G.W. 928
Smith, J.E. 973
Smith, J.R. 121, 127
Smith, L. 1196
Smith, R.E. 881
Smith, W.E.T. 419
Smitheringale, W.G. 281, 618
Snead, R. 753, 1222
Sobczak, L.W. 368, 369
Soles, J.A. 545
Sood, M.K. 853
Soong, K. 774
Souther, J.G. 19, 770
Srivastava, P.N. 1122
Srivastava, S. 754
St-Onge, D.A. 915, 1039
Stacey, R.A. 352, 370
Stainton, M. 222, 575
Stalker, A. MacS. 913
Statham, K.F. 1204
Stauffer, M.R. 1278, 1320, 1357
Stearn, C.W. 755
Stelck, C.R. 1223
Stelmach, A. 173
Stephens, L.E. 370, 371, 376
Stephenson, J.F. 523
Stesky, R.M. 875

Stevens, A.E. 421
Stevens, G.R. 787, 1283
Stevens, R.D. 487
Stevenson, D.R. 900, 907, 914
Stevenson, I.M. 44
Stevenson, J.S. 687, 688, 807
Stevenson, L.S. (Mrs.) 688
Stewart, J. 1123
St. Julien, P. 113, 116
Stockwell, C.H. 1272
Storer, J.E. 1230
Stott, D.F. 1224, 1289
Stutsky, B.E. 1279
Subbarao, K.V. 649
Suffel, G.G. 484
Sutarno 177
Sutherland-Brown, A. 282, 619, 1225
Sutterlin, P.G. 143
Sygusch, J.E. 650
Symons, D.T.A. 396, 397, 1284
Symons, K.E. 974

Take, W.F. 422, 424, 546, 1197, 1285
Tanner, J.G. 369, 372, 373
Taylor, F.C. 45
Taylor, G.C. 1177, 1198
Tempelman-Kluit D.J. 129
Temple, P.G. 61
Terasmae, J. 1040
Tervo, R. 165
Thomas, R.D. 324, 338
Thomas, R.L. 1124
Thomson, S. 320, 321
Thorsteinsson, R. 63
Thorpe, R. 620
Thurston, P.C. 80
Thusu, B. 756
Tiphane, M. 547, 1125
Tipper, H.W, 21, 22
Toews, N.A. 1340
Tokarsky, O. 916
Tomlinson, M. 174
Toomey, D.F. 1199
Torgersen, L. 1029
Toth, J. 927, 1041
Tovell, W.M. 1126
Tozer, E.T. 64, 757
Tremblay, J.H. 623
Trembath, L.T. 284, 651, 775, 871
Trettin, H.P. 65, 1273
Troup, A. 1082
Truscott, M.G. (Mrs.) 542
Tuke, M.F. 694
Turek, A. 31
Turner, W.R. 144, 893, 918
Turnock, A.C. 31, 286, 649
Tyrlik, W.T. 402, 1286

Underhill, D.H. 1358
Upitis, U. 57
Usher, J.L. 1112
Usik, L. (Miss) 287
Uyeno, T.T. 695, 1171, 1201

Vagners, U.J. 1014
Vagt, G.O. 1303
Vaguolgyi, M.S. 758
Valiquette, G. 837
Vanden Berg, A. 919, 920
Van de Poll, H.W. 623, 1128
Van de Walle, M. 117
Van Everdingen, R.O. 1042
Van Loan, P.R. 652
Van Loon, J.E. 662
Vasquez, J.C. 1129
Vemuri, R. 176
Venkitasubramanyan, C.S. 1304
Verma, H. 762
Vicencio, R. 1227
Vonhof, A. 125
Vonhof, J.A. 1000

Walcott, R.I. 374
Walker, R.G. 1130
Wall, J.H. 759
Wallach, J. 1305
Wanless, R.K. 288, 290, 487, 557
Wardlaw, N.C. 1131, 1202, 1204
Wares, R. 778
Washkurak, S. 398
Waterhouse, J.B. 760
Watkinson, D.H. 291
Weaver, D.F. 373
Webber, G.R. 292
Weber, J.R. 362, 365, 375, 376
Weber, W. 31
Weichert, D.H. 418
Wenban-Smith, A.K. 796
Westermann, G.E.G. 761, 762, 1133, 1227
Westgate, J.A. 321, 922, 1234, 1235
Wheeler, J.O. 23

Whitham, K. 418, 419
Whitehead, J. 366
Whittington, H.B. 1172
Whitaker, S.H. 992
White, B. 602
Wickens, A.J. 423
Wightman, J.F. 690
Wilkins, A.L. 230, 971
Wilkins, R. 971
Williams, B.P. 1065
Williams, F.M.G. 118
Williams, G.D. 293, 1134
Williams, H.H. 46, 1023
Williams, P.F. 1116
Williamson, D.H. 37
Wilson, J.T. 1359, 1360
Wilson, H.D.B. 31, 32, 304, 488, 885, 1277
Wilton, H.P. 499
Winder, C.G. 763, 1169, 1173
Wind, G. 20
Winkler, H.G. 886
Wolfe, W.J. 295
Wood, J. 96
Worth, J.K. 1136
Woussen, G. 838
Wright, J.D. 549
Wyder, J.E. 343, 935, 1009
Wynne-Edwards, H.R. 296, 778, 809, 825, 826, 839, 886, 887, 1295, 1305, 1361

Yakutchik, T.J. 975
Yole, R.W. 1117, 1137
Yorath, C.J. 1138, 1228
York, D. 309
Young, F.G. 1174
Young, G.M. 1058, 1140
Young, H.E. 1141
Yu, Y. 146

Zaturecky, J.W. 1332
Zentilli, M. 456
Zwanzig, H.V. 1281