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CANADA  
DEPARTMENT OF MINES  
AND  
TECHNICAL SURVEYS

GEOLOGICAL SURVEY OF CANADA

CATALOGUE  
OF  
CURRENT SCIENTIFIC ACTIVITIES  
OF THE  
GEOLOGICAL SURVEY OF CANADA

PART 2

OFFICE AND LABORATORY

To June 30, 1965

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GEOLOGICAL SURVEY

OTTAWA  
1965

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DEPARTMENT OF MINES AND TECHNICAL SURVEYS

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GEOLOGICAL SURVEY OF CANADA

CATALOGUE

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OFFICE AND LABORATORY

To 30 June, 1965

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## PREFACE

In this catalogue, the current office and laboratory activities of the Geological Survey of Canada are arranged serially, and gaps in the series indicate that projects originally assigned the missing numbers have been completed, or are inactive or discontinued. The projects have, for convenience in this catalogue, been arbitrarily assigned numbers preceded by the letters 'O.P.' for 'office and laboratory project'. The field projects are listed in Part 1 of the catalogue and this is issued separately.

The projects are indexed, on the pages immediately following, according to: author, project number, division of the Geological Survey supervising the study, and title. The index is followed by the separate details of each investigation.

Y.O. Fortier  
Director, Geological Survey  
of Canada

Ottawa, 1 July, 1965.

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<u>Author</u>	<u>Project</u>	<u>Division</u>	<u>Title</u>
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	144	PS	Pb and S isotopes, Yukon
	236	PS	Uranium at Port Radium
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GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 2. Central Technical Geological Files  
(Economic geology files redefined)

LOCATION: Ottawa

OBJECTIVE: To file and cross-index all unpublished geological information and geological plans presented to the G.S.C. by companies, governmental bodies, or prepared by staff.

PERSONNEL: Mrs. P.K. Shurben

DATE OF BEGINNING: 1940

DATE OF COMPLETION:

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: None in near future.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 4. Resident Geologist, Yellowknife

**LOCATION:** Yellowknife, N.W.T.

**OBJECTIVE:**

1. To make available the facilities and services of a Resident Geologist, including: maintenance of an information and records office; assistance to prospectors and others with geological problems; geological advice and assistance to other government agencies; liaison between local industry and Geological Survey, Ottawa;
2. To undertake local or regional geological studies as approved or directed by headquarters.

**PERSONNEL:** W.R.A. Baragar (to 1963), E.H.W. Hornbrook (1962-64?), E.A. Schiller (1963-65), R.I. Thorpe (1965- )

**DATE OF BEGINNING:** 1947

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** Papers 61-3, 62-1, 63-9, 64-22

**PUBLICATIONS OUTSTANDING:** Annual preliminary-type reports on mineral industry of District of Mackenzie; periodical compilation of these data as memoirs to supplement Memoirs 230 and 261 (See also O.P. 27); appropriate reports on scientific investigations.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 5. Administration of the British Columbia office

**LOCATION:** Vancouver, B.C.

**OBJECTIVE:** To keep in touch with the mining industry of B.C.; to distribute G.S.C. publications on Western Canada; to provide library facilities, assistance and information for visitors concerned with geology or mining in Canada; to cooperate with the Dept. of Mines and Petroleum Resources, British Columbia.

**PERSONNEL:** J.E. Armstrong; S.F. Leaming

**DATE OF BEGINNING:** 1917

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Principal projects undertaken from this office, including those expected to lead to publications, are listed separately.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 6. Distribution of specimens and collections of Canadian rocks, minerals, ores and fuels.

**LOCATION:** Ottawa

**OBJECTIVE:** To assist prospectors and to familiarize individuals and institutions, associated with the mineral industry, with Canadian rocks, minerals, ores and fuels.

**PERSONNEL:** C.H.R. Gauthier, plus 3 assistants

**DATE OF BEGINNING:** Many years ago

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 7. Examination of mineral and rock samples.

**LOCATION:** Ottawa

**OBJECTIVE:** (1) Free examination and reports made on mineral and rock samples and specimens sent in from all parts of Canada by the general public.  
(2) Identification of minerals in specimens submitted by members of the Geological Survey field staff.

**PERSONNEL:** C.H.R. Gauthier, J.L. Jambor, R.N. Delabio

**DATE OF BEGINNING:** Many years ago

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** Information supplied mainly by correspondence; occasional report on some special investigation published.

**PUBLICATIONS OUTSTANDING:** None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 13. Providing pertinent geological information to government authorities administrating Crown Lands.

LOCATION: Ottawa

OBJECTIVE: To assist government authorities in their estimates of rentals, royalties, etc., in connection with natural resources of oil, gas, coal, etc., on Indian Reserves and Territories.

PERSONNEL: J.F. Caley

DATE OF  
BEGINNING: 1943

DATE OF  
COMPLETION:  
    Research: Continuing  
    Prelim. pubs: --  
    Final pubs: --

PUBLICATIONS: None, but much official correspondence

PUBLICATIONS  
OUTSTANDING: None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 14. Variation in lattice parameter of pitchblende and uraninite from various localities.

LOCATION: Ottawa

OBJECTIVE: To ascertain whether the variations can be attributed to any of the following; (1) different mineralogical provinces; (2) age of the deposits; (3) degree of alteration; (4) variations in a solid solution series.

PERSONNEL: S.C. Robinson and Miss A.P. Sabina

DATE OF  
BEGINNING: Feb. 1949

DATE OF  
COMPLETION:  
    Research: 1958  
    Prelim. pubs: 1955, 1958  
    Final pubs:

PUBLICATIONS: Two outside papers (1955, 1958)

PUBLICATIONS  
OUTSTANDING:

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 15. Reference collection of X-ray powder photographs of minerals.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a collection of X-ray photographs of material identified accurately by chemical or other means; to develop new techniques in powder photography.

**PERSONNEL:** R.J. Traill, R.N. Delabio, and J.L. Jambor

**DATE OF BEGINNING:** 1949

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1959
Final pubs:	Indefinite

**PUBLICATIONS:** Paper 60-4

**PUBLICATIONS OUTSTANDING:** Published lists from time to time of minerals for which such powder patterns are available.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 17. Office compilation of aeromagnetic data.

**LOCATION:** Ottawa

**OBJECTIVE:** To provide information for the publication of aeromagnetic maps that may assist geological mapping and the search for deposits carrying iron-bearing minerals.

**PERSONNEL:** E.E. Ready and staff of the compilation section of the Geophysics Division

**DATE OF BEGINNING:** June 1947

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	Continuing
Final pubs:	Continuing

**PUBLICATIONS:** 1 mi. aeromagnetic contour maps. For details see Aeromagnetic Index Maps.

**PUBLICATIONS OUTSTANDING:** Maps as above from Field Projects.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 18. Administration of Western Petroleum and Natural Gas office.

**LOCATION:** Calgary, Alberta

**OBJECTIVE:** To keep in touch with developments and to advise the public concerning geological problems affecting oil and gas exploration in Western Canada; to maintain facilities for a staff engaged on regional subsurface stratigraphic and correlation problems as related to oil and natural gas; and to perform other duties as required.

**PERSONNEL:** R.T.D. Wickenden

**DATE OF BEGINNING:** Sept. 1950

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** --

**PUBLICATIONS OUTSTANDING:** No publications expected. Principal projects undertaken at this office, including those expected to lead to publications, will be listed separately.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 20. Compilation of data on current research  
in the Geological sciences.

LOCATION: Ottawa

OBJECTIVE: Publication of an annual report on current geological  
research in Canada.

PERSONNEL: J.F. Henderson

DATE OF  
BEGINNING: Sept. 1950

DATE OF  
COMPLETION:  
Research: Continuing  
Prelim. pubs: --  
Final pubs: Annual

PUBLICATIONS: Mimeographed reports prepared, or brought up to  
date, annually, and included in annual report of  
National Advisory Committee (See O.P. 21)

PUBLICATIONS  
OUTSTANDING: As above

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 21. Secretary Nat. Advisory Committee on Research in the Geological Sciences.

**LOCATION:** Ottawa

**OBJECTIVE:** Secretarial duties in support of above Committee concerned with the coordination of, and stimulation of interest in, geological research in Canada.

**PERSONNEL:** J.F. Henderson

**DATE OF BEGINNING:** November 1950

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	Annual

**PUBLICATIONS:** Annual reports of Committee, including survey of current research in the geological sciences in Canada.

**PUBLICATIONS OUTSTANDING:** Annual reports



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 23. Research on the petrography and spore analysis of coal and associated clastic sediments.

**LOCATION:** Commenced at Sydney, N.S., continued in Ottawa

**OBJECTIVE:** Investigations of the character and correlation of the various coal seams in Nova Scotia and Western Canada coal fields, such as will aid their development. Studies of Carboniferous palynology for age determinations and stratigraphy.

**PERSONNEL:** P.A. Hacquebard, A.R. Cameron, J.R. Donaldson, T.F. Birmingham, M.S. Barss

**DATE OF BEGINNING:** August 1948

**DATE OF COMPLETION:**

Research:	Continuing ..
Prelim. pubs:	--
Final pubs:	

**PUBLICATIONS:** Bulletins 19, 40, Papers 62-36; 63-3;  
20 outside papers;  
Bulletin 107, by G. Playford, Post Doctorate Fellow

**PUBLICATIONS OUTSTANDING:** Office and published reports and outside publications from time to time.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 25. Subsurface geology of southwestern Ontario. Includes data from G.S. 51-23.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare maps and reports, partly based on G.S. 51-23, giving data and conclusions pertaining to the subsurface geology and economic possibilities of southwestern Ontario.

**PERSONNEL:** B.V. Sanford

**DATE OF BEGINNING:** 1952

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** Memoir 278. Many outside papers.

**PUBLICATIONS OUTSTANDING:** Maps and reports as information is accumulated. Individual reports under specific project numbers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 27. Mineral Industry of the Mainland of Northwest Territories.

**LOCATION:** Yellowknife, N.W.T.

**OBJECTIVE:** To secure information and prepare for publication reports on the Mineral Industry of the Mainland of the Northwest Territories.

**PERSONNEL:** J.C. McGlynn, W.R.A. Baragar, E.A. Schiller, R.I. Thorpe (1965- )

**DATE OF BEGINNING:** 1954

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** Memoirs 230, 261 by C.S. Lord  
Papers 61-3, 62-1, 63-9, 64-22

**PUBLICATIONS OUTSTANDING:** Bulletin by McGlynn (See also O.P. 4) to up-date  
Memoir 261

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 28. Age determinations of rocks and minerals.

**LOCATION:** Ottawa

**OBJECTIVE:** To make concentrations of minerals from bulk samples of rocks and ores; to analyse these concentrations for specific elements and make chemical concentrations of specific elements for isotope analyses. By means of the mass spectrometer to make isotope analyses of the above and to compute the age of the minerals and enclosing rocks from these data.

**PERSONNEL:** R.K. Wanless, Miss J. Rimsaite, J.C. Paris, R.D. Stevens, G. Lachance, C. Hunt

**DATE OF BEGINNING:** 1954

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	Annually
Final pubs:	Indefinite

**PUBLICATIONS:** Papers 60-17, 61-17, 62-17, 63-17, 64-17. Three outside papers.

**PUBLICATIONS OUTSTANDING:** Various publications as work progresses, probably in the form of papers and bulletins.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 29. Identification of fossils collected by Survey field personnel, other government departments, provincial governments, oil and mining companies, and the general public.

**LOCATION:** Ottawa

**OBJECTIVE:** By the identification and study of fossils to determine the age and depositional environment of the enclosing strata, and thereby to supply the collector with data vital to satisfactory field investigations.

**PERSONNEL:** Staff of the Palaeontology Section

**DATE OF BEGINNING:** Many years ago

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** Results published in many publications by G.S.C. personnel.

**PUBLICATIONS OUTSTANDING:** None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 30. Maintenance of the palaeontological type collections.

**LOCATION:** Ottawa

**OBJECTIVE:** To catalogue, store, and maintain type collections of fossils so that they are readily available.

**PERSONNEL:** T.E. Bolton

**DATE OF BEGINNING:** 1958

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	Continuing

**PUBLICATIONS:** Catalogue of type Invertebrate Fossils of the Geological Survey of Canada, vol. I, 1960; vols. II and III, 1965.

**PUBLICATIONS OUTSTANDING:** Volume IV, up-dating of vols. I-III in preparation.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 31. A study of Geological Survey collections of Scaphites faunas from the Bearpaw Formation of Alberta and Saskatchewan and its equivalents in Manitoba.

**LOCATION:** Ottawa

**OBJECTIVE:** To zone the Bearpaw Formation and its equivalent formations, using the Scaphites faunas; and to correlate these formations throughout the Prairie Provinces. Scaphites faunas concerned to be described and illustrated by fossil plates.

**PERSONNEL:** J.A. Jeletzky

**DATE OF BEGINNING:** 1949

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1952
Final pubs:	1967

**PUBLICATIONS:** Note accompanying outside article 1953; outside paper (with W.A. Cobban) 1964.

**PUBLICATIONS OUTSTANDING:** Bulletins; some in cooperation with W.A. Cobban, USGS.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 32. To compile indexes to Geological Survey Reports.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a complete index of all publications of the Geological Survey after 1959.

**PERSONNEL:** E. Hall

**DATE OF BEGINNING:** 1951

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** General Index to Geological Survey Reports 1927-50,  
General Index to Geological Survey Reports 1951-59.

**PUBLICATIONS OUTSTANDING:** Subsequent indices. Index 1960-69 being prepared.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 34. Oil and gas maps for Western Canada.  
Preparation and revision of maps.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare, revise and publish, as required, maps showing oil and gas fields, oil and gas discoveries, and related data.

**PERSONNEL:** B. MacLean

**DATE OF BEGINNING:** 1953

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	Continuing

**PUBLICATIONS:** Yearly editions of maps 1039A, 1044A

**PUBLICATIONS OUTSTANDING:** Further annual editions of same maps.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 46. Preparation of papers for oral presentation and/or publication in scientific journals.

**LOCATION:** Ottawa and branch offices

**OBJECTIVE:** To prepare scientific papers and present them orally before learned societies or other organizations and/or to offer them for publication in scientific journals. (The data for these papers are mainly the results of investigations authorized as specific Office or Field Projects.)

**PERSONNEL:** Staff of the Geological Survey of Canada

**DATE OF BEGINNING:** Continuing project

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	Continuing

**PUBLICATIONS:** Various articles prepared and approved for oral presentation and/or for publication in scientific or technical journals. A few of these appeared in the Geological Survey reprint series.

**PUBLICATIONS OUTSTANDING:** --

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 47. Subsurface study of the Lower  
Cretaceous formations of southern Saskatchewan.

**LOCATION:** Calgary, Alta.

**OBJECTIVE:** By a study of electric logs and samples from oil and  
gas wells, to describe and illustrate the character,  
distribution, structure, and correlation of the  
principal Lower Cretaceous formations and thereby  
assist exploration for oil and gas.

**PERSONNEL:** L.L. Price

**DATE OF  
BEGINNING:** May 1954

**DATE OF  
COMPLETION:**

Research:	1957
Prelim. pubs:	1962
Final pubs:	--

**PUBLICATIONS:** Paper 62-29

**PUBLICATIONS  
OUTSTANDING:** Two preliminary papers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 52. Resident Geologist, Whitehorse.

**LOCATION:** Whitehorse, Yukon

**OBJECTIVE:** (1) To make available the facilities and services of a Resident Geologist, including: maintenance of an information and records office; assistance to prospectors and others with geological problems; geological advice and assistance to other government agencies; liaison between local industry and Geological Survey, Ottawa; (2) to undertake local regional geological studies as approved or directed by headquarters.

**PERSONNEL:** L.H. Green 1962- , G. Godwin 1962-64

**DATE OF BEGINNING:** December 1954

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** Papers 61-63, 62-27, 63-38, 64-36

**PUBLICATIONS OUTSTANDING:** Annual GSC Papers on mineral industry of Yukon and adjacent areas; periodic compilation of these data for publication as bulletins; appropriate reports on scientific investigations.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 59. Contribution to Schedule of Wells  
Northwest Territories.

**LOCATION:** Calgary

**OBJECTIVE:** To provide the "Schedule of Wells" with geological  
data, with special reference to formation contacts.

**PERSONNEL:** H.R. Belyea, E.J. Tassonyi

**DATE OF  
BEGINNING:** 15 October, 1954

**DATE OF  
COMPLETION:**

Research:	Continuing
Prelim. pubs:	1955, 1960
Final pubs:	--

**PUBLICATIONS:** Preliminary issue made June, 1955  
Second issue made May, 1960  
Third issue made May, 1963

**PUBLICATIONS  
OUTSTANDING:** Published as drilling warrants in a mimeographed  
"Schedule of Wells" released annually by the office  
of the Petroleum Conservation Engineer, Department  
of Northern Affairs and National Resources.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 62. Isotope chemistry of sulphur in rocks and ore deposits.

LOCATION: Ottawa

OBJECTIVE: (1) To determine, with the mass spectrometer, the ratios of sulphur isotopes in sulphide and sulphate minerals collected from and in the vicinity of ore deposits.  
(2) To use these data as an aid in establishing and explaining the genesis of ore deposits.

PERSONNEL: R.W. Boyle, R.K. Wanless, R.D. Stevens, A. Sasaki

DATE OF BEGINNING: 1955

DATE OF COMPLETION:  
 Research: Continuing project  
 Prelim. pubs: 1959, Yellowknife; 1964, Keno Hill  
 Final pubs: 1960, Yellowknife

PUBLICATIONS: Outside papers 1959, 1960

PUBLICATIONS OUTSTANDING: ?

Yellowknife phase completed. Keno Hill phase transferred to O.P. 144.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 77. Chemical and instrumental analyses of rocks and minerals.

**LOCATION:** Ottawa

**OBJECTIVE:** To provide analytical services on rocks, minerals, and related geological materials for Survey officers; to make chemical preparations required for survey projects; to develop chemical and instrumental methods necessary to provide these services and, as required, to improve the accuracy, range, sensitivity, and speed of existing methods.

**PERSONNEL:** J.A. Maxwell, S. Abbey, W.H. Champ, S. Courville, J.G. Sen Gupta, C. Peters, W.F. White, J.L. Bouvier, J.P. Malone, K.S. Tanino, W.A. Gibson, D.A. Brown, Mrs. J. Watson, Miss L. Seymour, Miss M. Brewer.

**DATE OF BEGINNING:** 1844

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Data to be incorporated in reports by Geological Survey officers and in individual publications by staff members. Monograph on rock and mineral analysis (Maxwell) being prepared.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 79. Geological Index Map of Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** To compile and maintain a set of index maps showing areas of Canada covered by G.S.C. published geological maps.

**PERSONNEL:** H.M.A. Rice, 1962, cartography unit

**DATE OF BEGINNING:** 1955

**DATE OF COMPLETION:**

Research:	Continuing Project
Prelim. pubs:	--
Final pubs:	1960, continuing

**PUBLICATIONS:** An original complete set has been published and some have already been revised.

**PUBLICATIONS OUTSTANDING:** Revised editions from time to time.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 80. Field Photo Collection.

**LOCATION:** Ottawa

**OBJECTIVE:** To select and maintain a catalogue and file of transparencies and photographs (stills and movies) illustrating geological and related features of Canada and activities of the G.S.C.

**PERSONNEL:** E. Hall

**DATE OF BEGINNING:** 15 September, 1955

**DATE OF COMPLETION:**

Research:	Continuing project
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 81. Palaeomagnetic measurements.  
(Subprojects 1-4)

**LOCATION:** Ottawa

**OBJECTIVE:** To measure the natural remanent magnetization of rocks. To tabulate, plot and analyze these data in terms of their geological and geophysical implications.

**PERSONNEL:** A. Larochelle, R.F. Black, G. Freda, K. Christie,  
E. Gaucher, W. Fahrig

**DATE OF BEGINNING:** October 1955

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** Bulletins 69, 71, 84, and 90, and 8 outside papers.

**PUBLICATIONS OUTSTANDING:** Further publications under subprojects.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 81-1. Palaeomagnetic Studies of Southeastern Canada.

**LOCATION:** Quebec, Maritime Provinces, and Newfoundland

**OBJECTIVE:** Refine North American polar wandering curve with emphasis on Palaeozoic era. Correlation of specific rock units. Rotation of Newfoundland relative to North American Mainland.

**PERSONNEL:** R.F. Black, G.N. Freda

**DATE OF BEGINNING:** 1958

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	1959, 1964
Final pubs:	1964

**PUBLICATIONS:** 2 outside papers 1959, 1964

**PUBLICATIONS OUTSTANDING:** Bulletin in preparation.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 81-2. Palaeomagnetic Study of diabase dykes in the Canadian Shield. Includes G.S. 62-54.

LOCATION: Ottawa

OBJECTIVE: To attempt to classify the different dykes swarms throughout the Canadian Shield; to attempt to date some of these swarms.

PERSONNEL: E. Gaucher, A. Larochelle, W.F. Fahrig

DATE OF BEGINNING: 1963

DATE OF COMPLETION:  
Research: (?)  
Prelim. pubs: 1964  
Final pubs: (?)

PUBLICATIONS: In paper 64-2, outside paper.

PUBLICATIONS OUTSTANDING: (?)

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 81-3, Palaeomagnetic Study of the Muskox  
Intrusion and associated dykes and lava flows.

**LOCATION:** Ottawa

**OBJECTIVE:** To establish the position of the pole for a section of  
the Proterozoic and to establish the age relationships  
between the various rock units under study.

**PERSONNEL:** W.A. Robertson

**DATE OF  
BEGINNING:** 1963

**DATE OF  
COMPLETION:**  
Research: August, 1964  
Prelim. pubs: 1964  
Final pubs:

**PUBLICATIONS:** 1964, outside paper.

**PUBLICATIONS  
OUTSTANDING:** Bulletin in preparation.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 81-4.

LOCATION: Ottawa

OBJECTIVE: To study the palaeomagnetism of samples from  
Whitehorse and Laberge map-areas.  
Yukon -

PERSONNEL: R.F. Black, A. Larochelle

DATE OF  
BEGINNING: October 1964

DATE OF  
COMPLETION:  
Research:  
Prelim. pubs: 1965-  
Final pubs:

PUBLICATIONS: In paper 65-2.

PUBLICATIONS  
OUTSTANDING: To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 88. Study of G.S.C. collection of fossil insects.

**LOCATION:** Ottawa

**OBJECTIVE:**

- (1) Organization and arrangement of Survey collections;
- (2) Identification of orders, genera, and species, as far as practicable;
- (3) Consideration of stratigraphic significance of collections;
- (4) Figuring and description of specimens.

**PERSONNEL:** H.M.A. Rice (most of work is expected to be done out of office hours)

**DATE OF BEGINNING:** November 1955

**DATE OF COMPLETION:**

Research:	Continuing project
Prelim. pubs:	--
Final pubs:	?

**PUBLICATIONS:** Bulletin 55

**PUBLICATIONS OUTSTANDING:** Possibly additional Bulletins.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 96. Service on Boards, committees, etc., dealing with geological and related matters.

**LOCATION:** Ottawa (mainly); also branch offices of Geological Survey

**OBJECTIVE:** To further the interests of the Geological Sciences in Canada.

**PERSONNEL:** Officers of the Geological Survey

**DATE OF BEGINNING:** 1956

**DATE OF COMPLETION:**

**Research:** Continuing project, services of individual officers will terminate from time to time

**Prelim. pubs:** --

**Final pubs:** --

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 97. Portable Magnetic Susceptibility Meter.

LOCATION: Ottawa

OBJECTIVE: To construct an induction device for measuring magnetic susceptibility of rocks in situ to aid in field correlation of aeromagnetic and ground magnetic data with geology.

PERSONNEL: L.S. Collett, P.J. Hood, E. Gaucher, T.R. Flint

DATE OF  
BEGINNING: March 1956

DATE OF  
COMPLETION:  
    Research: 1965  
    Prelim. pubs: --  
    Final pubs: --

PUBLICATIONS: None, office report.

PUBLICATIONS  
OUTSTANDING: None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 98. Isotopic study of Canadian ore leads  
(see also O.P. 144).

**LOCATION:** Ottawa

**OBJECTIVE:** (1) To determine the lead (and possibly sulphur) isotope distribution in lead ores. (2) To investigate possible isotope variations with geological environment. (3) To determine the direction and magnitude of isotopic fractionation of lead isotopes as a result of chemical and physical processes in nature. (4) When applicable, to establish the age, employing the "common lead" method of dating.

**PERSONNEL:** R.K. Wanless, W.D. Loveridge, R.W. Boyle,  
R.D. Stevens, C. Peters, G.B. Leech, S.M. Roscoe

**DATE OF BEGINNING:** May 1956

**DATE OF COMPLETION:**

    Research: Continuing (Keno Hill phase)

    Prelim. pubs: ( ? )

    Final pubs: ( ? )

**PUBLICATIONS:** Three outside papers, 1960, 1961.

**PUBLICATIONS OUTSTANDING:** Appropriate Geological Survey publications as results warrant. Outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 99. Thin section and hand specimen collection.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare and maintain a collection of rock specimens and thin sections to illustrate the optical properties and mode of occurrence of rock forming minerals as well as rock textures.

**PERSONNEL:** K.R. Dawson, J.A.V. Douglas

**DATE OF BEGINNING:** 1957 (?). First priority to current and recent work.

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 101. G.S.C. mineral and ore collections.

LOCATION: Ottawa

OBJECTIVE: To reorganize, catalogue, index, and maintain mineral and ore collections of the G.S.C.

PERSONNEL: H.R. Steacy, C.H.R. Gauthier

DATE OF  
BEGINNING: May 1955

DATE OF  
COMPLETION:  
Research: Continuing  
Prelim. pubs: --  
Final pubs: (?)

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: --

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 103. Temagami Island copper-nickel-cobalt deposits.

LOCATION: Ottawa

OBJECTIVE: Laboratory mineralogical investigation.

PERSONNEL: E.R. Rose

DATE OF  
BEGINNING: January 1957

DATE OF  
COMPLETION:  
Research: 1957  
Prelim. pubs: 1963 (?)  
Final pubs: --

PUBLICATIONS: 2 outside papers.

PUBLICATIONS  
OUTSTANDING: None

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 107. Cretaceous marine zones of the western interior of Canada.

LOCATION: Ottawa

OBJECTIVE: To present a comprehensive description of the palaeontology and stratigraphy of the marine Cretaceous strata of the western interior of Canada and their correlation with the U.S. Western Interior and European standard divisions.

PERSONNEL: J.A. Jeletzky

DATE OF BEGINNING: 1956

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs: 1964-65  
Final pubs: 1966

PUBLICATIONS: Five outside papers.

PUBLICATIONS OUTSTANDING: Paper and Bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 108. Miscellaneous office projects.

LOCATION: Ottawa

OBJECTIVE: Projects included here are those which, because they were started before the project system was initiated, or for other good reasons, proceeded to near completion without being given a project number.

PERSONNEL: Mainly staff of the Geological Survey; in special instances non-Survey staff.

DATE OF BEGINNING: --

DATE OF COMPLETION:

Research:	Continuing
Prelim. pubs:	--
Final pubs:	Continuing

PUBLICATIONS:

PUBLICATIONS OUTSTANDING: Various publications of the Geological Survey.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 119. Study of Meteorites.

LOCATION: Ottawa

OBJECTIVE: To catalogue, study, describe, and otherwise be responsible for the maintenance, growth, use and display of the Geological Survey meteorite collection.

PERSONNEL: J.A.V. Douglas, J.A. Maxwell, K.R. Dawson

DATE OF BEGINNING: February 1957

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Paper 63-37, Brochure

PUBLICATIONS OUTSTANDING: G.S.C. publications and/or outside papers as required.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 120. Petrological Collections.

LOCATION: Ottawa

OBJECTIVE: To obtain and maintain representative suites of rocks from all mapped areas of Canada for future petrological, geochemical, and other scientific studies. In general these collections will be obtained by the cooperation of the various field officers.

PERSONNEL: K.R. Dawson, J.A.V. Douglas

DATE OF BEGINNING: 1957

DATE OF COMPLETION:

Research:	Continuing
Prelim. pubs:	1960 (?)
Final pubs:	--

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Preliminary Paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 121. Compilation of Canadian Rock and Mineral Analyses.

**LOCATION:** Ottawa

**OBJECTIVE:** To collect, evaluate and publish in appropriate form all Canadian rock and mineral analyses made in the Geological Survey and then to extend the compilation to include similar data are from other sources. The analytical data to be placed on suitable IBM punched cards for processing by computer; it is hoped also to be able to program the computer to produce descriptive data.

**PERSONNEL:** K.R. Dawson and J.A. Maxwell

**DATE OF BEGINNING:** February 1957

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	None
Final pubs:	

**PUBLICATIONS:** Bulletin 115, covering period 1846-1955, in press.

**PUBLICATIONS OUTSTANDING:** Supplementary reports as circumstance dictate.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 122. Palaeozoic Outliers of the Canadian Shield.

**LOCATION:** Ottawa

**OBJECTIVE:** To compile and maintain all available data on the distribution and geology of the Palaeozoic Outliers in the Canadian Shield, and to evaluate their palaeogeographical and other geological significance.

**PERSONNEL:** B.A. Liberty

**DATE OF BEGINNING:** February 1957

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	(?)

**PUBLICATIONS:** Two outside abstracts

**PUBLICATIONS OUTSTANDING:** Paper submitted

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 125. Representative on the Sub-Commission for the Metallogenic Map of the World, for the North American Metallogenic Map, and chairman, Canadian Metallogenic Map Committee.

**LOCATION:** Ottawa

**OBJECTIVE:** To serve on the Committee for the North American Metallogenic Map, and to represent the G.S.C. on the Sub-Commission for the Metallogenic Map of the World. To coordinate and contribute to a major metallogenic Map of Canada.

**PERSONNEL:** W.D. McCartney

**DATE OF BEGINNING:** June 1964

**DATE OF COMPLETION:**

Research:	1967
Prelim. pubs:	(?)
Final pubs:	1968

**PUBLICATIONS:** 3 manuscript maps for display at scientific meetings, internal reports (T.R. 93).

**PUBLICATIONS OUTSTANDING:** Interim papers as required and Bulletin (?).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 130. Catalogue of Geological Survey of Canada Publications according to the National Topographic System.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare for publication a catalogue listing all Geological Survey publications (maps and reports) pertaining to each appropriate unit area of the National Topographic System.

**PERSONNEL:** H.M.A. Rice

**DATE OF BEGINNING:** August 1957

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1961
Final pubs:	1959

**PUBLICATIONS:** Catalogue for 1845-1958.  
Supplements for 1959, 1960 and 1961, 1962.  
Papers 64-3, 65-3.  
Catalogue for 1959 to 1964.

**PUBLICATIONS OUTSTANDING:** Additions and revisions at appropriate intervals.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 144. Lead and Sulphur Isotope Geology of Keno and Galena Hills, Yukon.

LOCATION: Ottawa

OBJECTIVE: To determine the isotopic abundances of lead and sulphur in the lead-zinc-sulphur deposits and their host rocks, and from the data to determine, if possible, the source of the elements in the deposits and the processes that have led to their concentration.

PERSONNEL: R.W. Boyle and R.K. Wanless

DATE OF BEGINNING: January 1958

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs: (?)  
Final pubs: (?)

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: A Geological Survey Bulletin and/or Paper or papers in a scientific journal.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 148. Coordination of all matters concerning radiocarbon (C-14) dates as required by the Pleistocene section.

**LOCATION:** Ottawa

**OBJECTIVE:** To centralize and coordinate all matters concerning radiocarbon dates where these concern the Pleistocene section of the G.S.C. To be responsible for maintaining an appropriate record of such dates; recording and handling requests for laboratory determination of dates; to examine and prepare samples for determination; to recommend priority for determinations.

**PERSONNEL:** J.G. Fyles

**DATE OF BEGINNING:** October 1957

**DATE OF COMPLETION:**

Research:	A continuing project
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** Outside publication:  
Radiocarbon Dates I, II, II, IV  
Paper 63-21, 64-40

**PUBLICATIONS OUTSTANDING:** Annual PS Papers and outside papers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 151. Preparation of 4-mile aeromagnetic compilation maps.

**LOCATION:** Ottawa

**OBJECTIVE:** To publish 4-mile aeromagnetic compilation maps for all areas completely covered by surveys. Prepare marginal notes to contain geological map references and notes on a general interpretation of the magnetic data.

**PERSONNEL:** A.S. MacLaren, A. Brown, E. Roy

**DATE OF BEGINNING:** 1958

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** Maps 1073A, 1080A, 1085A, 1126A, 1127A; three other maps forwarded.

**PUBLICATIONS OUTSTANDING:** Additional maps to follow. Bulletin being prepared.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 153. Lexicon of Stratigraphic Names used in Canada.

LOCATION: Ottawa

OBJECTIVE: To prepare the above Lexicon.

PERSONNEL: T.E. Bolton

DATE OF BEGINNING: April 1958

DATE OF COMPLETION:  
     Research: Continuing  
     Prelim. pubs: --  
     Final pubs: ?

PUBLICATIONS: Nil

PUBLICATIONS OUTSTANDING: Lexicon to be published by G.S.C.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 154. Tectonic Map of Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare the above map.

**PERSONNEL:** C.H. Stockwell (Chairman of Tectonic Map Committee) and officers of Geological Survey with cooperation and contributions by G.A.C., A.S.P.G., and various Provincial governments and others.

**DATE OF BEGINNING:** May 1958

**DATE OF COMPLETION:**

Research:	1963
Prelim. pubs:	--
Final pubs:	1966 or 67

**PUBLICATIONS:** Related publications in PS Papers 61-17 (1961), 62-17 (1962), 63-17 (1963), 64-17 (Pt. II) (1965).

**PUBLICATIONS OUTSTANDING:** Tectonic Map of Canada to be published by G.S.C. Tectonic Map of Canada as part of World Tectonic Map to be published by International Geological Congress. Possibly Tectonic Maps of certain provinces.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 159. Subsurface studies of each of the Palaeozoic systems of southwestern Ontario (Cambrian, Ordovician, Silurian and Devonian).

**LOCATION:** Ottawa

**OBJECTIVE:** By the study of samples and data obtained from wells drilled for oil and gas, to describe and interpret the geological features of the formations of each system, and to assess their economic potentialities.

**PERSONNEL:** B.V. Sanford

**DATE OF BEGINNING:** September 1958

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1958, 1961
Final pubs:	--

**PUBLICATIONS:** Papers 58-12, 60-26  
Bulletin (Selina) in press.

**PUBLICATIONS OUTSTANDING:** A Geological Survey Report on each of the above systems; the matter of a consolidated or final report to be considered later.  
Report of the Devonian system underway.

GEOLOGICAL SURVEY OF CANADA

(Office and Laboratory Project)

PROJECT: O.P. 160. Revision of G.S.C. Mem. 74; a list of Canadian Mineral Occurrences by R.R.A. Johnston, 1915.

LOCATION: Ottawa

OBJECTIVE: To compile and publish an up-to-date list of Canadian mineral occurrences; including all available analytical data.

PERSONNEL: R.J. Traill

DATE OF BEGINNING: October 1958

DATE OF COMPLETION:  
Research: 1964  
Prelim. pubs: --  
Final pubs: 1967

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: A Geological Survey Bulletin, followed by "Paper Series" supplements as and when appropriate.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 166. Gamma Ray Spectrometer Studies  
(joint project with Mineral Sciences Division,  
Mines Branch).

**LOCATION:** Ottawa

**OBJECTIVE:** Previous work established that distinct contrasts in gamma ray spectra may exist between various lithologic sources. Proposed research includes a laboratory study of thick source emission spectra to be followed, if feasible, by in situ measurements on rocks. Continuing research would investigate (1) the degradation of energy spectra with increasing air distance, and (2) the significance of diurnal variations in the gamma field of the earth. These data will allow evaluation of a potential technique for aerial mapping of rocks in which radioactive contrasts exist. Suitable in situ measurements would be useful in stratigraphic and petrogenic correlations.

**PERSONNEL:** A.F. Gregory and J.L. Horwood (Mines Branch).

**DATE OF  
BEGINNING:** January 1959

**DATE OF  
COMPLETION:**  
Research: Completed  
Prelim. pubs: --  
Final pubs: --

**PUBLICATIONS:** Mines Branch Research Reports R-85, R-110.

**PUBLICATIONS  
OUTSTANDING:** Possible summary paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 174. Preparation of Mineralogical Abstracts.

**LOCATION:** Ottawa

**OBJECTIVE:** Preparation of abstracts of mineralogical data included in recent Geological Survey of Canada publications for inclusion in Mineralogical Abstracts published jointly by the Mineralogical Society of Great Britain and the Mineralogical Society of America.

**PERSONNEL:** R.J. Traill

**DATE OF  
BEGINNING:** May 1959

**DATE OF  
COMPLETION:**  
     Research: Continuing  
     Prelim. pubs: --  
     Final pubs: (?)

**PUBLICATIONS:** Contributions to Volumes 14 and 15.

**PUBLICATIONS  
OUTSTANDING:** Contributions to Mineralogical Abstracts.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 175. Field and laboratory methods used by the Geological Survey of Canada in geochemical surveys.

**LOCATION:** Ottawa

**OBJECTIVE:** To compile a series of papers describing in detail the analytical procedures, chemical and equipment, used by the Geochemical Section of the Geological Survey for determining trace amounts of various metals in rock, sediment, and soil samples.

**PERSONNEL:** J. Lynch and other members of Geochemistry Section

**DATE OF BEGINNING:** 1958

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1963
Final pubs:	--

**PUBLICATIONS:** Papers 59-3, 63-7, 63-8, 63-29, 63-49  
64-14, 64-15.

**PUBLICATIONS OUTSTANDING:** Paper Series reports.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 180. Copper Swamp, Sackville, N.B.

LOCATION: Ottawa

OBJECTIVE: To describe the occurrence and study the mechanism by which the copper is concentrated.

PERSONNEL: R.H.C. Holman

DATE OF BEGINNING: 1956

DATE OF COMPLETION:

Research:	1959
Prelim. pubs:	--
Final pubs:	1965

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Final paper probably in outside journal.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 181. (Redefined 1964) Magnetometer construction,  
(includes O.P. 157) (subprojects 1 and 2).

**LOCATION:** Ottawa

**OBJECTIVE:** To design and construct magnetometers.

**PERSONNEL:** L.S. Collett, S. Washkurak, P. Sawatzky, H. Knapp,  
A. Dicaire.

**DATE OF  
BEGINNING:** June 1959

**DATE OF  
COMPLETION:**

Research:	1964
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** G.S.C. Bulletin 130, 1965

**PUBLICATIONS  
OUTSTANDING:** Publications under subprojects.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 181-1, Nuclear Magnetometer, Direct Reading Type, Transistorized.

LOCATION: Ottawa

OBJECTIVE: (1) To transistorize direct reading nuclear precession magnetometer for airborne and general use.  
(2) To integrate solid state magnetometer with telemetering and diurnal-correcting equipment.

PERSONNEL: P. Sawatzky, H. Knapp, A. Dicaire

DATE OF BEGINNING: January 1964

DATE OF COMPLETION:

Research:	? No work Oct. 1964 to Oct. 1965
Prelim. pubs:	--
Final pubs:	--

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: G.S.C. Paper (Sawatzky, P.) in preparation.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 181-2. Overhauser Type Magnetometer...

LOCATION: Ottawa

OBJECTIVE: To design, construct and test an Overhauser continuous reading magnetometer which has several advantages over the nuclear free precession type.

PERSONNEL: S. Washkurak

DATE OF  
BEGINNING: January 1963

DATE OF  
COMPLETION: 1966  
Research:  
Prelim. pubs:  
Final pubs: 1967?

PUBLICATIONS: Office report 64-1

PUBLICATIONS  
OUTSTANDING: Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 189. Insoluble residues, Devonian carbonate rocks.

**LOCATION:** Calgary

**OBJECTIVE:** To prepare and study insoluble residues from the carbonate strata of the Devonian of Western Canada. It is expected that this study will contribute to our understanding of the source and conditions of deposition of the rocks and to the conditions favouring formation of reefs and organic carbonates.

**PERSONNEL:** D.C. Pugh

**DATE OF BEGINNING:** 1959

**DATE OF COMPLETION:**

Research:	Continuing if results merit
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Interim reports.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 190. Identification of organic remains from off-shore dredged samples.

**LOCATION:** Ottawa

**OBJECTIVE:** To identify material collected by Hydrographic Service from Exeter Bay, Baffin Island, and to provide information about depth of occurrence and geographic distribution provided by recent species found in dredged samples as an aid in interpretation of fossil assemblages from Pleistocene deposits.

**PERSONNEL:** F.J.E. Wagner, J. Terasmae

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	1966
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 191. Monograph of the Canadian Buchia (=Aucella).

LOCATION: Ottawa

OBJECTIVE: To present a comprehensive description of the Canadian Buchia faunas adequately illustrated by fossil plates, text-figs., etc. Special attention to be paid to the zonal value of all Buchia species dealt with in the monograph.

PERSONNEL: J.A. Jeletzky

DATE OF  
BEGINNING: 1948

DATE OF  
COMPLETION:  
Research: Continuing  
Prelim. pubs: 1955  
Final pubs: 1967?

PUBLICATIONS: Two outside papers; one abstract.

PUBLICATIONS  
OUTSTANDING: Several bulletins dealing with individual faunas or species. A memoir or a bulletin incorporating the final results.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 192. Reference slide collection of small spores.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a reference slide collection and photographic record of small spores of known geological age; to aid in the intelligent interpretation of spore assemblages and in dating submitted samples; and to provide material for exchange with other institutions.

**PERSONNEL:** D.C. McGregor

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 194. Monograph of Canadian Belemnites.

LOCATION: Ottawa

OBJECTIVE: To present a comprehensive description of the Canadian belemnite faunas adequately illustrated by fossil plates, text-figs., etc. Special attention to be paid to the stratigraphic value of the Canadian belemnite species and genera.

The project is to proceed in conjunction with the author's research on the Dibranchiata Volume of the Treatise on Invertebrate Palaeontology (Dr. R.C. Moore, Editor) now in progress.

PERSONNEL: J.A. Jeletzky

DATE OF BEGINNING: December 1959

DATE OF COMPLETION:  
 Research: Continuing  
 Prelim. pubs: (?)  
 Final pubs: 1967

PUBLICATIONS: Bulletin 15 (part of), two outside papers.

PUBLICATIONS OUTSTANDING: Several bulletins.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 199. Translation of Russian Publication.

LOCATION: Ottawa

OBJECTIVE: To prepare an English translation of a Russian paper on "The Genesis of Chrysotile Asbestos".

PERSONNEL: C.H. Smith, Department of State translators.

DATE OF BEGINNING: 1960

DATE OF COMPLETION:

Research:	1960
Prelim. pubs:	?
Final pubs:	--?

PUBLICATIONS: Bound copy of translation placed in library.

PUBLICATIONS OUTSTANDING: None

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 201. Abstractor for Mineralogical Abstracts.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare abstracts of Ontario Department of Mines reports for use in Mineralogical Abstracts.

**PERSONNEL:** J.A. Maxwell

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	Continuing

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Abstracts in Mineralogical Abstracts.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 206. Subsurface study of the Mississippian, Pennsylvanian, and Permian systems of northeastern British Columbia.

**LOCATION:** Calgary

**OBJECTIVE:** By study of data obtained from wells drilled for oil and gas, to describe and interpret the geological features of each system, and to prepare cross-sections to show correlations of adjacent areas.

**PERSONNEL:** R. M. Procter

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1963
Final pubs:	--

**PUBLICATIONS:** Outside paper.

**PUBLICATIONS OUTSTANDING:** P.S. paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 210. Canadian fossil Ostracoda, Conchostraca.

**LOCATION:** Ottawa

**OBJECTIVE:** By office examination to prepare reports on the following:

1. Some Silurian ostracoda from the Canadian Arctic.
2. Silurian ostracoda from Anticosti Island, Que., includes publication of report on O.P. 193.
3. Upper Silurian Beyrichiid ostracods from New Brunswick.

**PERSONNEL:** M. J. Copeland

**DATE OF BEGINNING:** November 1962

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	(?)

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** G.S.C. bulletin or bulletins.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 213. Illustrations of Canadian Fossils (sub-projects 1-5, 1-4 completed).

LOCATION: Ottawa

OBJECTIVE: Faunas to be illustrated in a series of plates with a detailed legend describing horizon and locality of each specimen.

PERSONNEL: D. J. McLaren and others.

DATE OF BEGINNING: 1960

DATE OF COMPLETION:

Research:	Continuing
Prelim. pubg:	--
Final pubs:	--

PUBLICATIONS: None (see under subprojects).

PUBLICATIONS OUTSTANDING: Under subprojects.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 213-5. Mid- to Late-Cretaceous Index Fossils of the Canadian Western Cordillera.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare 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. A simple correlation chart and introductory remarks will illustrate the zonal sequence of all figured index fossils and their age in terms of the international standard stages. The field work needed in connection with this project is to be carried out in connection with field program.

**PERSONNEL:** J.A. Jeletzky

**DATE OF BEGINNING:** End of 1965

**DATE OF COMPLETION:**

Research:	1967
Prelim. pubs:	
Final pubs:	1968

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** Two G.S.C. Papers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 216. Silurian Bryozoa from Anticosti Island, Quebec.

LOCATION: Ottawa

OBJECTIVE: To describe and figure the Bryozoa fauna from the Silurian Formations of Anticosti Island and establish correlation with other North American and European faunas.

PERSONNEL: T.E. Bolton

DATE OF BEGINNING: 1959

DATE OF COMPLETION:

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Bulletin of one or more parts.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 218. Faunal Study of Late Ordovician and Silurian rocks of southern British Columbia. Includes O.P. 219 for 3.

**LOCATION:** Ottawa

**OBJECTIVE:**

1. To describe the faunas of the Beaverfoot-Brisco Formation and related units.
2. Lithologic and biostratigraphic correlation of these units and the positioning of the Ordovician-Silurian boundary (Field Project 61-19).
3. Faunal study, dating and correlating Cirrus Mountain "Halysites" beds, Banff Park, Alta.

**PERSONNEL:** B.S. Norford

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

    Research: 1967

    Prelim. pubs:

    Final pubs:

**PUBLICATIONS:** Two outside publications, 1961, 1962.

**PUBLICATIONS OUTSTANDING:** One or more Bulletins.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 221. Catalogue of oil and gas wells  
(Ontario) in Sample Repository.

**LOCATION:** Ottawa

**OBJECTIVE:** To compile from records on file as list of all  
wells drilled in southwestern Ontario for which  
cuttings are available.

**PERSONNEL:** B.V. Sanford

**DATE OF  
BEGINNING:** October 1960

**DATE OF  
COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	1964

**PUBLICATIONS:** Paper 63-46

**PUBLICATIONS  
OUTSTANDING:** Bring to date at appropriate intervals, depending  
on volume of drilling.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 222. Commonwealth Committee on Fuel Research. Exchange of Coal Samples for Petrographic Analyses.

LOCATION: Ottawa

OBJECTIVE: To broaden experience on coal petrography and its application by examination of a wider range of coals than is available in any one country.

PERSONNEL: P.A. Hacquebard, T.F. Birmingham

DATE OF BEGINNING: October 1960

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None; Report submitted to Committee; correspondence regarding results.

PUBLICATIONS OUTSTANDING: General report to be prepared by the Secretary of the Commonwealth Committee on Fuel Research (Interim reports received from the Secretary during 1961 and 1962).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 223. Subsurface Upper Cretaceous stratigraphy of west-central Alberta and adjacent British Columbia.

**LOCATION:** Calgary

**OBJECTIVE:** Regional correlation and stratigraphic analysis of Upper Cretaceous marine rocks with special attention to potential oil and gas reservoirs, such as the Cardium and Dunvegan Formations. Development of stratigraphic analytical techniques using data processing equipment.

**PERSONNEL:** C.F. Burk, Jr.

**DATE OF BEGINNING:** September 1960

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1962
Final pubs:	

**PUBLICATIONS:** Paper 62-31, 2 outside papers.

**PUBLICATIONS OUTSTANDING:** Further preliminary reports.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 225. Microfossils from the Ordovician Red River Formation, Manitoba.

**LOCATION:** Ottawa

**OBJECTIVE:** Disclosure of plant microfossils which are already known, from preliminary tests, to be present in this limestone deposit. Elucidation of their role in: a) the palaeontology of the Cat Head Member of the Red River Formation; b) the palaeobotanical record of the early Palaeozoic.

**PERSONNEL:** D.C. McGregor

**DATE OF BEGINNING:** November 1960

**DATE OF COMPLETION:**

Research:	Completed
Prelim. pubs:	--
Final pubs:	(?)

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Bulletin (MS. ready, awaiting contributions on megafossil plants from Wayne L. Fry and faunas by G.W. Sinclair).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 226. Origin of sulphides in radioactive conglomerate.

LOCATION: Ottawa

OBJECTIVE: Indicated systematic difference in isotopic composition of a few sulphide samples suggest the advisability of other examination of such a systematization in various host rocks.

PERSONNEL: S.M. Roscoe

DATE OF BEGINNING: 1960

DATE OF COMPLETION:  
Research: 1962?  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: If analytical results are available in time, they will be incorporated in memoir on Blind River Uranium (see 54-30), otherwise in publication of its own.

Inactive

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 227. Study of Devonian plant microfossils of Eastern Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** As a sequel to field work of 1959, 1960, and 1962, a palynological study of the Gaspé Sandstone and other Devonian rocks of Eastern Canada to assist in determining the stratigraphy of the areas.

**PERSONNEL:** D.C. McGregor

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	1966?
Prelim. pubs:	
Final pubs:	1967

**PUBLICATIONS:** Bulletin 76

**PUBLICATIONS OUTSTANDING:** One or more Bulletins.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 230. Silurian Coral Faunas of Canada.

LOCATION: Canada

OBJECTIVE: Study and description of the coral faunas from the Silurian system of Manitoulin Island, Anticosti Island, and Western Canada.

PERSONNEL: T.E. Bolton

DATE OF BEGINNING: 1952

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Bulletin 134

PUBLICATIONS OUTSTANDING: One or more Bulletins.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 232. Compilation of Geological Maps on  
1:1,000,000 scale.

LOCATION: Ottawa

OBJECTIVE: To compile a series of geological maps from  
all available data, for separate publication, but  
contributing to compilation of a new Geological  
Map of Canada.

PERSONNEL: A.H. Lang

DATE OF  
BEGINNING: December 1960

DATE OF  
COMPLETION:  
Research: Continuing project  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Eight maps forwarded

PUBLICATIONS  
OUTSTANDING: Preliminary compilations of additional maps  
finished but awaiting results of further field work.

Inactive pending completion of  
geological map of Canada (O.P. 379)



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 236. Absolute age and isotope geology of uranium deposits at Port Radium.

LOCATION: Ottawa

OBJECTIVE: Ages determined on pitchblende and galena samples from the Eldorado Mine may disclose stages of mineralization or remineralization of vein material.

PERSONNEL: J.A. Chamberlain and R.K. Wanless

DATE OF BEGINNING: 1960

DATE OF COMPLETION:

Research:	(?)
Prelim. pubs:	(?)
Final pubs:	(?)

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: To be decided

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 237. Petrography of Pre-Mississippian Rocks  
of Cape Breton Highlands, N.S.

LOCATION: N.S.

OBJECTIVE: Petrographic study of the hard rocks of the  
Cape Breton Highlands.

PERSONNEL: S.E. Jenness

DATE OF  
BEGINNING: 1963

DATE OF  
COMPLETION:  
Research: (?)  
Prelim. pubs: (?)  
Final pubs: (?)

PUBLICATIONS: Nil

PUBLICATIONS  
OUTSTANDING: Bulletin or Paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 238. Developments and construction of a Rapid Sediment Analyser.

LOCATION: Ottawa

OBJECTIVE: To construct a new Sediment Analyser, described in the literature, in order to achieve speed and large number of determinations.

PERSONNEL: J.S. Scott, B.R. Pelletier, H.A. Lee, and L.S. Collett

DATE OF BEGINNING: January 1961

DATE OF COMPLETION:  
Research: 1962  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Nil

PUBLICATIONS OUTSTANDING: Nil

Instrument being reconstructed  
in glass and to be tested.

Inactive

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 240. Study of trace element adsorption by silicates.

LOCATION: Ottawa

OBJECTIVE: To obtain quantitative data on the amounts of trace elements adsorbed by silicate minerals and rocks, in order to develop a reasonable theory of the mechanisms that are operative in the formation, metamorphism, and metasomatism of silicate rocks.

PERSONNEL: R.A. Washington (resigned)

DATE OF BEGINNING: February 1961

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Nil

PUBLICATIONS OUTSTANDING: None

Transferred to O.P. 241

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 241. Study of trace element co-precipitation with hydrous iron oxides and silicates (includes O.P. 240).

**LOCATION:** Ottawa

**OBJECTIVE:** To measure quantitatively the amounts of trace elements co-precipitated with hydrous iron oxides.

**PERSONNEL:** R.A. Washington (resigned)

**DATE OF BEGINNING:** February 1961

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** Nil

**PUBLICATIONS OUTSTANDING:** As results dictate.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 243. Summary of geological structure and stratigraphy of Tete Jaune - Edson areas, Alberta and B.C. (83 SW).

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a summary map on 1 in. to 8 mi. scale. Structural relationship and economic importance will be appraised and discussed. To prepare for Bow-Athabasca Rockies project.

**PERSONNEL:** E.W. Mountjoy and R.J.W. Douglas

**DATE OF BEGINNING:** April 1961

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	(?)
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Preliminary Paper. Possible outside publication.

Superseded by Operation Bow-Athabasca  
G.S. 65-23 R.A. Price

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 245. Study of bottom sediments and contained microfossils obtained in 1960 by the Atlantic Oceanographic Group from Chaleur Bay and Gulf of St. Lawrence.

**LOCATION:** Ottawa

**OBJECTIVE:** To study the distribution of faunas and their relation to sedimentary texture, for the purpose of distinguishing between transported and indigenous species.

**PERSONNEL:** H.F. Sproule (B.Sc. Thesis)

**DATE OF BEGINNING:** May 1961

**DATE OF COMPLETION:**

Research:	1961
Prelim. pubs:	
Final pubs:	1964

**PUBLICATIONS:** None, thesis completed.

**PUBLICATIONS OUTSTANDING:** To be included in a bulletin. Prof. K. Hooper wishes to incorporate this material in a Ph.D. thesis.

Transferred to Marine Sciences Branch

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 246. Subsurface study of the Upper Cretaceous Belly River Group of southern Alberta.

LOCATION: Calgary

OBJECTIVE: To study and report on the lithology, subdivision, mappable limits and correlation of the Oldman and Foremost units of the Belly River Group using cuttings, cores, and e-logs of wells penetrating these rocks.

PERSONNEL: T.A. Oliver (Professor at U. of Alberta at Calgary)

DATE OF BEGINNING: May 1961

DATE OF COMPLETION:  
Research: September 1961  
Prelim. pubs: 1966  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Preliminary Paper.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 247. Travelling meteorite displays.

LOCATION: Ottawa

OBJECTIVE: To prepare meteorite displays illustrating characteristic features of meteorites, classification of meteorites, and impact craters in cooperation with NRC Associate Committee on Meteorites.

PERSONNEL: K.R. Dawson (in charge)

DATE OF BEGINNING: May 1961

DATE OF COMPLETION:

Research:	October 1961
Prelim. pubs:	None
Final pubs:	None

PUBLICATIONS: Script for tape recorder to accompany display. Captions and brochures describing the display.

PUBLICATIONS OUTSTANDING: None

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 251. Officer in charge of Mineralographic Laboratory.

LOCATION: Ottawa

OBJECTIVE: To be responsible for equipping, maintaining, safeguarding, and ensuring proper use of facilities of the new Mineralographic Laboratory. This does not constitute providing services to other staff members but only ensuring that facilities are available.

PERSONNEL: C.R. McLeod and technician

DATE OF BEGINNING: June 1961

DATE OF COMPLETION: Continuing  
Research:  
Prelim. pubs:  
Final pubs:

PUBLICATIONS:

PUBLICATIONS OUTSTANDING: None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 252. Graptolite Faunas, Gaspé Peninsula.

LOCATION: Ottawa

OBJECTIVE: To describe and figure graptolite faunas from Silurian and Ordovician rocks of Gaspé Peninsula and report on their stratigraphic significance.

PERSONNEL: L. M. Cumming

DATE OF BEGINNING: September 1961

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs: 1965

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 253. Ordovician Fossils from Sherman Inlet.

**LOCATION:** Ottawa

**OBJECTIVE:** To describe and figure the fossils collected in 1960 by W.W. Heywood (Operation Back River) and report upon their stratigraphic and correlative value.

**PERSONNEL:** G.W. Sinclair

**DATE OF BEGINNING:** 1961

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 254. Stress analysis of small scale geological structures.

**LOCATION:** Ottawa

**OBJECTIVE:** To model and attempt to evaluate the local stress and strain patterns in scale geological structures in the laboratory. To be carried out in collaboration with the engineering physics and rock mechanics groups of the Physical Metallurgy and Fuels and Mining Practice Division of the Mines Branch.

**PERSONNEL:** D.K. Norris

**DATE OF BEGINNING:** 1961

**DATE OF COMPLETION:**

    Research: Continuing

    Prelim. pubs:

    Final pubs:

**PUBLICATIONS:** Abstract in Paper 63-2.

**PUBLICATIONS OUTSTANDING:** Papers and reports as progress warrants.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 255. Theoretical study of electromagnetic radiation (subprojects 1-4).

**LOCATION:** Ottawa

**OBJECTIVE:**

1. To study theoretically the effect on the electromagnetic radiation of earth materials at the surface and in the subsurface.
2. Scale model studies.

**PERSONNEL:** L.S. Collett, B.K. Bhattacharyya, and others.

**DATE OF BEGINNING:** June 1961

**DATE OF COMPLETION:**

Research:	1965 (Preliminary stages complete)
Prelim. pubs:	1962-66
Final pubs:	(?)

**PUBLICATIONS:** Three outside publications in 1963, one in 1964.

**PUBLICATIONS OUTSTANDING:** As occasion demands.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 255+1, Electrical Rock Properties. .

**LOCATION:** Ottawa

**OBJECTIVE:**

1. DC resistivity and induced polarization on rocks, clays, sulphides in rocks, serpentized diorites, sericites, etc.
2. Correlation between electrical conductivity and magnetic susceptibility, e.g. Muskox specimens.

**PERSONNEL:** L.S. Collett

**DATE OF BEGINNING:** October 1963

**DATE OF COMPLETION:** Continuing

**Research:**

**Prelim. pubs:** 1965

**Final pubs:**

**PUBLICATIONS:** 1965 outside paper.

**PUBLICATIONS OUTSTANDING:** To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 255-2. Very low frequency (0.1 to 10 cps.) induced polarization equipment and pulsed EM.

**LOCATION:** Ottawa

**OBJECTIVE:** To develop very low frequency transmitter and receiver equipment for field use to measure change of resistivity with frequency and phase shift. Equipment will be used for geophysical investigation of Pleistocene deposits.

**PERSONNEL:** L.S. Collett, R.H. Ahrens, C. Gauvreau, and I. Faulks

**DATE OF BEGINNING:** February 1962

**DATE OF COMPLETION:** Continuing  
 Research:  
 Prelim. pubs:  
 Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be decided.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 255-3. Pulse scale model studies. .

LOCATION: Ottawa

OBJECTIVE: (1) To design half sine pulse transmitter of different pulse widths down to 1 microsecond.  
(2) To design receiver coil and pulse amplifier.  
(3) To carry out scale model tests in tank.

PERSONNEL: L.S. Collett and others

DATE OF BEGINNING: June 1963

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs: (?)  
Final pubs: (?)

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 255-4, Radiation Resistance Equipment.

**LOCATION:** Ottawa

**OBJECTIVE:** To develop field equipment to measure the radiation resistance of a loop.

**PERSONNEL:** L.S. Collett, R.H. Ahrens, and others

**DATE OF BEGINNING:** 1961

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 256. Palaeontology - submarine and nearby Pleistocene marine sediments.

**LOCATION:** Ottawa

**OBJECTIVE:** To describe and report upon fossils from submarine and nearby marine Pleistocene samples resulting from Polar Continental Shelf Project and other submarine geology projects.

**PERSONNEL:** F.J.E. Wagner

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	Continuing Project
Prelim. pubs:	1966
Final pubs:	(?)

**PUBLICATIONS:** Paper 61-27  
B.I.O. Report 64-1

**PUBLICATIONS OUTSTANDING:** Papers and Bulletins where warranted.

Transferred to Marine Sciences Branch

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 258. Compilation of sea-magnetometer data.

**LOCATION:** Atlantic Ocean

**OBJECTIVE:** To prepare magnetic contour maps from data recorded on hydrographic ships.

**PERSONNEL:** P.J. Hood and D. Reveler

**DATE OF  
BEGINNING:** 1959

**DATE OF  
COMPLETION:**  
Research: Continuing  
Prelim. pubs: 1961, 1962  
Final pubs: None

**PUBLICATIONS:** Papers 61-30, and 62-6.

**PUBLICATIONS  
OUTSTANDING:** Maps for limited distribution.  
Preliminary paper in preparation.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 260. Coal display.

LOCATION: Ottawa

OBJECTIVE: To act as coordinator in the preparation of display material depicting the Geological Survey's contribution to the study of coal in Canada.

PERSONNEL: P.A. Hacquebard

DATE OF BEGINNING: 1961

DATE OF COMPLETION:

Research:	1964?
Prelim. pubs:	--
Final pubs:	--

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: None

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 261. Groundwater levels in Canada.

LOCATION: Canada

OBJECTIVE: In cooperation with other government agencies to set up and maintain a Canada-wide network of observation wells.

PERSONNEL: I.C. Brown coordinator, R.G. Pearce records.

DATE OF BEGINNING: 1961

DATE OF COMPLETION:  
Research:) Continuing  
Prelim. pubs:) Continuing  
Final pubs:)

PUBLICATIONS: Nil

PUBLICATIONS OUTSTANDING: Annual publication when records merit.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 263. German translation.

**LOCATION:** Ottawa

**OBJECTIVE:** To check translations into German of brief abstracts of G.S.C. reports.

**PERSONNEL:** H. Frebald

**DATE OF BEGINNING:** 1961

**DATE OF COMPLETION:**  
Research: Continuing  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 264. Russian translations.

LOCATION: Ottawa

OBJECTIVE: To check translations into Russian of brief abstracts of G.S.C. reports.

PERSONNEL: J.A. Jeletzky

DATE OF BEGINNING: 1961

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: None



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 265. Diffusion studies.

**LOCATION:** Ottawa

**OBJECTIVE:** To conduct hydrothermal experimentation aimed at discovering the importance of diffusion in supercritical water under geological conditions. Objectives, in order of determination, will be (a) solubility and mechanism of solution of silicates in supercritical water, (b) diffusive motions of solids and fluids connected with this process, (c) possible applications of these transport phenomena to geological problems.

**PERSONNEL:** K.L. Currie

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	(?)
Final pubs:	(?)

**PUBLICATIONS:** Two papers in outside journals.

**PUBLICATIONS OUTSTANDING:** (?)

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 267. Experimental Mine.

LOCATION: Ottawa

OBJECTIVE: Engineering geology advice to Mines Branch on proposed experimental mine at Bells Corners.

PERSONNEL: E.B. Owen

DATE OF BEGINNING: November 1961

DATE OF COMPLETION:

Research:	1963
Prelim. pubs:	1962
Final pubs:	--

PUBLICATIONS: None, office report.

PUBLICATIONS OUTSTANDING: None, office reports only.

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 269. Petrographic examination of coking coal blends from Michel, B.C.

**LOCATION:** Ottawa

**OBJECTIVE:** To determine, by means of detailed petrographic studies of mined coal and seams in situ, the most suitable coking coal blends of this area. This program is carried out in cooperation with the Fuels Div. of the Mines Branch.

**PERSONNEL:** A.R. Cameron, P.A. Hacquebard, S.K. Babu, (Post Doctorate Fellow)

**DATE OF BEGINNING:** October 1961

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** One outside paper.

**PUBLICATIONS OUTSTANDING:** To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 273. Morphologic and Taxonomic Study of the Devonian Megafossil Floras of Eastern Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** A taxonomic and morphologic revision of Gaspé and related megafossil floras of Eastern Canada.

**PERSONNEL:** F.M. Hueber

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	
Final pubs:	?

**PUBLICATIONS:** One outside paper.

**PUBLICATIONS OUTSTANDING:** Each segment of descriptive work will be published when completed, Six or eight reports.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 274. Mobile spectrographic unit.

**LOCATION:** Ottawa

**OBJECTIVE:** To design a mobile spectrographic lab; to construct and equip it; to design and equip a laboratory in the Geological Survey building for winter use of the mobile spectrograph.

**PERSONNEL:** R.H.C. Holman, C.C. Durham, P.J. Lavergne, E.L. Carey

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	1961
Prelim. pubs:	--
Final pubs:	1965

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Report describing the unit.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 275. Geological Air Photographs of Canada.

LOCATION: Ottawa

OBJECTIVE: To compile an annotated list of air photographs of geological and allied features in Canada, for publication; to assemble an illustrated, annotated volume of outstanding air photographs of Canada for publication.

PERSONNEL: H.S. Bostock

DATE OF  
BEGINNING: January 1962

DATE OF  
COMPLETION:  
Research: January 1966  
Prelim. pubs: 1964  
Final pubs: 1966

PUBLICATIONS: Paper 64-36 (Physiography of Canada).

PUBLICATIONS  
OUTSTANDING: Probably a Bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 280. Preparation of an ultrabasic rock sample for analytical reference use.

**LOCATION:** Ottawa

**OBJECTIVE:** To collect, crush, grind and homogenize a sample of about 150 lbs. of ultrabasic rock and to analyze it for major, minor, and trace constituents, to serve as a laboratory reference sample.

**PERSONNEL:** J.A. Maxwell, W.H. Champ, C.H. Smith and staff of chemical and spectrographic laboratories.

**DATE OF BEGINNING:** Sample collected during Summer, 1962.

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	
Final pubs:	1965?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Probably a Survey Paper to describe work and tabulate results.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 282.

LOCATION: Ottawa (Calgary, starting July 1965)

OBJECTIVE: In cooperation with the representative of the Department of Public Works, to assist in the planning and erection of the proposed new G.S.C. western regional office building in Calgary, Alta.

PERSONNEL: B.A. Latour

DATE OF  
BEGINNING: 1962

DATE OF  
COMPLETION:  
Research: Late 1966, or 1967  
Prelim. pubs: None  
Final pubs: 1967

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Possibly miscellaneous publications after completion of building.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 283. Heath Steele Orebodies.

LOCATION: Ottawa

OBJECTIVE: To prepare for publication a paper on the Heath Steele Orebodies, presented orally before C.I.M., April, 1957. Data on hand to be amplified through visits to the mine and study of thin sections and polished sections.

PERSONNEL: D.R.E. Whitmore

DATE OF  
BEGINNING: 1962

DATE OF  
COMPLETION:  
Research: 1963  
Prelim. pubs: --  
Final pubs: 1964 or 1965

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 283. Heath Steele Orebodies.

LOCATION: Ottawa

OBJECTIVE: To prepare for publication a paper on the Heath Steele Orebodies, presented orally before C.I.M., April, 1957. Data on hand to be amplified through visits to the mine and study of thin sections and polished sections.

PERSONNEL: D.R.E. Whitmore

DATE OF BEGINNING: 1962

DATE OF COMPLETION:

Research:	1963
Prelim. pubs:	--
Final pubs:	1964 or 1965

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 284. Alexo Equivalents in the Jasper Area,  
Alberta (based in part on GS 59-14).

LOCATION: Ottawa

OBJECTIVE: 1. To elucidate certain controversial stratigraphic  
relationships in the Upper Devonian rocks in the  
Jasper Area.  
2. To erect a formational classification.

PERSONNEL: D.J. McLaren, E.W. Mountjoy

DATE OF  
BEGINNING: March 1962

DATE OF  
COMPLETION:  
Research: June 1962  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Paper 62-23

PUBLICATIONS  
OUTSTANDING: None

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 285. Sulphide Phase Study of Muskox Intrusion.

LOCATION: Ottawa

OBJECTIVE: To provide information that will help to explain the genesis of the ore mineral phases of the Muskox Intrusion relative to the history of the entire igneous body.

PERSONNEL: J.A. Chamberlain

DATE OF  
BEGINNING: 1962

DATE OF  
COMPLETION: 1965  
Research: (?)  
Prelim. pubs: (?)  
Final pubs:

PUBLICATIONS: Three outside papers in press.

PUBLICATIONS  
OUTSTANDING: One additional paper in 1965.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 287. Sea magnetometer and continuous sub-bottom profile reconnaissance of Hudson Bay (see also O.P. 258).

LOCATION: Ottawa and Field

OBJECTIVE: 1. To determine structures and depth to magnetic horizons under Hudson Bay.  
2. To interpret depth of detrital material over bedrock in Hudson Bay and profile of bedrock surfaces.

PERSONNEL: P.J. Hood, K.H. Owens,

DATE OF BEGINNING: June 1961

DATE OF COMPLETION:  
Research: (?)  
Prelim. pubs: 1962  
Final pubs: 1964

PUBLICATIONS: 1964, one outside paper.  
Bulletin in press.

PUBLICATIONS OUTSTANDING:

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 288. Composition of the Canadian Shield.  
This project will cancel and replace O.P. 270.

LOCATION: Ottawa

OBJECTIVE: To determine the average composition of the Canadian Shield; to determine the composition of individual cratonic segments of the Shield; to map aerial chemical variation within cratonic segments; to relate chemical abundances to mapped lithology.

PERSONNEL: W.F. Fahrig, K.E. Eade, J.A. Maxwell

DATE OF BEGINNING: October 1962

DATE OF COMPLETION:  
Research: November 1965  
Prelim. pubs:  
Final pubs: 1965

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 289. Mackenzie subsurface.  
Redefined to include O.P. 244.

**LOCATION:** Calgary

**OBJECTIVE:** To elucidate facies changes, structural relationship,  
and correlation of stratigraphic units in the subsurface.  
Special emphasis to be given to the Middle Devonian  
and pre-Devonian rocks.

**PERSONNEL:** E.J. Tassonyi

**DATE OF  
BEGINNING:** 1962

**DATE OF  
COMPLETION:**

Research:	1963
Prelim. pubs:	1965
Final pubs:	(?)

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 290, Study of the Paddy Member, Peace River Formation (Lower Cretaceous).

LOCATION: Calgary

OBJECTIVE: To determine the limits of the Paddy Member by examination of the type section and correlation with the subsurface by examination of well samples and mechanical logs.

PERSONNEL: R.L. Cox

DATE OF  
BEGINNING: 1962

DATE OF  
COMPLETION:  
Research: 1963  
Prelim. pubs: ?  
Final pubs: (?)

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: To be decided.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 292. Magnetic susceptibility measurements.

LOCATION: Ottawa

OBJECTIVE: To increase knowledge of magnetic susceptibility  
of Precambrian rocks.

PERSONNEL: A.S. MacLaren

DATE OF  
BEGINNING: 1962

DATE OF  
COMPLETION:  
Research: 1965  
Prelim. pubs: 1965  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 293. Construction of a portable gamma ray spectrometer.

**LOCATION:** McGill University

**OBJECTIVE:** To build a portable instrument that will selectively measure the radiation from K-40, U, and Th for use as a ground instrument.

**PERSONNEL:** R. Doig

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

- Research: 1963
- Prelim. pubs:
- Final pubs: (?)

**PUBLICATIONS:** (1) Operating Handbook for internal use completed.  
(2) Unpublished thesis.

**PUBLICATIONS OUTSTANDING:** Paper and outside publication.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 294. Late Silurian Trilobites from Arctic  
Canada.

LOCATION: Ottawa

OBJECTIVE: Examination and description of Trilobites collected  
from Late Silurian strata exposed on Ellesmere and  
surrounding Islands.

PERSONNEL: Thomas E. Bolton

DATE OF  
BEGINNING: June 1962

DATE OF  
COMPLETION:  
Research: Continuing  
Prelim. pubs: --  
Final pubs: --

PUBLICATIONS: Bulletin 134

PUBLICATIONS  
OUTSTANDING: To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 296. The stratigraphy of Stanley Smith's Mackenzie River Devonian Corals.

**LOCATION:** Ottawa

**OBJECTIVE:** To put Smith's corals (G.S.A. Special Paper No. 59) into a stratigraphic framework.

**PERSONNEL:** D.J. McLaren

**DATE OF BEGINNING:** June 1962

**DATE OF COMPLETION:**  
Research: 1964  
Prelim. pubs:  
Final pubs: (?)

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 297. Middle Devonian Ostracoda from Drill  
Cores, southwestern Ontario.

LOCATION: Ottawa

OBJECTIVE: By office examination to prepare reports on the  
above.

PERSONNEL: M. J. Copeland

DATE OF  
BEGINNING: May 30, 1962

DATE OF  
COMPLETION:  
Research: Continuing  
Prelim. pubs: Nil  
Final pubs: 1968

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 299. Pleistocene chronology and climate.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a summary account of the Pleistocene chronology and climate of Canada in relation to Archaeology, as requested by National Museum.

**PERSONNEL:** J. Terasmae, J.G. Fyles, O.L. Hughes with assistance of other officers of the Pleistocene section.

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

Research:	1962
Prelim. pubs:	--
Final pubs:	1964

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Chapter on Pleistocene Geology in "Archaeology in Canada", submitted, spring 1964.

Inactive

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 301. Recent Marine Sediments of Exeter Bay,  
N.W.T.

**LOCATION:** Ottawa

**OBJECTIVE:** To relate the petrography of bottom sediments of  
Exeter Bay, N.W.T. to known ocean currents, drift  
of ice flows, depth of water and submarine topography.

**PERSONNEL:** Kate M. Kranck

**DATE OF  
BEGINNING:** 1962

**DATE OF  
COMPLETION:**

Research:	1963
Prelim. pubs:	1964
Final pubs:	1964

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Bulletin, or G.S.C. paper in collaboration with  
F.J.E. Wagner.

Transferred to Marine Sciences Branch

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 303. Quantograph Laboratory.

LOCATION: Ottawa

OBJECTIVE: To set up a Quantograph laboratory, to devise, test,  
and modify analytical techniques using the Quantograph.

PERSONNEL: E.M. Cameron

DATE OF  
BEGINNING: 1959

DATE OF  
COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: None



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 304. (Aeromagnetic map of Canada)  
(1 subproject)

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare regional, residual and filtered magnetic maps, maps showing depths to magnetized bodies in the crust and showing the trends in orientation of bodies of both shallow and deep-seated origin for the whole of Canada.

**PERSONNEL:** B.K. Bhattacharyya, L.W. Morley and others

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:** 1970  
**Research:** Continuing  
**Prelim. pubs:**  
**Final pubs:**

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** Outside paper to be published in Jour. of Geomagnetism and Geoelectricity.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 304-1.

**LOCATION:** Ottawa

**OBJECTIVE:** To study the aeromagnetic data over large areas in New Brunswick and in Yukon and to determine the depth and extent of the crustal magnetic sources and also to investigate whether the predominant directions of polarization vectors are indicative of the geological age of the crustal material.

**PERSONNEL:** B.K. Bhattacharyya

**DATE OF BEGINNING:** February 1965

**DATE OF COMPLETION:**

Research:	March 1966
Prelim. pubs:	
Final pubs:	(?)

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 306. Rare mineral studies.

LOCATION: Ottawa

OBJECTIVE: To study new and rare minerals submitted to the X-ray laboratory for identification.

PERSONNEL: J.L. Jambor

DATE OF BEGINNING: 1961

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Six outside papers.

PUBLICATIONS OUTSTANDING: ?

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 307. X-ray spectrographic methods.

LOCATION: Ottawa

OBJECTIVE: Research and development work on X-ray spectrographic methods of analysis and their application to geological specimens.

PERSONNEL: G.R. Lachance

DATE OF BEGINNING: 1960

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Two outside papers;  
Papers 64-50, 64-57

PUBLICATIONS OUTSTANDING: Bulletin  
Two outside papers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 308. Electron Microanalysis.

LOCATION: Ottawa

OBJECTIVE: Research and development studies on electron probe instrumentation and applications of electron microanalysis to geological specimens.

PERSONNEL: R.J. Traill, G.R. Lachance

DATE OF BEGINNING: 1962

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: One outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 309. Study of micas.

**LOCATION:** Ottawa

**OBJECTIVE:** To study the mica family of rock-forming minerals so as to correlate physical, optical and X-ray properties with chemical composition and crystal structure and to relate these data to the origin, paragenesis, mode of occurrence and history of micas in rocks.

**PERSONNEL:** J. Rimsaite

**DATE OF BEGINNING:** 1959

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1962
Final pubs:	

**PUBLICATIONS:** Outside abstracts, two outside papers, Bulletin in press.

**PUBLICATIONS OUTSTANDING:** Outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 310. Mineral collecting areas.

**LOCATION:** Ottawa

**OBJECTIVE:** To compile and prepare for publication data on mineral collecting areas in Canada of particular interest to tourists and amateur collectors.

**PERSONNEL:** Ann P. Sabina

**DATE OF BEGINNING:** 1960

**DATE OF COMPLETION:**

Research:	1962
Prelim. pubs:	--
Final pubs:	1962 (?)

**PUBLICATIONS:** Paper 63-18, Misc. report 8, vols. I, II, III, Paper 64-10

**PUBLICATIONS OUTSTANDING:** To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 311. Plagioclase studies for Upper Mantle Project.

LOCATION: Ottawa

OBJECTIVE: A study of plagioclase feldspars that occur in Canadian gabbroic rocks as part of the Upper Mantle Project.

PERSONNEL: G. Pouliot

DATE OF  
BEGINNING: 1962

DATE OF  
COMPLETION:  
Research: 1965  
Prelim. pubs: 1965?  
Final pubs: 1966

PUBLICATIONS: 1965, outside abstract

PUBLICATIONS  
OUTSTANDING: Bulletin and outside papers.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 312. Granite Studies N.W. Ontario (in conjunction with Roads to Resources G.S. 59-19).

**LOCATION:** N.W. Ontario

**OBJECTIVE:** To evaluate the sampling density required adequately to represent the composition of a granite body. To test for genetic differences between adjacent, similar granitic bodies. To characterize granitic bodies asking such questions as: "are there any distinctive chemical parameters of the granites associated with ore deposits?" To evaluate rapid chemical analysis as a tool in mapping granitic areas.

**PERSONNEL:** R.F. Emslie, R.H.C. Holman, E.M. Cameron

**DATE OF BEGINNING:** June 1962

**DATE OF COMPLETION:**  
Research: Completed  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Paper or bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 313. Palynological and related studies of Pleistocene and Recent samples collected by G.S.C. personnel, other government agencies, and the general public. (Includes G.S. 61-42.)

**LOCATION:**

**OBJECTIVE:** To provide information regarding floras, environments and/or climates in Pleistocene or Recent times and thus provide data vital to field investigations.

**PERSONNEL:** J. Terasmae, R. Mott

**DATE OF BEGINNING:** July 1962

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** Results incorporated in various publications.

**PUBLICATIONS OUTSTANDING:** In reports by other officers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 314. Preparation of synthetic mixtures for infrared tests.

**LOCATION:** Ottawa

**OBJECTIVE:** Mixtures required for tests to be made on quantitative estimation of mineral content of rocks by manufacturers of infrared equipment.

**PERSONNEL:** S. Abbey

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

Research:	1962
Prelim. pubs:	None
Final pubs:	1964

**PUBLICATIONS:** Outside paper.

**PUBLICATIONS OUTSTANDING:** None

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 316. A preliminary investigation of the Compositions of Olivine and Plagioclase in the Michikamau Anorthosite.

**LOCATION:** New Que. & Nfld. (Lab.)

**OBJECTIVE:** To determine the range and manner of variation of olivine and plagioclase compositions through a stratigraphic thickness of some 25,000 feet in the anorthosite.

**PERSONNEL:** R.F. Emslie

**DATE OF BEGINNING:** November 1962

**DATE OF COMPLETION:**

Research:	1963
Prelim. pubs:	
Final pubs:	1965

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** One publication.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 317.

LOCATION: Calgary

OBJECTIVE: Cretaceous subsurface studies in northeastern British Columbia. In conjunction with Field Projects 58-16 and 61-14.

PERSONNEL: D.F. Stott

DATE OF BEGINNING: October 1962

DATE OF COMPLETION:  
Research: 1965  
Prelim. pubs: ?  
Final pubs: 1965

PUBLICATIONS: Bulletin 132

PUBLICATIONS OUTSTANDING: Two bulletins submitted. Preliminary papers and bulletins.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 318. Middle Ordovician stratigraphic and faunal study, southern Alberta and southeast British Columbia.

**LOCATION:** Ottawa

**OBJECTIVE:** To describe a sub-Mount Wilson Formation and its faunas. Field work as part of Field Project 61-19.

**PERSONNEL:** B.S. Norford

**DATE OF  
BEGINNING:** 1962

**DATE OF  
COMPLETION:**  
Research: 1965  
Prelim. pubs: 1965  
Final pubs: 1965

**PUBLICATIONS:** Bulletin in press

**PUBLICATIONS  
OUTSTANDING:** Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 322. Evaluation of aeromagnetic and photographic methods as aids in the regional geologic mapping of Grenville-type rocks.

**LOCATION:** Ottawa

**OBJECTIVE:** An attempt to develop procedures to assist the regional geologic mapping of Grenville-type rocks by means of complementary office and field studies comprising:

- (a) geologic interpretation of aeromagnetic maps
- (b) geologic interpretation of both conventional and especially-flown aerial photographs
- (c) geologic interpretation of supplementary geophysical information
- (d) geological investigations in the field.

**PERSONNEL:** A.F. Gregory, D.T. Anderson, K.H. Owens

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

- Research: 1964
- Prelim. pubs: ?
- Final pubs: ?

**PUBLICATIONS:** Internal Report; two outside papers.

**PUBLICATIONS OUTSTANDING:** Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 323. Monthly digest on current Mineral Exploration.

**LOCATION:** Ottawa

**OBJECTIVE:** To brief G.S.C. staff at monthly intervals on developments of geological interest in exploration, by scanning daily, weekly and monthly press.

**PERSONNEL:** A.G. Johnston

**DATE OF BEGINNING:** November 1962

**DATE OF COMPLETION:**

    Research: Continuing

    Prelim. pubs:

    Final pubs:

**PUBLICATIONS:** Monthly digests, mimeographed.

**PUBLICATIONS OUTSTANDING:** Monthly issues.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 324. Glaciation of south and southeast Yukon.

LOCATION:

OBJECTIVE: To map as accurately as possible the limits of glaciation, direction of ice-movement, and delineation of ice-divides.

PERSONNEL: J.O. Wheeler, H.S. Bostock, R.B. Campbell,  
J.E. Muller and O.L. Hughes

DATE OF  
BEGINNING: 1962

DATE OF  
COMPLETION:  
Research: 1964  
Prelim. pubs: 1965  
Final pubs: 1965

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Joint Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 325. Till characterization.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a booklet listing engineering parameters of till for N.A.C. Subcommittee on Pleistocene Geology.

**PERSONNEL:** J.S. Scott

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	?
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Till characterization manual being prepared.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 327. Restudy of Mississippian coral type specimens in the Geological Survey of Canada type collection.

LOCATION: Ottawa

OBJECTIVE: To provide a basis for the identification of several of the coral species common in the Canadian Rocky Mountains.

PERSONNEL: E.W. Bamber

DATE OF BEGINNING: 1962

DATE OF COMPLETION:  
Research: 1964  
Prelim. pubs: 1964  
Final pubs: 1964

PUBLICATIONS:

PUBLICATIONS OUTSTANDING: Bulletin submitted.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 328. Preparation of short papers on Mesozoic palynology.

LOCATION: Ottawa

OBJECTIVE: Data incorporated in internal reports, dealing with Mesozoic spores and pollen, will be prepared for publication from time to time. They will deal with the systematics of the fossils, and their botanical and geological implications.

PERSONNEL: D.C. McGregor

DATE OF BEGINNING: January 1963

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs: ?  
Final pubs: ?

PUBLICATIONS: Paper 64-55

PUBLICATIONS OUTSTANDING: Bulletins and outside papers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 329. Activation Analyses.

LOCATION: Ottawa and Chalk River

OBJECTIVE: To determine trace elements in rocks, soils, stream sediments, etc., with greater sensitivity than is possible by conventional techniques, and provide an independent check of the accuracy of other methods, by means of neutron activation analyses

PERSONNEL: R.A. Washington (resigned)

DATE OF BEGINNING: December 1962

DATE OF COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: As results dictate.

Inactive

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 330. Cretaceous index fossils.

LOCATION: Ottawa

OBJECTIVE: Cretaceous Index Fossils of Sedimentary Basins of  
Western and Arctic Canada (to replace O.P. 213-3).

PERSONNEL: J.A. Jeletzky

DATE OF  
BEGINNING: 1961

DATE OF  
COMPLETION:  
Research: 1964  
Prelim. pubs: --  
Final pubs: 1965

PUBLICATIONS: Paper 64-11. (Lower Cretaceous part).

PUBLICATIONS  
OUTSTANDING: G.S.C. Paper (Upper Cretaceous part).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 333.

LOCATION: Calgary

OBJECTIVE: Micropalaeontological Service Determinations  
of Operation Porcupine material.

PERSONNEL: T.P. Chamney and D.L. Herron

DATE OF  
BEGINNING: December 1962

DATE OF  
COMPLETION:  
Research: 1963 or 1964  
Prelim. pubs: ?  
Final pubs: ?

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 334.

LOCATION: Calgary

OBJECTIVE: Lower Cretaceous Neocomian micropalaeontology,  
Aklavik Range, District of Mackenzie.

PERSONNEL: T.P. Chamney and D.L. Herron

DATE OF  
BEGINNING: December 1962

DATE OF  
COMPLETION:  
Research: 1965  
Prelim. pubs: 1965  
Final pubs: 1965

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Bulletin submitted.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 336. Devonian of Alta., B.C., and Mackenzie.

**LOCATION:** Calgary

**OBJECTIVE:** Continuing study of the Devonian of Alberta, British Columbia and District of Mackenzie with emphasis on 1) the Slave Point and Beaverhill Lake transgressions, and 2) the unconformity between the Frasnian and Famennian stages in subsurface.

**PERSONNEL:** H.R. Belyea

**DATE OF BEGINNING:** Continuing

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Papers and final Memoir.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 337. Geological data on Northern Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** Compilation, organization, and appraisal of geological data acquired on Northern Canada under the Canada Oil and Gas Regulations and as published or on file.

**PERSONNEL:** Brian MacLean

**DATE OF BEGINNING:** January 1961

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 338. Radiocarbon variation in plants.

**LOCATION:** Ottawa

**OBJECTIVE:** To determine how the C<sup>14</sup> content of plants has varied, and is varying with time. Two parts: 1) study of 1,100 year old Douglas fir from Vancouver Island and 2) study of living plants collected annually.

**PERSONNEL:** W. Dyck, J.A. Lowdon (part 2)

**DATE OF BEGINNING:** 1962

**DATE OF COMPLETION:**

- Research: Part 1 1964, Part 2 1971
- Prelim. pubs: 1965 Part 1
- Final pubs: 1965 Part 1

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be decided. Report on pt. I in preparation.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 339. Examination of well cores.

**LOCATION:** Ottawa

**OBJECTIVE:** 1) To examine samples and cores of wells drilled, mainly in the Foothills of Alberta or where required for structural and stratigraphic purposes.  
2) In collaboration with other officers or independently, to prepare for publication the data on stratigraphy and structure obtained.

**PERSONNEL:** R.L. Herr

**DATE OF BEGINNING:** December 1959

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	1965
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Papers

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 340. To assist in editing translations of the Russian Journal of Palaeontology.

**LOCATION:** Ottawa

**OBJECTIVE:**

1. American Geological Institute will translate each issue.
2. The Palaeontology Section will assist in advising on publication in the International Geology Review and will provide experts in various fields to edit translations before publications, and to prepare abstracts of the papers.

**PERSONNEL:** Members of the Palaeontology Section.

**DATE OF BEGINNING:** 1963

**DATE OF COMPLETION:**

Research: Continuing

Prelim. pubs:

Final pubs:

**PUBLICATIONS:** Abstracts published regularly in International Geology Review.

**PUBLICATIONS OUTSTANDING:**

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 341. Palaeontology and stratigraphy of the Carboniferous and Permian of northern Yukon.

**LOCATION:** Ottawa

**OBJECTIVE:** Stratigraphic and palaeontological information obtained on Operation Porcupine will be assembled to present a general picture of the Carboniferous and Permian rocks of the Yukon north of the 65th parallel.

**PERSONNEL:** E.W. Bamber

**DATE OF BEGINNING:** March 1963

**DATE OF COMPLETION:**

Research:	1966
Prelim. pubs:	1966
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Bulletin  
Paper with M.S. Barss.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 342. Mississippian Correlations in the Jasper Area, Alberta.

**LOCATION:** Ottawa

**OBJECTIVE:** A study will be made of the fauna in the Rundle Fm., near Jasper, Alberta, to aid in the detailed correlation of sections measured in the area by E.W. Mountjoy. Collections made in September, 1962, will be used.

**PERSONNEL:** E.W. Bamber

**DATE OF BEGINNING:** December 1963

**DATE OF COMPLETION:**

Research:	1966
Prelim. pubs:	1966
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** 1 G.S.C. Paper, with possible further publications dealing primarily with palaeontology.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 343.

**LOCATION:** Ottawa

**OBJECTIVE:** The Jurassic Faunas of the Canadian Arctic Part III.

**PERSONNEL:** H. Frebald

**DATE OF BEGINNING:** 1963

**DATE OF COMPLETION:**

Research:	Continuing project
Prelim. pubs:	
Final pubs:	1964

**PUBLICATIONS:** Bulletin 119

**PUBLICATIONS OUTSTANDING:** G.S.C. Bulletin(s), depending on acquisition of additional material.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 344. Reconnaissance of Rocky Mountains.

LOCATION: Ottawa

OBJECTIVE: Preliminary reconnaissance geological study of unmapped parts of the Rocky Mountains 82J, N and O, in conjunction with O.P. 243.

PERSONNEL: R.A. Price, R.J.W. Douglas and E.W. Mountjoy

DATE OF BEGINNING: 1963

DATE OF COMPLETION:  
Research: 1965  
Prelim. pubs: ?  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING:

Transferred to G.S. 65-23

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 346. Cambrian of SE Cordillera.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare report on stratigraphy of Cambrian formations of southeastern Cordillera of Canada based on field and laboratory data.

**PERSONNEL:** D.K. Norris and R.A. Price

**DATE OF BEGINNING:** March 1963

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 347. Regionally developed cordierite, andalusite, and staurolite in the Shelburne map-area.

**LOCATION:** Nova Scotia

**OBJECTIVE:** The association of cordierite-andalusite in regionally metamorphosed rocks. This mineral association implies an abnormal chemical and/or physical history for this area. This history is closely allied with the development of the metamorphic minerals, chiefly cordierite, andalusite, and staurolite and therefore detailed examination of these and other associated minerals is necessary.

**PERSONNEL:** F.C. Taylor

**DATE OF BEGINNING:** 1963

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 349. Biostratigraphy of the Sooke and Carmanah Formations.

**LOCATION:** South and southwest coast of Vancouver Island, British Columbia.

**OBJECTIVE:** To present a new microfossil flora, and to review critically the geology, palaeontology and palaeobotany of these middle Tertiary units.

**PERSONNEL:** Raymond L. Cox

**DATE OF BEGINNING:** August 1, 1963

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 351. Marine biogeochemical investigation in Eastern Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** To investigate the effect of zinc pollution in river water on the zinc content in oysters living in the sea into which the rivers flow.  
To determine norms for the minor element content of some common species of marine organisms.

**PERSONNEL:** J.A. Fortescue, R.E. Drinnen (Fisheries Research Board)

**DATE OF BEGINNING:** 1963

**DATE OF COMPLETION:**  
Research: 1964  
Prelim. pubs:  
Final pubs: As results warrant.

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Short joint paper in outside journal.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 352. Survey of airborne pollen.

**LOCATION:** Ottawa

**OBJECTIVE:** Obtain record of airborne pollen at present time  
in various areas for comparison with fossil record.

**PERSONNEL:** J. Terasmae

**DATE OF  
BEGINNING:** April 1963

**DATE OF  
COMPLETION:**

Research:	Continuing
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** As results warrant.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 353. Coleoidea (=Dibranchiata) Volume,  
Treatise on Invertebrate Palaeontology (Dr. R.C.  
Moore, Editor).

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a summary of the present state of  
knowledge of this subclass of mollusks. See also  
O.P. 194.

**PERSONNEL:** J.A. Jeletzky in cooperation with M. Gordon, USGS.

**DATE OF  
BEGINNING:** 1960

**DATE OF  
COMPLETION:** 1965  
Research: 1965  
Prelim. pubs: 1964  
Final pubs: ?

**PUBLICATIONS:** Outside paper; outside abstract; Paper, "Summary".

**PUBLICATIONS  
OUTSTANDING:** Outside monograph (one of the volumes of the  
Treatise) and perhaps one or more outside papers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 354. Computer reduction of aeromag. data  
(subprojects 1-5).

**LOCATION:** Ottawa

**OBJECTIVE:** To study the possible use of available methods of  
interpretation of aeromagnetic data by a computer  
and to carry out research in more precise and  
suitable methods of data reduction and interpretation  
by a high speed digital computer.

**PERSONNEL:** B.K. Bhattacharyya, L.W. Morley, and others.

**DATE OF  
BEGINNING:** 1963

**DATE OF  
COMPLETION:**

Research:	Continuing
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Under subprojects.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 354-1. Automatic contouring of aeromagnetic data.

**LOCATION:** Ottawa

**OBJECTIVE:** To develop a computer method for analysis of gridded values of aeromagnetic data to determine the (x, y) coordinates at which specified magnetic field values occur and then to use the computer results for contouring aeromagnetic data by an x-y plotter.

**PERSONNEL:** B.K. Bhattacharyya and M. Aubin (seasonal)

**DATE OF BEGINNING:** May 1964

**DATE OF COMPLETION:** January 1965  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 354-2. Interpretive curves and formulae for prismatic bodies.

**LOCATION:** Ottawa

**OBJECTIVE:** To study the expression for the total field of a magnetized prismatic body in detail and to obtain interpretive curves and formulae for determining the depth and dimensions of body.

**PERSONNEL:** B.K. Bhattacharyya and W. Thatcher

**DATE OF BEGINNING:** March 1964

**DATE OF COMPLETION:**  
Research: December 1965  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 354-3. Power and amplitude spectra of the total field of magnetized bodies.

**LOCATION:** Ottawa

**OBJECTIVE:** To obtain expressions of power and amplitude spectra of total field values along profiles and also over an area and to study the effects of depth and dimensions of the magnetized body on the above quantities.

**PERSONNEL:** B.K. Bhattacharyya and A. Spector

**DATE OF BEGINNING:** March 1964

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** One outside paper in preparation.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 354-4, Grenville aeromagnetic data.

**LOCATION:** Ottawa

**OBJECTIVE:** To analyse the total field values of selected areas in the Grenville Subprovince, and prepare contour maps of the second derivative and the total field continued downward to the surface of the earth and also to calculate the total field reduced to the pole and its second derivative.

**PERSONNEL:** B.K. Bhattacharyya, A.F. Gregory and E.H. Gaucher

**DATE OF BEGINNING:** June 1964

**DATE OF COMPLETION:** December 1964  
 Research;  
 Prelim. pubs:  
 Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be decided.

Inactive

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 354-5. Analysis of aeromagnetic data over Ontario.

**LOCATION:** Ottawa

**OBJECTIVE:** To study the aeromagnetic data over a large area covering about 370 miles by 330 miles in northern Ontario and to determine the depth and extent of magnetized bodies in the crust of the earth.

**PERSONNEL:** L.W. Morley and B.K. Bhattacharyya

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:**

Research:	February 1965
Prelim. pubs:	1965
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 356.

**LOCATION:** Calgary

**OBJECTIVE:** Subsurface study of Triassic of northeastern British Columbia.

**PERSONNEL:** R.M. Procter with officers of National Energy Board.

**DATE OF BEGINNING:** May 1963

**DATE OF COMPLETION:**

Research:	August 1965
Prelim. pubs:	?
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 361. Groundwater in Canada.

**LOCATION:** Canada

**OBJECTIVE:** To prepare for publication in the Centennial Year a comprehensive report on groundwater in Canada that will serve both as an educational and reference text.

**PERSONNEL:** I.C. Brown editor - parts to be written by all members Eng. and Groundwater Geol. Section plus contributions by Geophysics, Pleistocene, Stratigraphy and other specialists.

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	
Final pubs:	1967

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Eco. Geol. Series MS submitted.

**GEOLOGICAL SURVEY OF CANADA**  
(Office and Laboratory Project)

**PROJECT:** O.P. 362.

**LOCATION:** Ottawa

**OBJECTIVE:** To act as Geological Survey Representative to the Exhibition Commission in the design and construction of a Canadian Exhibit for the International Geological Congress New Delhi, India, December, 1964.

**PERSONNEL:** A.S. MacLaren

**DATE OF BEGINNING:** July 22, 1963

**DATE OF COMPLETION:** July 1964  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:**

Completed



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 363. Illustrations of Appalachian Index Fossils.

**LOCATION:** Ottawa

**OBJECTIVE:** To summarize and illustrate important index fossils of pre-Carboniferous rocks in the Canadian Appalachians.

**PERSONNEL:** L. M. Cumming

**DATE OF BEGINNING:** September 1963

**DATE OF COMPLETION:**

**Research:** December 1963

**Prelim. pubs:**

**Final pubs:** (?)

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 366. Subsurface study of Mississippian Formations in Sylvan Lake-Gilby Area, south-central Alberta.

LOCATION: Calgary

OBJECTIVE: To make a detailed subsurface study of the Mississippian using cores, samples, and mechanical logs.

PERSONNEL: H.L. Martin

DATE OF BEGINNING: 1963

DATE OF COMPLETION:  
Research: 1964  
Prelim. pubs: 1965  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 367. Description of spectrographic rock analysis techniques as developed for the Quantograph.

**LOCATION:** Ottawa

**OBJECTIVE:** To describe the experimental work which leads to the development of the method used to analyse major rock constituents on the Quantograph.

**PERSONNEL:** E.M. Cameron, R.E. Horton

**DATE OF BEGINNING:** September 1963

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	0
Final pubs:	1964

**PUBLICATIONS:** 1965, outside paper.

**PUBLICATIONS OUTSTANDING:** Final report, outside paper being prepared.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 368. Aeromagnetic interpretation as a contribution to Coronation Project.

**LOCATION:** Coronation Mine Area, Saskatchewan.

**OBJECTIVE:** To investigate the reasons for two superficially similar diorites showing marked differences in magnetic expression in the field. Laboratory studies are to be undertaken to see if magnetic properties of the rocks themselves are sufficient explanation or if deeper causes must be looked for.

**PERSONNEL:** D.R.E. Whitmore, A.S. MacLaren, J.J. Lynch, D.J. McClure

**DATE OF BEGINNING:** October 1, 1963

**DATE OF COMPLETION:**

Research:	December 15, 1963
Prelim. pubs:	
Final pubs:	September 1964

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Joint paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 371. Water level recording in small-diameter holes.

**LOCATION:** Ottawa

**OBJECTIVE:** To investigate available devices and select the best for field testing. To develop equipment if available instruments do not fully meet requirements.

**PERSONNEL:** R.O. van Everdingen

**DATE OF  
BEGINNING:** 1964

**DATE OF  
COMPLETION:**  
Research: 1966  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** In Paper 65-2

**PUBLICATIONS  
OUTSTANDING:** Possible paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 372. Cambrian Geochronology.

**LOCATION:** Ottawa

**OBJECTIVE:** To establish the age of certain precisely defined stratigraphic horizons in the Middle Cambrian by means of K-Ar age determinations on glauconite from glauconitic limestones with closely related Middle Cambrian trilobite faunas.

The results of this study will be used as a check on the time-position of Middle Cambrian in the geological time-scale.

**PERSONNEL:** R.D. Stevens and J.D. Aitken

**DATE OF  
BEGINNING:** 1963

**DATE OF  
COMPLETION:**  
Research: 1964  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** In Paper 64-2, pp. 59-60.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 373. Upper Volgian (=Uppermost Jurassic) ammonites and Buchia of Arctic Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** To describe and illustrate the important uppermost Jurassic fossils recently discovered in Arctic Canada.

**PERSONNEL:** J.A. Jeletzky

**DATE OF BEGINNING:** November 1963

**DATE OF COMPLETION:**

Research:	December 1964
Prelim. pubs:	
Final pubs:	1965

**PUBLICATIONS:** Bulletin in press.

**PUBLICATIONS OUTSTANDING:**

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 374. Volcanic Rocks of Canada.

LOCATION:

OBJECTIVE: Preliminary phase of the study of volcanism  
and volcanic rocks in Canada.

PERSONNEL: W.R.A. Baragar

DATE OF  
BEGINNING: 1963

DATE OF  
COMPLETION:  
Research: 1964  
Prelim. pubs: 1966?  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Preliminary Map?



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 375. Glacial Geomorphology of Central B.C.

**LOCATION:** B.C.

**OBJECTIVE:** A description of the features with discussion of their origin and an interpretation of the glacial history of the region. This will be a summation of information and ideas resulting from 16 years field work in this region.

**PERSONNEL:** H.W. Tipper

**DATE OF  
BEGINNING:** 1963

**DATE OF  
COMPLETION:**  
Research: 1965  
Prelim. pubs: 1966  
Final pubs: 1966

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Memoir or Bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 377. Summary account of Ordovician and Silurian rocks of Western Cordillera, Alberta and B.C.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare the above summary for inclusion in symposium being prepared by the Alta. Society of Petroleum Geologists on the Geological History of Western Canada.

**PERSONNEL:** B.S. Norford

**DATE OF BEGINNING:** December 2, 1963

**DATE OF COMPLETION:**

Research:	December 23, 1963
Prelim. pubs:	
Final pubs:	1965

**PUBLICATIONS:** One outside publication 1965.

**PUBLICATIONS OUTSTANDING:**

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 378. Preliminary Map (Palaeozoic) Carleton Place, Ontario.

**LOCATION:** Ottawa

**OBJECTIVE:** To compile the Palaeozoic geology part of the Carleton Place sheet 31P/1. The Precambrian part mapped by W. Reinhardt (G.S. 62-32).

**PERSONNEL:** B.A. Liberty

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:**  
Research: 1964  
Prelim. pubs: 1964?  
Final pubs:

**PUBLICATIONS:** Map 7-1964 (Reinhardt and Liberty)

**PUBLICATIONS OUTSTANDING:**

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 379. (See also O.P. 162)

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a revised geological map of Canada on the scale of 1 to 5,000,000 for publication during the Centennial Year.

**PERSONNEL:** A.H. Lang

**DATE OF BEGINNING:** January 2, 1964

**DATE OF COMPLETION:**

Research:	December 31, 1965
Prelim. pubs:	
Final pubs:	1967

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** As above.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 380. Compilation of aeromagnetic maps covering area north of Great Slave Lake, N.W.T.

**LOCATION:** Yellowknife, N.W.T.

**OBJECTIVE:** To compile an aeromagnetic map or maps, at 1 inch to 8 miles, from the results of current and recent aeromagnetic surveys.

**PERSONNEL:** E.A. Schiller

**DATE OF BEGINNING:** January 1964

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Paper being prepared.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 381. Pleistocene Map of Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** To compile a Pleistocene map of Canada for publication at a scale of 1 to 5 million.

**PERSONNEL:** V.K. Prest

**DATE OF BEGINNING:** April 1964

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	1966 (?)

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** Final Map, probably accompanying Ec. Geol. 1.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 382. Economic Geology Report No. 1  
5th Edition (Centenary Edition) (subprojects 1-6).

**LOCATION:** Ottawa

**OBJECTIVE:** To plan, coordinate and edit a revision of the Geology  
and Economic Minerals of Canada for publication as  
Centenary Volume.

**PERSONNEL:** R.J.W. Douglas

**DATE OF  
BEGINNING:** January 1964

**DATE OF  
COMPLETION:**

Research:	December 1965
Prelim. pubs:	
Final pubs:	1967

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Economic Geology Report 1, 5th Edition  
(Centenary Volume).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 382-1. Economic Geology Report 1, 5th Edition.

**LOCATION:** Calgary

**OBJECTIVE:** To prepare text and illustrations on the Mesozoic and Cenozoic of Interior plains and Eastern Cordillera as contribution to the above report.

**PERSONNEL:** D.F. Stott

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:**

**Research:** 1966

**Prelim. pubs:**

**Final pubs:** 1967

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Economic Geology Report No. 1, 5th Edition (Centenary Volume).



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 382-2. St. Lawrence Lowland.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a summary of the Palaeozoic Geology of St. Lawrence Lowland region, Ontario, and Quebec for inclusion in the 5th Edition, Geology and Economic Minerals of Canada.

**PERSONNEL:** B.V. Sanford

**DATE OF BEGINNING:** May 1, 1964

**DATE OF COMPLETION:**

Research:	September 1964
Prelim. pubs:	
Final pubs:	1967

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Contribution to 5th Edition, Econ. Geol. Rept. 1.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 382-3. Economic Geology Report No. 1,  
5th Edition.

**LOCATION:** Calgary

**OBJECTIVE:** To prepare text and illustrations on the geologic  
succession in the Interior Plains as a contribution  
to the above report.

**PERSONNEL:** Helen R. Belyea

**DATE OF  
BEGINNING:** 1964

**DATE OF  
COMPLETION:**

Research:	1965
Prelim. pubs:	
Final pubs:	1967

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Economic Geology Report No. 1, 5th Edition  
(Centenary Volume).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 382-4. (a) Geology and Economic Minerals of Canada  
(b) Economic Mineral Map of Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** (a) To prepare for publication in EG 1 (5th Edition) an account of the conomic geology and representative mineral deposits of The Canadian Shield.  
(b) To prepare a coloured map of Canada to show the present and past producing metal mines, oil and gas fields, and important non-metallic deposits in relation to the geology and tectonic history.

**PERSONNEL:** (a) D.R.E. Whitmore (b) D.R.E. Whitmore, A.G. Johnston, S.M. Roscoe, W.D. McCartney, H.W. Little, H. Belyea, et al.

**DATE OF BEGINNING:** (a) April 15, 1964  
(b) May 1, 1964

**DATE OF COMPLETION:**  
Research: (a) April 15, 1964 (b) Summer, 1965  
Prelim. pubs:  
Final pubs: 1967

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** (a) Section of Econ. Geol. Rept. 1 (5th Edition)  
(b) Economic Mineral Map of Canada.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 382-5. Chapter on Pleistocene geology.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a chapter on the Pleistocene geology of Canada for the E.G. 1, 5th Edition.

**PERSONNEL:** V.K. Prest

**DATE OF BEGINNING:** April 1964

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	
Final pubs:	1966 (?)

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Chapter in Ec. Geol. Series 1 (5th Edition).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 382-6.

**LOCATION:** Ottawa

**OBJECTIVE:** Economic geology of the Canadian Appalachians for inclusion in Econ. Geol. Series No. 1 (5th Edition).

**PERSONNEL:** W.D. McCartney

**DATE OF BEGINNING:** July 1964

**DATE OF COMPLETION:**

Research:	January 1965
Prelim. pubs:	
Final pubs:	September 1965

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Final part of text.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 383. Rhynchonelloidea.

**LOCATION:** Ottawa

**OBJECTIVE:** To examine and revise partly completed MS of Dr. Herta Schmidt (Senckenberg Institute, Frankfurt) on the Order Rhynchonelloidea, and to complete description and classification of all genera for publication in volume on Brachiopoda in Treatise on Palaeontology.

**PERSONNEL:** D.J. McLaren

**DATE OF BEGINNING:** January 1964

**DATE OF COMPLETION:**

Research:	April 1964
Prelim. pubs:	
Final pubs:	1965

**PUBLICATIONS:** MS submitted to Dr. Moore.

**PUBLICATIONS OUTSTANDING:** To be published in the volume on Brachiopoda, Treatise on Invertebrate Palaeontology - under general editorship of Dr. R.C. Moore.

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 384. Development of Ore Polishing Techniques with the Durener Polishing Machine.

**LOCATION:**

**OBJECTIVE:** To obtain high quality polished sections of ores and related minerals with the Durener Polishing Machine.

**PERSONNEL:** C.R. McLeod

**DATE OF BEGINNING:** May 1963

**DATE OF COMPLETION:** 1st stage by May 1963.  
Research: Continuing indefinitely at about 10% of time per year.  
Prelim. pubs: Progress Reports  
Final pubs:

**PUBLICATIONS:** Paper 64-2, pp. 78 and 79.

**PUBLICATIONS OUTSTANDING:** Papers or notes to technical journals.  
Survey bulletin (?) on polishing techniques.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 385. Ore Reference Collection of Polished Section.

**LOCATION:** Ottawa

**OBJECTIVE:** To produce a reference collection of high quality polished sections of ore minerals to identify the ore minerals, to establish a method of locating the various minerals on the section, and to set up an appropriate indexing system.

**PERSONNEL:** C.R. McLeod

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:** 1966?

**Research:**

**Prelim. pubs:** ?

**Final pubs:** ?

**PUBLICATIONS:** Nil

**PUBLICATIONS OUTSTANDING:** Possible report on methods.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 386. Upper Mantle exhibit for 1967  
World's Fair.

LOCATION: Ottawa

OBJECTIVE: To design a display depicting the Upper Mantle  
covering not more than 5,000 sq. feet of floor  
space. Estimated cost \$250,000. Funds from  
World's Fair.

PERSONNEL: A.S. MacLaren

DATE OF  
BEGINNING: February 1, 1964

DATE OF  
COMPLETION: 1967  
Research:  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 387. Gold properties of Gordon Lake area,  
N.W.T.

LOCATION: Yellowknife, N.W.T.

OBJECTIVE: To study and describe the many gold-bearing  
deposits of this area as a means of arriving at  
criteria that will assist in the search for and  
development of gold deposits there and elsewhere.

PERSONNEL: E.H. Hornbrook

DATE OF  
BEGINNING: February 1964

DATE OF  
COMPLETION:  
Research:  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING:

Cancelled (August 1964)

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 388.

LOCATION: Ottawa

OBJECTIVE: To study radioactive nuclides in meteorites.

PERSONNEL: R.A. Washington (resigned), W. Dyck

DATE OF  
BEGINNING: October 1964 (estimated)

DATE OF  
COMPLETION:  
Research: Continuing  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: As results dictate.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 389.

**LOCATION:** Central B.C.

**OBJECTIVE:** Compilation of a Geological and Tectonic Framework  
in Cordillera in Central British Columbia.  
  
Part of a larger project for whole Cordillera.

**PERSONNEL:** R.B. Campbell, J.A. Roddick, J.G. Souther,  
J.O. Wheeler

**DATE OF  
BEGINNING:** 1964

**DATE OF  
COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Oral presentation at CIMM-AIME meeting in  
Vancouver 1964. Publication in 1966.  
MS forwarded - Campbell, Roddick, Armstrong,  
Wheeler.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 390. Tectonic framework of B.C.

**LOCATION:** Vancouver

**OBJECTIVE:** In cooperation with officers of Regional Geology Division in Vancouver, to describe the tectonic framework of B.C.

**PERSONNEL:** J.E. Armstrong, and Vancouver geologists of Regional Geology Division.

**DATE OF BEGINNING:** April 1964

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	nil
Final pubs:	1965

**PUBLICATIONS:** Outside paper in press.

**PUBLICATIONS OUTSTANDING:** Nil

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 391. Contribution to Seventh Inqua Congress  
guide-book.

**LOCATION:** Vancouver and Ottawa

**OBJECTIVE:** To prepare a description of the Pleistocene geology  
of parts of southwestern B.C. for guide-book to  
Seventh Inqua Congress field trip, 1965.

**PERSONNEL:** J.E. Armstrong and R.J. Fulton

**DATE OF  
BEGINNING:** October 1964

**DATE OF  
COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	1965

**PUBLICATIONS:** Manuscript submitted (1965) for publication.

**PUBLICATIONS  
OUTSTANDING:**

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 392.

**LOCATION:** Canadian Shield

**OBJECTIVE:** Prepare a paper summarizing palaeomagnetic and geologic data on some diabase dykes of Canadian Shield.

**PERSONNEL:** W.F. Fahrig

**DATE OF BEGINNING:** April 1964

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	1964

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:**

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 393. Quaternary palynological sampling techniques.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare a report describing palynological field methods and techniques and outlining experience with various kinds of sampling equipment.

**PERSONNEL:** R. J. Mott

**DATE OF BEGINNING:** April 1964

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	1965
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Paper



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 394. Determination of formation tops in wells north of 63°00'.

**LOCATION:** Ottawa

**OBJECTIVE:** From study of mechanical logs and cores and samples of wells drilled for oil and gas, to determine formation tops and describe the subsurface geology.

**PERSONNEL:** E.J. Tassonyi, R.M. Procter, Helen R. Belyea

**DATE OF BEGINNING:** 1961

**DATE OF COMPLETION:**  
Research: Continuing project  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** Formation tops are supplied to Dept. Northern Affairs and National Resources for use in preparation of Schedule of Wells published periodically by that Department.

**PUBLICATIONS OUTSTANDING:** As above.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 395.

LOCATION: Ottawa

OBJECTIVE: Design and construction of a mechanical panning device for mineral separation in the field and laboratory.

PERSONNEL: P.J. Lavergne

DATE OF BEGINNING: 1964

DATE OF COMPLETION:

Research:	1965
Prelim. pubs:	nil
Final pubs:	nil

PUBLICATIONS: nil

PUBLICATIONS OUTSTANDING: To be decided.

(The mechanical panner may warrant technical description, dependant on originality and effectiveness.)

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 396. History of the Mer Bleu bog.

**LOCATION:** Ottawa

**OBJECTIVE:** As part of an interdisciplinary program of investigation of the Mer Bleu, to investigate the bottom contour of the bog, its peat and pollen stratigraphy, relation between present pollen deposition and vegetation, and to prepare outline maps showing stages of development of the bog in this abandoned channel of the Ottawa River.

**PERSONNEL:** J. Terasmae, R.J. Mott

**DATE OF BEGINNING:** Spring 1964

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Paper in special volume of Ottawa Field Naturalist.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 397. Platinum Metals in Meteorites.

**LOCATION:** Ottawa

**OBJECTIVE:** To make a chemical study of the abundances of the platinum group metals in iron and stony meteorites as a contribution to our knowledge of the cosmic abundances of these elements the development of a theory for the nucleosynthesis of these elements in the solar system, and the origin of meteorites. The methods used can be extended to the determination of platinum metals in ultrabasic rocks.

**PERSONNEL:** J.G. Sen Gupta

**DATE OF BEGINNING:** May 8, 1964

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 399. Age and Source of Igneous Pebbles in the Lower Cretaceous Blairmore Group.

**LOCATION:** Ottawa

**OBJECTIVE:** To determine the isotopic age of selected igneous pebbles in conglomerates in the upper part of the Blairmore Group with a view to establishing their source and elucidating the physical history of the southeastern Canadian Cordillera during the Albian.

**PERSONNEL:** D.K. Norris, R.K. Wanless, R.D. Stevens

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:** Spring 1965

    Research:  
    Prelim. pubs:  
    Final pubs: 1965

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** Paper in Journal of Earth Sciences?

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 400. Advice to Mineral Resources and External Aid.

**LOCATION:** Ottawa

**OBJECTIVE:** To advise Mineral Resources Division and External Aid regarding matters in the geological and mineral exploration fields.

**PERSONNEL:** D.R.E. Whitmore and other Geological Survey officers whose special knowledge may be called on.

**DATE OF BEGINNING:** July 1963

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Internal reports and memos as needed.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 401. Iso-bio-geo-chemical investigation of the take up of minor elements by forest plants.

**LOCATION:** Ottawa

**OBJECTIVE:** To test feasibility of using non-radioactive isotopic + tracers in experiments designed to test the rate of movement of elements through the soil and the uptake of elements by different Canadian forest species.

**PERSONNEL:** R.K. Wanless, J.A. Fortescue

**DATE OF BEGINNING:** June 1964

**DATE OF COMPLETION:**

Research:	1964
Prelim. pubs:	
Final pubs:	(?)

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 402. Bedded - Non-bedded deposits.

**LOCATION:** Ottawa

**OBJECTIVE:** To act on behalf of Director in advising the Deputy Minister regarding the certification of mineral deposits as bedded or non-bedded for Income Tax Purposes.

**PERSONNEL:** D.R.E. Whitmore together with other Survey officers whose special knowledge may be called on.

**DATE OF BEGINNING:** February 14, 1964

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Internal reports and memos as needed.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 403. MAD Surveys.

**LOCATION:** Canada

**OBJECTIVE:** To cooperate with the National Aeronautical Establishment in the development of aeromagnetic surveying techniques using highly-sensitive digitized instrumentation and the carrying out of aeromagnetic surveys over continental shelves and the deep ocean.

**PERSONNEL:** P.J. Hood and M.E. Bower

**DATE OF BEGINNING:** May 1962

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	
Final pubs:	

**PUBLICATIONS:** 1964 (Hood and Godby), outside publication; 1965 outside publication (Hood and Godby).

**PUBLICATIONS OUTSTANDING:** 46 aeromagnetic maps of Scotia Shelf.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 404. Magnetic Vertical Gradient Measurements.

**LOCATION:** Ottawa

**OBJECTIVE:** Development of technique of making measurement and interpretation of resultant data.

**PERSONNEL:** P.J. Hood

**DATE OF BEGINNING:** December 1963

**DATE OF COMPLETION:**  
     Research: Continuing  
     Prelim. pubs: 1965  
     Final pubs: ?

**PUBLICATIONS:** 1965 outside paper (Hood and McClure).

**PUBLICATIONS OUTSTANDING:** Outside paper (Hood) submitted.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 405. Mobile spectrographic and chemical laboratory for biogeochemical research.

**LOCATION:** Ottawa during winter, various locations during summer.

**OBJECTIVE:** To design a mobile spectrographic and chemical laboratory and a sample preparation trailer for biogeochemical research and biogeochemical prospecting research. Laboratories to be used in Ottawa during winter and in field during summer.

**PERSONNEL:** J.A.C. Fortescue

**DATE OF BEGINNING:** 1963

**DATE OF COMPLETION:** Spectrographic laboratory completed 1964. Sample preparation lab. completed, 1965. Run in and development of methods of analysis to be completed 1965.

**Research:**  
    **Prelim. pubs:** (?)  
    **Final pubs:** 1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Two papers.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 406. Construction of an alternating field magnetic washer.

**LOCATION:** Ottawa

**OBJECTIVE:** To test magnetic stability of rocks by the alternating field technique and eliminate the isothermal or viscous magnetization components from palaeomagnetic samples.

**PERSONNEL:** A. Larochelle

**DATE OF BEGINNING:** April 25, 1964

**DATE OF COMPLETION:** October 1, 1964  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** 1965 outside paper (Larochelle and Black).

**PUBLICATIONS OUTSTANDING:**

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 407. Stones of the Parliament Buildings,  
Ottawa.

LOCATION: Ottawa

OBJECTIVE: To revise and prepare for publication a manuscript  
by Dr. Alice E. Wilson on the stones, fossils and  
sculptors of the Parliament Buildings. The result  
to be a 'popular account', illustrated in the manner  
of the present National Parks reports of the  
Miscellaneous Series.

PERSONNEL: S.E. Jenness

DATE OF  
BEGINNING: July 1964

DATE OF  
COMPLETION:  
Research: March 1966  
Prelim. pubs:  
Final pubs: 1967

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: Miscellaneous Series booklet.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 408.

LOCATION:

OBJECTIVE:

PERSONNEL: E.A. Schiller

DATE OF  
BEGINNING:

DATE OF  
COMPLETION:  
Research:  
Prelim. pubs:  
Final pubs:

PUBLICATIONS:

PUBLICATIONS  
OUTSTANDING:

Project Cancelled

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 409. Historical Photographs.

**LOCATION:** Ottawa

**OBJECTIVE:** To publish a Bulletin reproducing 150 to 200 photographs of historical interest in the G.S.C. collection. Text to be kept to a minimum.

**PERSONNEL:** E. Hall

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	--
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 410.

LOCATION: Calgary

OBJECTIVE: Examination of well core on Morley Indian Reserve,  
Alberta.

PERSONNEL: R.M. Procter and H.L. Martin

DATE OF  
BEGINNING: August 15, 1964

DATE OF  
COMPLETION: April 23, 1965  
Research:  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Confidential Report to Indian Affairs.

PUBLICATIONS  
OUTSTANDING: None

Completed



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 411. Analysis of Proposed Reference Rock Powders prepared by U.S. Geological Survey.

**LOCATION:** Ottawa

**OBJECTIVE:** To determine the major, minor, and trace element composition of these reference rock powders by chemical and instrumental methods, as a contribution towards the final certification of these powders as primary reference samples.

**PERSONNEL:** Staff, Analytical Chemistry Section.

**DATE OF BEGINNING:** September 1964

**DATE OF COMPLETION:**  
Research: 1965?  
Prelim. pubs: none  
Final pubs: none

**PUBLICATIONS:** none

**PUBLICATIONS OUTSTANDING:** Data will be incorporated in summary of results to be collected by USGS and issued at some future date.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 412. Lectures to Rockhounds.

**LOCATION:** Vancouver, B.C.

**OBJECTIVE:** To give a course of lectures on geology in Vancouver night schools designed for rockhounds and interested amateurs.

**PERSONNEL:** S. Leaming and staff of the Vancouver office.

**DATE OF BEGINNING:** 1964

**DATE OF COMPLETION:**

Research:	Continuing on demand
Prelim. pubs:	nil
Final pubs:	nil

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 413. Stages, substages and ammonite zones of North American Triassic.

**LOCATION:** Ottawa

**OBJECTIVE:**

- (1) In collaboration with N.J. Silberling, U.S.G.S. to compile all known data on relative stratigraphic position and age of Triassic ammonite zones of Canada.
- (2) To produce a time-stratigraphic scheme applicable to Triassic rocks of Canada and U.S.A.

**PERSONNEL:** E.T. Tozer and H.J. Silberling (U.S.G.S.)

**DATE OF BEGINNING:** September 1964

**DATE OF COMPLETION:**

**Research:** December 1964

**Prelim. pubs:**

**Final pubs:** 1965

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:**

- (1) Table for inclusion in new edition of G.S.C. Paper 62-19.
- (2) Joint paper with Dr. Silberling probably for publication in Geol. Soc. of America.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 414. Silver in Canada, Metallogenic Map.

LOCATION: Ottawa

OBJECTIVE: To compile a map of silver occurrences in Canada from published literature and files of the Department.

PERSONNEL: A.G. Johnston

DATE OF BEGINNING: Spring 1963

DATE OF COMPLETION: 1965  
Research:  
Prelim. pubs:  
Final pubs:

PUBLICATIONS:

PUBLICATIONS OUTSTANDING: Metallogenic map to accompany Silver report by R.W. Boyle.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 415. Lower Cretaceous (Albian) Stratigraphy  
of Peel and Snake Rivers, Yukon Territory.

**LOCATION:** Calgary

**OBJECTIVE:** To aid in new stratigraphic interpretations obtained  
on Operation Porcupine.

**PERSONNEL:** T.P. Chamney and E.W. Mountjoy

**DATE OF  
BEGINNING:** September 1963

**DATE OF  
COMPLETION:**  
Research: 1965  
Prelim. pubs: ?  
Final pubs: ?

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** G.S.C. Paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 416.

**LOCATION:** Calgary

**OBJECTIVE:** Mesozoic Micropalaeontology, Operation Mackenzie  
Material (collected by D.F. Stott).

**PERSONNEL:** T.P. Chamney

**DATE OF  
BEGINNING:** October 1964

**DATE OF  
COMPLETION:** ?  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Microfossil Zonation to be published.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 417. Computer-oriented research on mineral deposits.

LOCATION: Ottawa

OBJECTIVE: To investigate the significance of samples with the aid of a computer.

PERSONNEL: F.P. Agterberg

DATE OF BEGINNING: 1964

DATE OF COMPLETION:  
Research: ? January 1965  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: Outside paper.

PUBLICATIONS OUTSTANDING: None

Completed

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 418.

LOCATION: Ottawa

OBJECTIVE: (a) To examine feasibility of applying data processing techniques to the storage and retrieval of geological data in Canada.  
(b) To act as chairman of a National Committee appointed to make a further study of the above.

PERSONNEL: S.C. Robinson

DATE OF  
BEGINNING: 1964

DATE OF  
COMPLETION:  
Research: (a) 1965, (b) continuing  
Prelim. pubs: Interim Report January 1965  
Final pubs:

PUBLICATIONS: Unpublished report.

PUBLICATIONS  
OUTSTANDING: None



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 419. Favel and Vermillion River Formations  
(white specks) of Saskatchewan and Manitoba.

**LOCATION:** Calgary

**OBJECTIVE:** To compile geological information from outcrops and  
cores and prepare report indicating oil and gas potential  
of the formations and including data on all content of  
the shale.

**PERSONNEL:** L.L. Price

**DATE OF  
BEGINNING:** October 1964

**DATE OF  
COMPLETION:**  
Research: January 1965  
Prelim. pubs: 1966  
Final pubs: 1966

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** G.S.C. Paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 420. Geological Observations at International Minerals and Chemical No. 2 Shaft, Esterhazy, Saskatchewan.

**LOCATION:** Calgary

**OBJECTIVE:** To make a geological study, sampling, on a fossil collecting of the formations penetrated during sinking of the (potash) shaft.

**PERSONNEL:** L.L. Price and Seasonal T.O.

**DATE OF BEGINNING:** May 1964

**DATE OF COMPLETION:**  
Research: ? 1966  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper (S)

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 421. Stratigraphy and Correlation of Cretaceous and late Upper Jurassic rocks of Taseko Lakes area, B.C.

**LOCATION:** Ottawa

**OBJECTIVE:** To summarize available information on the age and correlation of these rocks. Only the Buchia-bearing Jurassic rocks are included.

**PERSONNEL:** J.A. Jeletzky and H.W. Tipper

**DATE OF BEGINNING:** December 1964

**DATE OF COMPLETION:**  
     Research: 1965  
     Prelim. pubs: 1965  
     Final pubs: 1965

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 422. Investigation of the relative argon retentivity in suites of primary potassium bearing minerals and associated alteration products.

**LOCATION:** Ottawa

**OBJECTIVE:** To determine and compare the  $Ar^{40}$  and  $K^{40}$  content in suites of primary and secondary minerals from the Blue Mountain Nepheline Deposit and the Val d'Or rare earth pegmatite.

**PERSONNEL:** J.Y.H. Rimsaite and R.K. Wanless

**DATE OF BEGINNING:** November 1964

**DATE OF COMPLETION:** December 1965

    Research:  
    Prelim. pubs:  
    Final pubs:

**PUBLICATIONS:** ?

**PUBLICATIONS OUTSTANDING:** ?

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 423. Source Rock for Uranium in the  
Beaverlodge area.

**LOCATION:** Saskatchewan

**OBJECTIVE:**

**PERSONNEL:** L.P. Tremblay

**DATE OF  
BEGINNING:** 1964

**DATE OF  
COMPLETION:**  
Research: ?  
Prelim. pubs: ?  
Final pubs: ?

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** Note or Paper.

GEOLOGICAL SURVEY OF CANADA

(Office and Laboratory Project)

**PROJECT:** O.P. 424. Field Excursion Guide Book, A.S.P.G.  
Cypress Hills Area 1965.

**LOCATION:** Calgary

**OBJECTIVE:** (1) To compile geological map of above area.  
(2) To discharge related organizational and administrative duties.

**PERSONNEL:** E.J.W. Irish

**DATE OF BEGINNING:** October 1964

**DATE OF COMPLETION:**  
Research: September 1965  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Map and notes for publication in the A.S.P.G. Guide Book.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 425. Recent Exploratory Well Data, Yukon,  
District of Mackenzie and Arctic Islands.

**LOCATION:** Calgary

**OBJECTIVE:** To study well data and present the results in graphic  
form - showing lithology, facies, structure, and  
correlation of rock units.

**PERSONNEL:** E.J. Tassonyi

**DATE OF  
BEGINNING:** December 1964

**DATE OF  
COMPLETION:**

**Research:** December 1965

**Prelim. pubs:**

**Final pubs:** 1966

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** G.S.C. Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 426. Electronic Analytical Data File.

**LOCATION:** Ottawa

**OBJECTIVE:** To set up, as a pilot project, a closed electronic data file for the analytical results produced by the laboratories in the Petrological Sciences Division of the G.S.C.

**PERSONNEL:** Departmental punching and computing staff.

**DATE OF BEGINNING:** December 1964

**DATE OF COMPLETION:**

Research:	Continuing
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Possibly a paper.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 427. Windy Point Reef, Great Slave Lake.

**LOCATION:** Calgary

**OBJECTIVE:** To describe the topography, stratigraphy, lithology and Palaeontology of the Middle Devonian Windy Point Reef - includes microscopic examination of well cores and samples as well as description of outcrop specimens.

**PERSONNEL:** E.J. Tassonyi and A.W. Norris

**DATE OF BEGINNING:** December 1964

**DATE OF COMPLETION:**

Research:	June 1965
Prelim. pubs:	
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 428. "Aeromagnetic Interpretation of an area north of Lakes Superior and Huron.

**LOCATION:**

**OBJECTIVE:** To describe and interpret 4-mile aeromagnetic data over a large area in the light of known geology. This area will extend from James Bay south and west to Lakes Huron and Superior. Analyses both qualitative and quantitative.

**PERSONNEL:** A.S. MacLaren, B.K. Bhattacharyya, K.H. Owens, S.D. Dods, and A.L. Zearth.

**DATE OF BEGINNING:** Fall of 1964

**DATE OF COMPLETION:** December 1966

    Research:  
    Prelim. pubs:  
    Final pubs: 1967

**PUBLICATIONS:** 1965, outside paper.

**PUBLICATIONS OUTSTANDING:** ?

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 429. Hudson Bay.

**LOCATION:** Ottawa

**OBJECTIVE:** Write chapter on the Economic Geology of the Hudson Bay area for Beal memorial volume (cf Dr. L. Morley who is coordinating G.S.C. contribution)  
Approx. 6 pp. (300 words) required.

**PERSONNEL:** D.R.E. Whitmore

**DATE OF BEGINNING:** July 1964

**DATE OF COMPLETION:** December 1965  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** Chapter in Beals publication "Hudson Bay".

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 430. Occurrence of Mercury.

**LOCATION:** Ottawa

**OBJECTIVE:** Revise for publication a map showing occurrences of mercury in Canada and significant features of the geology. This map was started in 1958 and brought to date in June 1959. Some analytical work on mercury bearing argentites and dyscrasites is anticipated on material already collected.

**PERSONNEL:** D.R.E. Whitmore and C.R. McLeod

**DATE OF BEGINNING:** December 15, 1964

**DATE OF COMPLETION:** "

**Research:** 1966

**Prelim. pubs:**

**Final pubs:**

**PUBLICATIONS:**

**PUBLICATIONS OUTSTANDING:** Paper: The occurrence of mercury in Canada (Metallogenic map & notes).

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 431. Late-Quaternary plant bearing beds in Central Baffin Island, N.W.T.

**LOCATION:** Ottawa

**OBJECTIVE:** A brief report on palynological studies of the plant bearing beds along Isortoq River, near the Barnes Ice Cap on Baffin Island etc.

**PERSONNEL:** J. Terasmae, J.T. Andrews, Geographical Branch, P. Webber, Queen's University

**DATE OF BEGINNING:** January 12, 1965

**DATE OF COMPLETION:** January 15, 1965  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** Abstract outside paper submitted.

**PUBLICATIONS OUTSTANDING:** Outside paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 432. Mineralogy of Keno Hill and surrounding areas, Yukon.

**LOCATION:** Ottawa

**OBJECTIVE:** To identify and study regional variations in the ore minerals of the Keno Hill, Mt. Haldane and Dublin Gulch areas.

**PERSONNEL:** C.R. McLeod

**DATE OF BEGINNING:** December 1964

**DATE OF COMPLETION:** Winter 65/66  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 433. Synthesizing the tectonics of the Cordilleran of Western Canada.

**LOCATION:** British Columbia

**OBJECTIVE:** To outline the tectonic development of the northwestern Cordillera by means of correlation charts, facies maps, restored sections, structure diagrams and text.

**PERSONNEL:** H. Gabrielse, J.O. Wheeler

**DATE OF BEGINNING:** 1965

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	
Final pubs:	?

**PUBLICATIONS:** None  
Presented at Royal Society of Canada meeting in Vancouver 1965.

**PUBLICATIONS OUTSTANDING:** Publication to be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 434. Correlation of Quaternary volcanic ash falls of the southern Cordillera.

**LOCATION:** Ottawa

**OBJECTIVE:** Perfect the use of volcanic ash as a tool for regional correlation of Quaternary deposits.

**PERSONNEL:** R.J. Fulton

**DATE OF BEGINNING:** January 1965

**DATE OF COMPLETION:**

Research:	April 1965
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** To be tied in with field project on Quaternary deposits of southern British Columbia and incorporated in the resulting publications.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 435.

**LOCATION:** Ottawa

**OBJECTIVE:** IBM Program to calculate aeromagnetic anomalies.

**PERSONNEL:** E. Gaucher, and Computer and Programming Staff  
(G.D. Cameron)

**DATE OF BEGINNING:** December 15, 1964

**DATE OF COMPLETION:**

Research:	May 15, 1965
Prelim. pubs:	?
Final pubs:	?

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Two reports.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 436. ?

LOCATION: Ottawa

OBJECTIVE: To provide standards for calibrating susceptibility meter.

PERSONNEL: E. Gaucher

DATE OF BEGINNING: 1965

DATE OF COMPLETION:  
Research: 1965  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: To be decided.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 437. A geochemical Study of Magnetite.

LOCATION: Ottawa

OBJECTIVE: Study of Magnetite.

PERSONNEL: D.F. Sangster

DATE OF  
BEGINNING: March 1965

DATE OF  
COMPLETION:  
Research: 1968  
Prelim. pubs:  
Final pubs:

PUBLICATIONS: None

PUBLICATIONS  
OUTSTANDING: G.S.C. Bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 438. Geochemistry of gold and its deposits.

LOCATION: Ottawa

OBJECTIVE: To compile and publish a monograph on gold in all of its natural settings and in economic deposits.

PERSONNEL: R.W. Boyle and 1 T.O. (summer)

DATE OF  
BEGINNING: June 1, 1965

DATE OF  
COMPLETION:  
Research: June 1, 1968  
Prelim. pubs: --  
Final pubs: --

PUBLICATIONS:

PUBLICATIONS  
OUTSTANDING: Monograph or Bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 439. Collection and examination of samples from the Ries Kessel, Germany.

**LOCATION:** Germany

**OBJECTIVE:** To compare the chemistry of magmatic products, and the type of alteration found in breccia fragments from the Ries Kessel, Germany and from the Clearwater Lake structure, Quebec.

**PERSONNEL:** H.H. Bostock

**DATE OF BEGINNING:** 1965

**DATE OF COMPLETION:**

    Research: 1965

    Prelim. pubs: 1966

    Final pubs: 1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 440. Mississippian Subsurface Geology in the Pembina Area, Alberta.

**LOCATION:** Calgary

**OBJECTIVE:** Stratigraphic analysis and preparation of subsurface, structure, isopach, facies, and related maps as an aid to determining the oil and gas potential of the area.

**PERSONNEL:** H.L. Martin

**DATE OF BEGINNING:** April 1965

**DATE OF COMPLETION:**

Research:	October 1965
Prelim. pubs:	1965
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 441. Illustration of assemblages of Palaeozoic spores and pollen.

**LOCATION:** Ottawa

**OBJECTIVE:** Preparation of paper "Illustrations of Canadian Fossils" Devonian, Carboniferous and Permian Spores and Pollen as an aid in determining the age and correlation of the enclosing rocks.

**PERSONNEL:** D.C. McGregor and M.S. Barss

**DATE OF BEGINNING:** June 1965

**DATE OF COMPLETION:**

Research:	October 1965
Prelim. pubs:	
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 442. National Mineral Collection.

**LOCATION:** Ottawa

**OBJECTIVE:** To build up and maintain the Systematic Reference Series of the National Mineral Collection. This Series is the responsibility of the Geological Survey of Canada and its improvement correspondingly increases its usefulness to research in the geological sciences.

**PERSONNEL:** H.R. Steacy

**DATE OF  
BEGINNING:** 1961

**DATE OF  
COMPLETION:** Continuing  
Research:  
Prelim. pubs:  
Final pubs:

**PUBLICATIONS:** (1964) Abstract in Can. Min.

**PUBLICATIONS  
OUTSTANDING:** ?



**GEOLOGICAL SURVEY OF CANADA**  
(Office and Laboratory Project)

**PROJECT:** O.P. 443. Late Middle and early Upper Devonian Formations of Manitoba and central Saskatchewan to Great Slave Lake Area.

**LOCATION:** Calgary

**OBJECTIVE:** To attempt a correlation of Point Wilkins, Dawson Bay, Winnipegosis, Elm Point, and Ashern Formations of the outcrop with subsurface formations.

**PERSONNEL:** Helen R. Belyea and A.W. Norris

**DATE OF BEGINNING:** August 1964 (visit to Norris in field)

**DATE OF COMPLETION:**

Research:	1966
Prelim. pubs:	1967
Final pubs:	

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper.  
Probably also oral presentation at Saskatchewan and Alberta Society of Petroleum Geologists.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 444. Petrologic and mineralogical study of  
White Creek granite.

**LOCATION:** Ottawa

**OBJECTIVE:** This is part of project 57-27 (granite study).

**PERSONNEL:** G. Mursky

**DATE OF  
BEGINNING:** 1963

**DATE OF  
COMPLETION:** 1965  
Research: 1965  
Prelim. pubs: 1965  
Final pubs: 1965

**PUBLICATIONS:** Oral presentation at G.S.A., 1964.

**PUBLICATIONS  
OUTSTANDING:** Bulletin

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 445. Cambrian Palaeontology of Western Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** To increase biostratigraphic control, up-date systematic descriptions, and describe new species.

**PERSONNEL:** Wm. H. Fritz

**DATE OF BEGINNING:** 1965

**DATE OF COMPLETION:**

    Research: Continuing project

    Prelim. pubs:

    Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Bulletins as appropriate.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 446. Jurassic Faunas of Taseko Lakes  
Area, B.C.  
Part I Hettangian Ammonoidea.

**LOCATION:** Ottawa

**OBJECTIVE:** Description of faunas mostly hitherto unknown in  
Canada, and subdivision of the enclosing strata.

**PERSONNEL:** H.W. Frebold

**DATE OF  
BEGINNING:** March 1965

**DATE OF  
COMPLETION:**  
Research: September 1965  
Prelim. pubs: 1966  
Final pubs:

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** G.S.C. Bulletin.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 447. Stratigraphy of Devonian reef and off-reef rocks in the subsurface in Fort Nelson Area.

**LOCATION:** Calgary

**OBJECTIVE:** To study the subsurface and appropriate surface sections of Devonian rocks in N.W. Alberta and N.E. British Columbia with view to clarifying stratigraphic relationships as an aid in evaluating the economic potential of these rocks.

**PERSONNEL:** W.S. Mackenzie

**DATE OF BEGINNING:** May 1965

**DATE OF COMPLETION:**  
Research: May 1966  
Prelim. pubs: 1966  
Final pubs: (?)

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Paper.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

PROJECT: O.P. 448.

LOCATION: Canada

OBJECTIVE: To compare lithium content of samples of granites from geological provinces apparently lacking lithium deposits with that of granites in some lithium-rich areas for which data have been published.

PERSONNEL: R. Mulligan

DATE OF BEGINNING: 1965 (2 weeks)

DATE OF COMPLETION:

Research:	1965
Prelim. pubs:	--
Final pubs:	?

PUBLICATIONS: None

PUBLICATIONS OUTSTANDING: G.S.C. Paper if results warrant.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 449. Tectonics and Ore Deposits in Canada.

**LOCATION:** Ottawa

**OBJECTIVE:** To illustrate recent work of Geological Survey in the Tectonics of the Canadian Shield and the relationship of ore deposits to tectonics. This exhibit will be prepared by Trade and Commerce for the Geological Society of America meeting in November 1965.

**PERSONNEL:** A.S. MacLaren

**DATE OF BEGINNING:** 1965

**DATE OF COMPLETION:**

Research:	1965
Prelim. pubs:	--
Final pubs:	--

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** None, exhibit only.

GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 450. Middle Triassic (Anisian) Ammonoids  
from British Columbia.

**LOCATION:** Ottawa

**OBJECTIVE:** To prepare for publication, posthumously, under  
Dr. F.H. McLearn's name a G.S.C. Bulletin  
thus completing a manuscript unfinished at the  
time of Dr. McLearn's death.

**PERSONNEL:** E.T. Tozer

**DATE OF  
BEGINNING:** August 1965

**DATE OF  
COMPLETION:**  
Research: December 1965  
Prelim. pubs: 1966  
Final pubs: 1966

**PUBLICATIONS:** None

**PUBLICATIONS  
OUTSTANDING:** G.S.C. Bulletin.



GEOLOGICAL SURVEY OF CANADA  
(Office and Laboratory Project)

**PROJECT:** O.P. 451. Albian Ammonites of Queen Charlotte Islands, B.C.

**LOCATION:** Ottawa

**OBJECTIVE:** To complete and prepare for publication manuscript left unfinished by the death of Dr. F.H. McLearn. To be published under authorship of Dr. McLearn.

**PERSONNEL:** J.A. Jeletzky

**DATE OF BEGINNING:** January 1965

**DATE OF COMPLETION:**

Research:	June 1965
Prelim. pubs:	
Final pubs:	1966

**PUBLICATIONS:** None

**PUBLICATIONS OUTSTANDING:** G.S.C. Bulletin.

