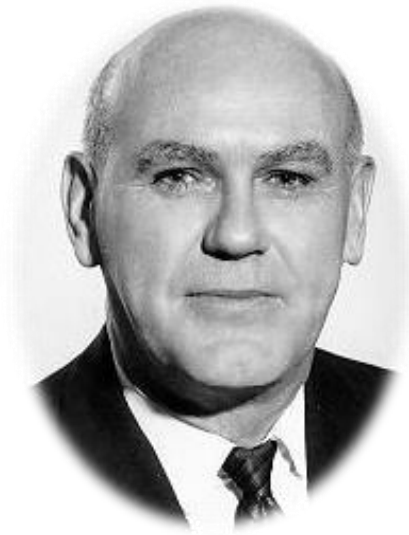


# Edward Pretious fonds

Originally compiled 1985

Revised by Erwin Wodarczak (2010), Stacy Paull (2016), and Manfred Nissley (2018)

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# Fonds Description

**Edward Pretious fonds.** – 1922-1977.

2.43 m of textual records.

## Biographical Sketch

Edward S. Pretious was born in Calcutta, India. He obtained his B.A.Sc. in Civil Engineering from the University of British Columbia (1929) and M.Sc. in Hydraulics from Iowa State University (1939). He joined the Department of Civil Engineering at UBC in 1940, remaining there until his retirement in the early 1970s. Interested in hydraulic engineering and research projects relating to fish conservation in B.C., Pretious headed the Fraser River Model Project (1948-1961) and the Vancouver Harbour and Burrard Inlet Model Project (1953-1956). The Fraser River Model Project was designed to help improve navigation on the Fraser River Estuary. Located on a three-acre site on the western edge of the Point Grey campus, the project was a hydraulic, erodible-bed, tidal river model and one of the largest in the world. The Vancouver Harbour - Burrard Inlet Project had the primary objective of determining the effects on currents, tides, and navigation of proposed dredging in the First Narrows. A pilot model of the First Narrows was built by the National Research Council of Canada, in cooperation with UBC, on the site of the Fraser River Model, near the Arboretum.

## Scope and Content

The fonds consists of records from the Fraser River Model Project (1949-1962); the Vancouver Harbour and Burrard Inlet Model Project (1953-1956); materials generated in teaching and taking UBC engineering courses (1922-1972), academic materials generated outside of the UBC system, and miscellaneous engineering projects that Pretious participated in his time at UBC (1942-1977). The records have been separated into six different series. Reports and memoranda which were issued as a series have been arranged in series order, but other items were filed arbitrarily under the two projects and have been maintained this way.

## Notes

Title based on the contents of the fonds.

Related records can be found in the [Fraser River Model Project fonds](#).

## Series Descriptions

### **Fraser River Model Series.** — 1949-1962.

1.18 meter of textual records.

Series includes records related to the Fraser River Model Engineering project. Including scientific notes, publications and reports generated by Pretious.

### **Vancouver Harbour and Burrard Inlet Model Project.** – 1953-1956.

28 cm. of textual records.

The Vancouver Harbour - Burrard Inlet Project had the primary objective of determining the effects on currents, tides, and navigation of proposed dredging in the First Narrows.

### **UBC Course Materials Series.** – 1922-1972.

51 cm. of textual records.

Series consists of notes and projects from Pretious' time as a student and materials from different courses he taught as a professor.

### **Miscellaneous Projects Series.** – 1942-1977.

37 cm. of textual records.

Series consists of a range of research materials relating to different engineering projects Pretious was involved in. They are arranged in no particular order.

### **General Correspondence.** – 1947-1973

3 cm. of textual records.

Series consists of correspondence with scientists and other professionals during Pretious's time at UBC.

### **Non-UBC Education and Lectures Series.** – 1935-1962.

6 cm. of textual materials

Series consists of notes taken during Pretious's time as a student at Iowa State as well as lectures outside of UBC.

# File List

## FRASER RIVER MODEL SERIES

### BOX 1

Scrapbook. 1949-1962.

[Primarily of clippings related to the Fraser River Model].

### BOX 2

Fraser River Model. FRM reports.

FRM-201. Further exploratory tests on the effects of the closure of Annacis Channel / E.D. Thorne. May 15, 1953.

FRM-202. Further tests an channel improvements through Steveston Cut / E.D. Thorne, I.D. Smith. May 27, 1953.

FRM-203. Friction in hydraulic models involving non-uniform steady flow in open channels / E.S. Pretious. June 22, 1953.

FRM-204. Friction in hydraulic models involving non-uniform unsteady flow in open channels / E.S. Pretious. August 19, 1953.

FRM-205. A Stage verification for June 30, 1950, and probable effects of proposed structures an these stages / E.S. Pretious, I.D. Smith, E.D. Thorne. September 3, 1953.

FRM-206. Further studies of Ladner Bifurcation area / E.S. Pretious, E.D. Thorne. October 27, 1953.

FRM-207. Further studies of the New Westminster Trifurcation Area / E.S. Pretious, E.D. Thorne. November 30, 1953.

FRM-208. The Current-drag velocity meter / E.S. Pretious. June 22, 1954.

FRM-209. Model tests of local scour in the Vicinity of the partial closure of Annacis Channel / E.S. Pretious, E.D. Tharne. July 29, 1954.

FRM-210. Further model studies of the effect an water levels at New Westminster resulting from a structure in Annacis Channel / E.S. Pretious, E.D. Tharne. August 6, 1954.

FRM-211. Design of thermistor water-velocity meter / E.S. Pretious, I.D. Smith. August 25, 1954. 2 copies.

FRM-212. Fraser River Model channel reconstruction. December 10, 1954.

FRM-213. Further studies of Ladner Bifurcation Area E.D. Thorne. December 17, 1954.

FRM-214. Part I: An Aspect of the sedimentation problem; Part II: Flume studies / G.E. Jarlan. March 11, 1955.

FRM-215. Further model studies of the Ladner Bifurcation Area, Fraser River / I.D. Smith. April 20, 1955.

FRM-216. Model verification studies in the New Westminster Trifurcation Area / G.E. Jarlan. June 14, 1955.

FRM-217. The Design of pendulum-type velocity meter / I.D. Smith. June 30, 1955.

FRM-217 (Revised). December 6, 1960.

FRM-218. Modified Price Current Meter for measuring unsteady flow velocities in open channels / I.D. Smith. July 18, 1955.

FRM-219. Amendments to "Operating instructions for the Fraser River Model" (HY 109) and "Testing techniques for the Fraser River Model" (HY 118). / E.S. Pretious, J.J. McGraw. Aug. 3, 1955.

FRM-220. 1955 Prototype studies of the lower Fraser River, B.C. / W. Parkinson. September 9, 1955.

FRM-221. The Electrical wiring on the Fraser River Model / I.D. Smith.  
September 27, 1955.

BOX 3

Fraser River Model. FRM reports (cont.)

FRM-222. Model studies of improvement plans for the navigable channel in the main arm of the Fraser River at New Westminster, B.C. / G.E. Jarlan.  
December 23, 1955.

FRM-223. Influence of proposed structures for the improvement of the shipping channel at New Westminster on the local water stages / G.E. Jarlan.  
January 30, 1956.

FRM-224. Bed-load movement in the main arm of the Fraser River estuary / E.S. Pretious. March 28, 1956.

FRM-225. Hydraulic model studies of Steveston Cannery Channel / E. Vollmer. July 25, 1956.

FRM-226. Sewerage outfall studies at Braid Street, New Westminster, B.C. / E. Vollmer. October 16, 1956.

FRM-227. Part I: Plans for reduction of shoaling and for improvement of the Fraser River at New Westminster, B.C. / E. Vollmer. June 13, 1957.

FRM-227. Part II: Plans for reduction of shoaling and for improvement of the Fraser River at New Westminster, B.C. / E. Vollmer. July 22, 1957.

FRM-227. Part III: Plans for reduction of shoaling and for improvement of the Fraser River at New Westminster, B.C. / E. Vollmer. April 23, 1958.

FRM-227. Part IV: Plans for reduction of shoaling and for improvement of the Fraser River at New Westminster, B.C. / E. Vollmer. August 14, 1959.

## BOX 4

### Fraser River Model. FRM reports (cont.)

FRM-227. Part IV. Revised March 1, 1960.

FRM-228. Model studies to reduce dredging at Steveston Cut, Fraser River, B.C. / E. Vollmer. July 30, 1958. Part A.

FRM-228, Part B. Preliminary model studies to reduce dredging and improve navigation conditions from Steveston to the mouth of the Fraser River, B.C. / E.S. Pretious, E. Vollmer. May 31, 1960.

FRM-229. Estimate of quantity rate of bed-load transport in the Fraser River Estuary / E.S. Pretious. August 21, 1958.

FRM-230. Model tests to determine the effects of proposed dredging by Fenco in the Port Mann-Sapperton Areas of the Fraser Fiver / E. Vollmer. December 1, 1958.

FRM-231. Suggested glossary for river-training and harbour development structures / E.S. Pretious. January 30, 1959.

FRM-232. Final report on plans for reduction of shoaling and for improvement of the Fraser River at New Westminster, B.C. / E. S. Pretious, E. Vollmer. October 23, 1959.

FRM-232 Revised. Revision and addendum to "Final report on plans for reduction of shoaling and for improvement of the Fraser River at New Westminster, B.C." / E.S. Pretious, J.E. Barlow. March 29, 1962.

## BOX 5

### Fraser River Model. Reports and Memoranda.

Brief summary of principal features of model [Fraser River Model Project] / Edward S. Pretious. November 14, 1955.



Laboratory flume studies, Deas Island Tunnel / E.S. Pretious, E. Vollmer, A.C, Mercer. November 18, 1957. [Several articles, memoranda, and reports related to the tunnel have been placed inside].

Field trip from P.W.C. Wharf No.1 Road, Steveston, to Deas Island / E. Vollmer, J.E. Barlow. September 19, 1957.

Fraser River Model, a joint project between the University of British Columbia and the Department of Public Works, Canada: some facts relating to the project and a summary of studies made / E.S. Pretious. July 1961.

Final report on special observations of bed movement in lower Fraser River at Ladner Reach during 1950 freshet and till June 1951. Including supplementary report no. 1 to Memorandum re. special observations, 1950 freshet / E.S. Pretious, T. Blench. Vancouver : National Research Council, July 6, 1951.

Memorandum: Steveston Cannery Channel improvement studies / E. Vollmer. June 5, 1956.

Memorandum report: Further model studies of improvement plans for the navigable channel in the main arm of the Fraser River at New Westminster, B.C. / E. Vollmer. January 25, 1957.

Memorandum: Fraser River Model tests, Deas Island Tunnel / E.S. Pretious, E. Vollmer, A.G. Mercer. September 12, 1957.

Technical memorandum: Critical mean velocities of various grades of sand as determined by flume studies / J.E. Barlow. March 29, 1962. [Follow-up of Technical Note 30].

Principles of river training as an aid to navigation, with occasional reference to the Fraser River, B.C. ; basic laws of river behaviour / E.S. Pretious. (Technical report no. 5). July 22, 1960.

Wind-generated surface waves / E.S. Pretious. (Technical report no. 6). March 1962.

Progress reports / Fraser River Model. PR 1001-1094, 1953-1962.

Fraser River Model aids engineering studies of navigation requirements / E.S. Pretious. December 28,1955.

Radii of bands, sand slopes. [Handwritten, n.d.].

## BOX 6

Fraser River Model. Technical notes and reports.

Technical notes nos. 1-29 [No. 29 is missing]. 1950-1951.

1. Note on modelling Pitt Lake.
2. Tentative calculations of Fraser River tidal celerities and currents.
3. Proposal for training in practical sediment-transport observations.
4. Puri siltometer, March 1951.
5. Proposal to construct a 400-foot-long flume for sediment-transport experiments.
6. Scales for moving-bed models, March 1951.
7. Supplementary report no. 1 to memorandum re. special observations 1950 freshet, September 1950.
8. Memorandum covering modifications and test on control equipment, Fraser River Model, October 1950.
9. Memorandum report an flume studies and bed movement of Fraser River sand, November 1950, with supplement to February 1951.
10. Instructional manual for electronic control equipment.
11. An Analysis of the Fraser River Model tidal control.
12. Memorandum an sand grading and analysis.
13. Memorandum on a visit to United Kingdom Hydraulic Laboratories.
14. Memorandum on sands available for model bed.
15. Notes on mapping, template making and contour plots pertinent to the Fraser River Model.
16. Preliminary investigations of tenmrature records on the Fraser River.
17. Memorandum to supplementary report no. 1, special observations 1950 freshet.
18. Memorandum on survey data, discharge and gauge height information available on the Fraser River.
19. River discharge and sand injection control equipment, and appendix.
20. Revised instructional manual for electronic control equipment.
21. Discharge observations for tidal rivers.
22. Effects of varying tides on Fraser River stages.
23. Note on bed load for Fraser River Model.

24. Notes on studies of bed-sand movement in flumes, 1949-1951.
25. Preliminary survey of Fraser River (North Arm) bed sediment.
26. Second note on electric analogue for tides in estuaries.
27. Description of block diagram for control equipment.
28. Note on hunting of gates of Fraser River Model.

Critical mean velocities of various grades of sand and crushed coal as determined by flume studies / G.E. Jarlan. (Technical note 30). January 31, 1956.

Fitting curves to empirical data / E.S. Pretious. (Technical note 31). February 8, 1956.

Photography as a means of recording test data on the Fraser River Model / E. Vollmer, J.E. Barlow, M. Lindenberger. (Technical note 32). November 1957.

A New design for the tide and river discharge electronic control equipment on the Fraser River Model / E.V. Bohn. (Technical note 33). November 1958.

A Study of groins and their function as hydraulic structures / E.S. Pretious, E. Vollmer. (Technical note 35). July 1961.

Items attached to technical note 35. [Correspondence, related articles].

Water surface elevations and tidal discharges in the Fraser River estuary, January 23 & 24, 1952 / W. Douglas Baines. (Report no. HY 104). Ottawa: National Research Council, April 8, 1952.

Report nos. HY 101-103, 105-114.

101. Preliminary model study of the proposed closure of Moray Channel, Fraser River, B.C. / W. Douglas Baines. January 15, 1952.

102. A Discussion of "Distribution of sizes in river-bed sand samples.." / W. Douglas Baines. January 22, 1952.

103. An Automatic recording tide gauge for the Fraser River Model / I.D. Smith. February 20, 1952.

105. A Brief summary of bed movement verification tests on Fraser River Model / W. Douglas Baines. May 1, 1952.

106. Model study of proposed Steveston Fishermen's harbour / W. Douglas Baines. May 19, 1952.

107. Model scaling to Regime Formulae / T. Blench. August 13, 1952.

108. Model test on proposed Steveston Harbour breakwater / W. Douglas Baines, E.D. Thorne. August 26, 1952.
109. Operating instructions for the Fraser River Model / J.E. Barlow. August 26, 1952.
110. The Analysis of friction in hydraulic models / W. Douglas Baines. August 28, 1952.
111. A Brief report on controls and indicators of the Fraser River Model / E.S. Pretious, I.D. Smith. August 18, 1952.
112. A Linearized solution to the problem of the tidal influence of a wide river / G.V. Parkinson. September 19, 1952.
113. Preliminary model study of river training structures in the Woodward's Landing Area / L.A. Neil, W. Douglas Baines. October 2, 1952.
114. Model tests on the Extension of Steveston south jetty no. 2 from jetty range 11 to jetty range 15 / W. Douglas Baines, E.D. Thorne. November 21, 1952.

Report nos. HY 115-122.

115. Model tests on channel improvements through Steveston Cut / E.D. Thorne, W. Douglas Baines. December 12, 1952.
116. A Summary of further verification tests in the Woodward's Landing Area / L.A. Neil. December 19, 1952.
117. Model verification and preliminary study of proposed channel improvements, New Westminster Trifurcation Area / L.A. Neil. December 22, 1952.
118. Testing techniques for the Fraser River Model / E.D. Thorne, J.E. Barlow. March 9, 1953.
119. A Long period effect of tides on Fraser River Stages / W. Douglas Baines. February 24, 1953.
120. Exploratory tests on the effects of the closure of Annacis Channel / W. Douglas Baines, E.D. Thorne. March 10, 1953.
121. A Continuous recording point gauge for the measurement of surface waves / W. Douglas Baines, I.D. Smith. March 20, 1953.
122. Navigation problems in the North Arm of the Fraser River / W. Douglas Baines. March 25, 1953.

The Fraser River Model: a brief general report on scope and progress / E.S. Pretious. n.d.

## BOX 7

### Fraser River Model Progress Reports

FRM Progress reports U.B.C. nos. 1-4, 1949  
FRM Progress reports U.B.C. nos. 5-7, 1950-51  
FRM Progress reports U.B.C. nos. 8-27, 1951-1953.  
Map: Vancouver First Narrows before dredging. 1955.

Drawings to accompany Progress report U.B.C. no. 3.  
Drawings to accompany Progress report U.B.C. no. 4.  
Drawings to accompany Progress report U.B.C. no. 5.  
Drawings to accompany Progress report U.B.C. no. 7 ( 2 copies).

## BOX 8

### Fraser River Model and Vancouver Harbour Model

[All publications prepared or issued by the Fraser River Model Office from commencement of project up to and including March 1962.]

Fraser River Model library list. September 1961.

Fraser River Model index to map filing system. [1961].

Filing system for maps and drawings. 1953.

Fraser River Model inventory. March 31, 1961.

(continued)

### VANCOUVER HARBOUR & BURRARD INLET MODEL PROJECT SERIES

A Brief outline of the Vancouver Harbour Project / E.S. Pretious. 1954.

Vancouver Harbour Model. Technical information. 1954.

Vancouver Harbour Model. Miscellaneous electrical diagrams. n.d.

Analysis of tides and currents in Burrard Inlet / W.D. Baines. (Report no. MH-52). Ottawa: National Research Council, December 30, 1954.

Computation and analyses of Burrard Inlet Tidal Survey, May 3 to 6, 1954 / William Penhall Johnson. (Student Paper). November, 1954.

Vancouver Harbour and Burrard Inlet Model Project: correspondence, 1955-56, 1962.

Vancouver Harbour & Burrard Inlet Model Project: correspondence, 1954.

Vancouver Harbour & Burrard Inlet Model Project: Correspondence, 1952-1953.

National Harbours Board. Annual reports, 1950 & 1951.

Maps to accompany memoranda. n.d.

Note on Vancouver Harbour Model reports.

Vancouver Harbour Model. Interim report / L. Cox, I.D. Smith. (VHM-IR 1). February 26, 1954.

Vancouver Harbour Model. Interim report / L. Cox. (VHM-IR 2). November 25, 1954.

Vancouver Harbour Model. Report 1 / E.S. Pretious. (VHM-1). July 10, 1953.

Vancouver Harbour Model. Report 2 / E.S. Pretious, L. Cox. (VHM-2). July 10, 1953.

Vancouver Harbour Model. Report 3 / I.D. Smith, L. Cox. (VHM-3). January 7, 1954.

Vancouver Harbour Model. Report 4 / L. Cox. (VHM-4). April 7, 1954.

Vancouver Harbour Model. Report 5 / E.S. Pretious. (VHM-5). [April 1954].

Vancouver Harbour Model. Report 6 / L. Cox. (VHM-6). October 21, 1954.

Vancouver Harbour Model. Report 7 / L. Cox. (VHM-7). December 31, 1954.

Newsclippings, notes. 1953.

## BOX 9

VHM-IR 2: Aerial view of Burrard Inlet (negative).

VHM-5: Negatives of photos to accompany report.

Pamphlet bound, finished copies of:

VHM-IR 1

VHM-IR 2

VHM-1

VHM-2

VHM-3

VHM-4

VHM-5

VHM-6

VHM-7

## UBC COURSE MATERIALS SERIES

- 9-1 Class Notes, CE 547, 1971-1972
- 9-2 Class Notes, CE 546, 1971-1972
- 9-3 Class Notes, CE 546 Spring Term, 1971-1972

## BOX 10

- 10-1 Class Materials, CE 560
- 10-2 CE 360 Lab
- 10-3 Class Notes, CE 553
- 10-4 Class Notes, CE 476
- 10-5 Fortran IV, 1966
- 10-6 Math 355, 1962
- 10-7 Computer & Hydraulics [lecture notes], 1965-1967
- 10-8 CE 12, 21, 29, 1928
- 10-9 CE 9 Structural Design, 1923-1928

## BOX 11

- 11-1 Class Notes, CE 19, 1923-1928
- 11-2 CE 23 Notes, 1923-1928
- 11-3 CE 2 Notes on Surveying, 1923-1928
- 11-4 Legal Aspects [of Engineering], 1923-1928
- 11-5 [Legal Aspects of Construction Industry], 1923-1928
- 11-6 Theory of Earth Pressures Notes, 1923-1928
- 11-7 The Tides, 1923-1928
- 11-8 NRC Grants
- 11-9 Cost Records, 1954
- 11-10 Hydraulic Notes
- 11-11 Pretious Thesis
- 11-12 Class of 29 Reunion

(continued)

## BOX 12

### MISC. PROJECT SERIES

- 12-1 Wind-Generated Surface Water Waves Technical Report, No. 6, 1962
- 12-2 Report of Orifice Calibration, 1966
- 12-3 Hydraulic Model of Hell's Gate Canyon Part 1, 1942
- 12-4 Hells's Gate, Right Bank Low Level Fishway Model Studies of Diffusion Chamber, 1947-1948
- 12-5 Odyssey of a Pioneer family & Rough Notes, 1986 (Contains photo negatives and photos)
- 12-6 Calibration of Weir and Oriface, 1954
- 12-7 UBC Campus maps
- 12-8 Railway maps, 1940-1977
- 12-9 Fisheries and Salmon [Fraser River], 1950-1952
- 12-10 Wave Research Equipment Correspondence, 1964-1968
- 12-11 Fisheries Research, 1957-1958
- 12-12 UBC Rowing Channel, 1965
- 12-13 Mouth of North Arm, Fraser River, 1973
- 12-14 Public Concerns Roadway Around Point Grey, 1969-1970
- 12-15 Pipeline Crossing, 1976-1977
- 12-16 Big Qualicum Report, 1973



## BOX 13

- 13-1 McGregor R. Diversion into Parsnip R. Correspondence and Notes, 1973
- 13-2 Foreign Job Recruitment Report, 1974-1975
- 13-3 North Arm Reports, 1949-1953
- 13-4 Railway Tunnel at White Rock, 1975
- 13-5 Northwest Hydraulic Consultants, 1974
- 13-6 Illecillewaet River at Revelstoke, BC, 1976
- 13-7 Irrigation Correspondence, 1970- 1971
- 13-8 Correspondence-River Bed Degradation below Moran Dam, 1971-1972
- 13-9 Basic Theory, Hydrodynamics
- 13-10 Flow in Pipe Networks
- 13-11 Unsteady Flow in Conduits
- 13-12 Hydraulic Ram

(continued)

## FRASER RIVER MODEL SERIES (cont.)

- 13-13 Fraser River Model, Hydraulic Flume Tests, 1958
- 13-14 Navigation and Engineering on the Delta, 1949
- 13-15 Surveying Manual, 1944
- 13-16 Wave Report, 1964
- 13-17 Fraser River Model Project, 1962
- 13-18 [Load Based Transport in Fraser River], 1958
- 13-19 Engineering Report on Proposed Fishways at Hell's Gate Canyon, [n.d.]

## BOX 14

- 14-1 Report on Navigation Commerce and Engineering on Fraser Delta – Draft 1949

## UBC COURSE MATERIALS SERIES

- 14-2 Class Notes, CE 20, 1925-1937
- 14-3 Class Notes, Applied Science 270 - 1st term 1962-63
- 14-4 Walter Hardwick Thesis – Effect of the Proposed Moran Dam 1958

## MISC. PROJECT SERIES

- 14-5 Material used for Moran Dam study and Fraser Delta – Front Sediment Budget Report 1971 - 1972
- 14-6 Stream Flow Data for Moran Dam Study and Report 1971
- 14-7 Literature From Coastal Engineering Research Centre, Wash, DC, USA 1963-1996
- 14-8 Correspondence with F.O. Diercks – RE: US Army Core of Engineers - Wave Field Studies 1965
- 14-9 Correspondence with [Ernest Sackville Turner], RE: wave machines design. 1964-1965
- 14-10 Correspondence with Robert S. Arthur, Re: Wave Theory Class Notes 1955
- 14-11 Canadian Fisheries Reports V1 [1946] - 1972
- 14-12 Canadian Fisheries Reports V2 [1946] - 1972

## BOX 15

- 15-1 Copy of Report: An Introduction to the Mathematical Theories of Two-Dimensional Periodic Progressive Gravity Waves 1960

## GENERAL CORRESPONDENCE SERIES

- 15-2 Correspondence 1947 – 73 V1
- 15-3 Correspondence 1947 – 73 V2

## NON-UBC EDUCATION AND LECTURES SERIES

- 15-4 Master's of Science Class notes from Iowa State – V1 1935 – [1939]
- 15-5 Master's of Science Class notes from Iowa State – V2 1935 – [1939]
- 15-6 Lecture at Prince of Wales High School – March 1962