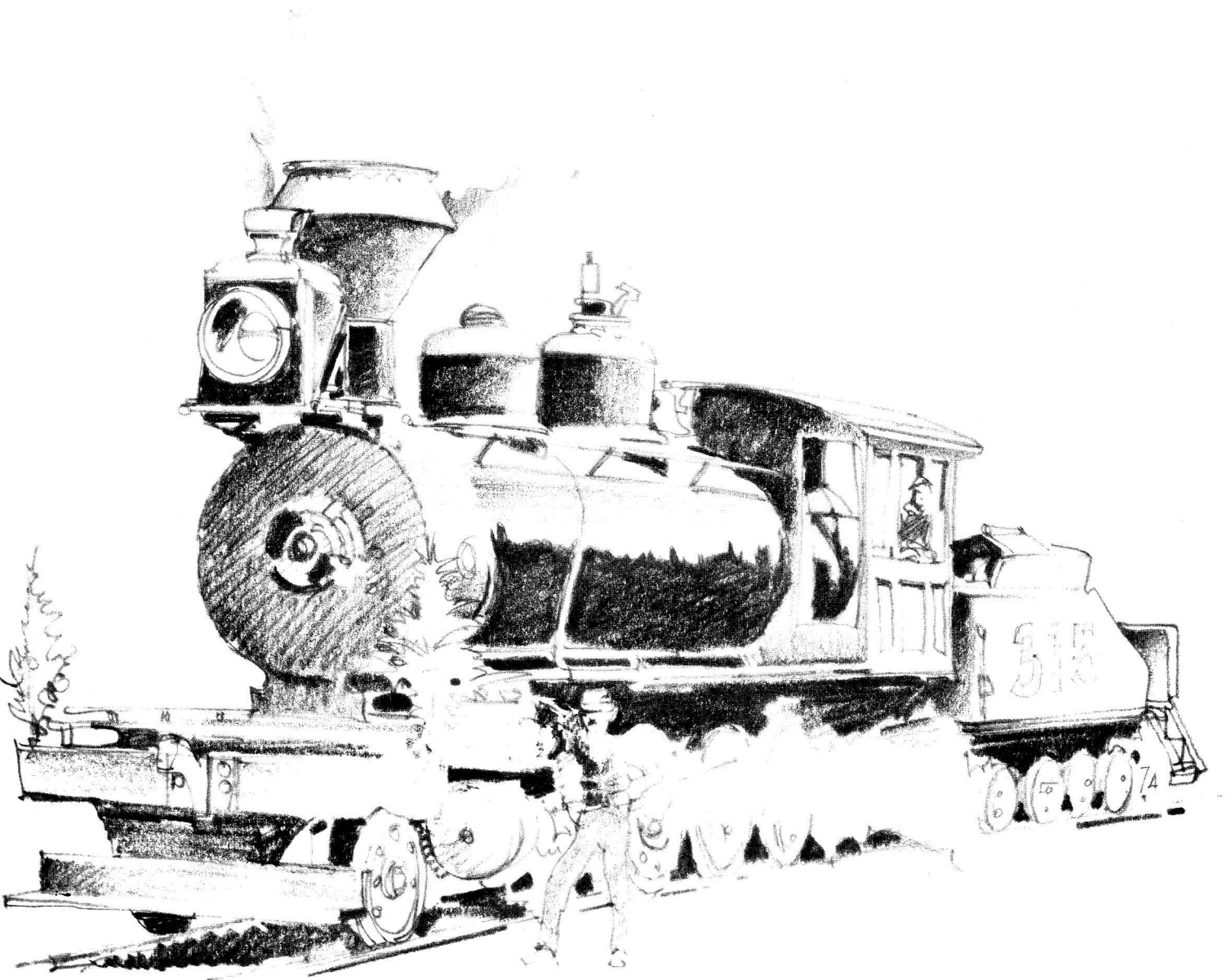


# B.C. historical NEWS

FEBRUARY 1974



GOLDEN : ONE HUNDRED TON MOUNTAIN ENGINE 1887

*P. G. G.*

BRITISH COLUMBIA HISTORICAL NEWS

Vol. 7 No. 2.

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N.B. DEADLINES FOR SUBMISSIONS: THE 10th Day of Month of Issue.

Executive 1973-1974

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TABLE OF CONTENTS

	Page
Editorial	2
Minutes	3
Society Notes & Comments	5
Jottings	8
B.C. Books of Interest	9
Book Reviews:	
The Parks of British Columbia	10
The Unknown Island	11
Bowen Island	12
Nature West Coast	13
The Dollhouse that Travelled, by C. McAllister	14
B.C.'s Air Survey Story Pt.II, by G.S. Andrews	16

The cover series for Volume 7, drawn by Robert Genn, will be focused on the newest affiliates of our Association. This issue will salute Golden with a picture of an old mountain engine, c.1887

EDITORIAL

So now we have Heritage Canada! What is it and what is its function? Surely this cannot be another Federal Government ploy to lure us into believing that all our problems of historic sites are now fully protected and solved. There is still the evidence around of that inventory of historic buildings, which emanated from Ottawa and did little to convince us that it was indeed what it purported to be. And yet what can we believe when those doing the explaining seem to have a very vague notion themselves as to what it is all about?

A recent meeting in Vancouver to present the "new born babe" leaves many questions unresolved. It is not very convincing to say that it is non-political<sup>in</sup> scope when the pot was sweetened by some twelve million dollars of Federal money which supposedly would generate enough revenue to run the foundation. A few more Beryl Pluntre-type safaris across the country, plus an advertising campaign on too lavish a scale can hardly convince anyone that the engendered revenue would leave a surplus sufficient to purchase a suburban building lot in, for instance, Come By Chance, Newfoundland.

However, other statements were made to the effect that this was going to be a better foundation than the British National Trust, for a comparison. At this juncture it is only fair to say that the name "Trust" was clarified to the extent that all doubts were eliminated that it in any way compared to Yorkshire Trust or Canada Trust, or that type of institution. Now this type of statement comes very glibly indeed from a group that has hardly "won its spurs" and certainly has not "won the West".

A brief statement of fact on the British National Trust will bring out the information that it was founded in 1895 by Miss Octavia Hill, Sir Robert Hunter and Canon Rawsley, their object being "to preserve as much as possible of the history and beauty of their country for its people". It was chartered in 1895, and in 1907 an Act of Parliament gave it certain tax privileges with regards to death duties by property willed to the Trust. The National Trust now administers more than 430,000 acres in the British Isles, and several thousand properties. These properties have come mostly by gift or bequest. One last fact, since 1965 the Trust has raised £1,900,000 to save the coastline of Britain and has brought 148 miles of coast line under its protection.

Tell us more Heritage Canada, but please make it simple and stick to facts. Maybe you are much better than the impression you have created so far. We are all interested in our Canadian heritage, but we want to know that the same consideration is to be meted out North, South, East and West. And one more thought, while we are interested in our old buildings, we are also interested in our countryside that has historic significance and beauty. Just for starters, we would like to mention the Life-saving Trail on the west coast of Vancouver Island and the Old Brigade Trail that runs from Tulameen to Hope in the interior, which is under serious threat of destruction. Do these projects fire your imagination?

MINUTES

Minutes of the Third Meeting of the Council of the British Columbia Historical Association for 1973-74, held in Vancouver Sunday February 10th, 1974.

Present: G.S. Andrews (Pres.); F. Street (1st Vice-Pres.); J. Roff (2nd Vice-Pres.); J. Rowland (Treas.); P. Yandle (Sec-Ed.); R. Brammall (Past Pres.); C. McAllister (Exec.); H.B. Nash (Exec.); A. Yandle (Co-Ed.); E. Norcross (Nanaimo); H. Ford (Alberni); M. Jordon and A. Hunter (East Kootenay); D. New (Gulf Is.); G. German and K. Leeming (Victoria).

The President called the meeting to order at 1.45 p.m. Moved New, seconded Brammall that the minutes be adopted as circulated - Carried.

Arising from the previous Council meeting the President brought up the subject of the retirement of Mr Willard Ireland and introduced the draft of a letter he thought should be sent by the President to Mr Ireland on behalf of Council. The letter was read and it was moved. Yandle, seconded Nash that the President send the letter as read. Carried. On the discussion as to whether Mr Ireland's position would be divided by the appointments of a Librarian and an Archivist, the Secretary stated that he had received a letter from Mr E. Hall, Provincial Secretary, stating that the wish expressed in our brief would be carried out - namely it would entail two positions, and it would be an open competition advertised across the country. Mrs McAllister thought she had seen an ad. for a combined position. The Secretary said he would check this out. (Since the meeting, the Sec. has checked and to date no advertisements have appeared for the positions.)

Also arising from the previous meeting was the setting up of a committee to explore the possibility of obtaining a grant from the Provincial Government. The President and Mr German had had a meeting with a representative of the B.C. Cultural Fund Advisory Committee. On the discussion of the advisability of Council going ahead and making formal application, it was felt that we should direct our efforts to obtaining recognition of the B.C. Historical Association by the Provincial Government in much the same way as the generous assistance granted by most of the provinces, as, for instance, Alberta and Manitoba. A. Yandle thought the key person to help in this matter would be the new Provincial Archivist when appointed. Until this appointment is made, our request would be in limbo. Moved Mrs Jordon, seconded Mrs McAllister, that the same committee stand and that it make representation to the Provincial Government, taking into consideration the correct timing, and to report back to a future Council meeting. - Carried.

The Secretary reported that there was no report from the Historic Sites Advisory Board.

The Secretary dealt with correspondence he felt should be brought before Council. The Brigade Trail from Tulameen to Hope was again in the news. The Vancouver Sun on February 6th had carried a full page article on the subject, in which it stated that a timber licence had been granted in the area of the Brigade Trail. The Secretary read a carbon copy of a letter by Jack Radford, Minister of Recreation and Conservation, to Victor Wilson, President of the Okanagan Historical Society, dated

January 21st, which gave no indication that the Government contemplated the issuance of any licences in this area. The Secretary had sent a Special Delivery letter to Mr Hatfield of Penticton, who is vitally interested in this area, outlining the action that could be beneficial to the cause by getting television exposure on C.B.C.

The Campbell River Society, through Mrs Ruth Barnett, had done some preliminary investigation into the feasibility of holding a convention in the Nootka area. She thought that the arrangements should be made from Campbell River, which also should be the convention headquarters. The Council was pleased to know that such a convention is feasible and that Campbell River might offer to host such a convention.

The Secretary gave a short report on the progress of the book dedicated to the memory of Gordon Bowes and will have some sample copies very shortly.

A letter from Alderman Pendakur of Vancouver was read, asking for the B.C. Historical Association's opinion in regard to the old Customs and Immigration Building at the foot of Thurlow Street in Vancouver. Arising from the discussion, Council felt that the building had (1) no architectural style; (2) no practical future use in relation to its waterfront position; (3) its removal to another site would not be justifiable; (4) many bitter memories attached to this building must be a source of annoyance to many New Canadians. Moved Mrs McAllister, seconded J. Roff, that this building in the opinion of Council did not have any significant historical value and that the Secretary so inform the Alderman. Carried, with one dissenting vote recorded by Miss J. Rowland. The President asked the Secretary to express the thanks from the Council to the Alderman for his courteous letter in this matter.

A report from the Constitution Committee gave rise to considerable discussion, and the Committee was given a directive on motion that should enable them to prepare a new draft. Moved Leeming, seconded Yandle, that the Co-Editor, Recording Secretary and the Historic Sites Advisory Board member be voting members of Council - Carried. Moved Brammall, seconded A. Yandle, that the two executive members (i.e. Councillors at large) be full members of Council - Carried.

The Committee agreed to incorporate a request from the Secretary that in the duties of the President, the matter of the Presidential Address at the Annual Convention be no longer mandatory, but that the President should exercise his own privilege.

#### CONVENTION 1974 at Cranbrook

After much discussion the following tentative programme was agreed upon.

Thursday May 23rd 7.00 p.m. Registration and get together at Town and Country Inn. Light refreshments - wine and cheese, coffee, etc.  
Friday May 24th 9.00 a.m. Old Council meeting. Registration.  
 10.00 a.m. Annual General Meeting. - Town and Country Inn.  
 12.15 p.m. Depart via bus for trip to Fort Steele. Box lunch.  
 President's Address and a short address of welcome by Struan Robertson, Superintendent of Fort Steele Restoration. Balance of the afternoon - tour up Wild Horse Creek; visit to two old cemeteries and a little gold panning.

6.00 p.m. New Council Meeting.  
 8.00 p.m. Talk by Marjean Noble - David Thompson's trip through the Kootenays. Refreshments served. - Town and Country Inn.  
Saturday May 25th. 9.00 a.m. Depart by bus to Kimberley. Tour of town and mill site. Luncheon served by Kimberley and Marysville members. Tour to Kimberley North Star Ski Hill. (We are still hoping arrangements can be made to see the Sullivan Mine.)  
 4.15 p.m. Return to Cranbrook.  
 6.00 p.m. Social hour - no host bar.  
 7.00 p.m. Banquet. (Roast beef) Short performance by Cranbrook Drama Club while tables are cleared.  
 Speaker: Mr David Turner of Heritage Park, Calgary. Topic to be announced.

Considerable discussion centred around the inclusion of a trip by bus to Libby Dam, Montana. It is approximately 300 miles for the round trip and would include stops at various points of interest, and lunch at the Dam. There was divided opinion on whether this should be included, as it would require leaving sharp at 9.00 a.m. and hopefully returning by 8.00 p.m. It was left that should it take place it would be on Thursday 23rd, but this would depend on how many wanted to take the trip.

Jill Rowland will investigate group air fares to Cranbrook.  
 Meeting adjourned on motion at 5.30 p.m.

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#### Re Libby Dam Trip

The East Kootenay Society would like to have an idea as to how many people would be interested in the Libby Dam Trip. If you are, would you please drop a line to Mr Dave Kay, 921 Fourth St. S., Cranbrook, preferably by the end of March, indicating your intention. This will help their committee to have their programme ready for the April issue of the News

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#### SOCIETY NOTES AND COMMENTS

BURNABY At the November meeting Alan McMillan of Douglas College related some of his experiences in archaeological research on the B.C. coast. His work on the Alberni dig was particularly interesting.

At the December meeting Mrs Eagles and her committee provided a Russian type dinner, followed by a talk by Dr Blythe Eagles about historical highlights in Europe that have most directly affected us here, illustrated by over 200 slides taken by himself and Mrs Eagles on a recent trip to Russia, Poland, Sweden, and Prague.

The January meeting took the form of a "know your society" night in which the headquarters room in the Mather House was visited and plans made for future efforts.

It is with deep regret that we note the passing in November of Miss Bessie P. Choate, aged 80 years. She was the daughter of John Frederick and Georgina Choate, late of Gilpin St. and Linden Ave., Burnaby. She was the founder of the U.E.L. Society of Vancouver and the Burnaby Historical Society. She was a very active member of the B.C. Historical Association and was the Editor of the Newsletter prior to the advent of the present B.C. Historical News. To her nieces and nephews and many friends we offer our condolences on the passing of a loyal member.

CAMPBELL RIVER & DISTRICT At their January meeting the resignation of Mrs Rose McKay as museum carator was announced. She was made an honorary life member of the Society. The new executive for 1974 is President: Mrs T. Barnett; Vice-Pres: Thor Peterson; Sec.: Ruby Wilson and Treas; Alice Evans. At the request of the municipal council the Historical Society asked the Comox-Strathcona Regional Board to take over the operation of the museum as a regional function. This request was refused and the executive will return to municipal council with a budget request to provide for a full-time curator with part-time help. The Society thinks the museum has reached the point of being a valuable facility and needs full-time direction to provide services to the community.

WEST KOOTENAY Constable Keith Burton was the R.C.M.P.'s centennial policeman at the June meeting of the West Kootenay Society. Constable Burton showed slides with taped commentary, which outlined the history and scope of the force from its founding in 1873 to the present. A lively question period included such topics as R.C.M.P. traditions, the controversial Trail police station, and the possibility of a city police force as an alternative to the R.C.M.P.

In September the Creston Branch invited East and West Kootenay members to join them in an outdoor get together at Summit Creek Picnic Park, 7 miles west of Creston. Traces of the old Dewdney Trail can be seen near the Park, marking the end of the portion from Fort Shepherd south of Trail. Here the engineers were faced with the problem of crossing the wide Kootenay River flats, sometimes by rafts, according to season.

A meeting was held in November, at which discussion was centred on ideas for the Society such as gathering of local history. The January meeting was addressed by three local old-timers.

NANAIMO At the January meeting the first speaker for Nanaimo's Centennial year was Patricia Johnson, who gave a talk on the theme "Nanaimo Round the Year", and from each month of different years she brought to life events from the past. There is room here for only a few of the highlights: in March 1864 was held the annual meeting in London of the Vancouver Island Coal Mining and Land Co. which expected great things from the extensive Nanaimo mines. April 1874 saw the establishment of the Nanaimo Free Press. In May 1887 150 people were killed in the No. 1 mine explosion. The first tourists arrived in June 1792, when Malaspina sent his Captains Galiano and Valdes to explore the coast and, anchoring off Gabriola, they came into contact with the local people and visited what was to become Nanaimo. In August 1852, Mr Joseph McKay "took over" the Nanaimo area for the Hudson's Bay Company, thus ensuring that the coal supplies would be preserved for Canada and preventing any attempt by America to move in. By September the first shipment of coal was sent to Victoria in the Cadboro, the mining being done by the Indians who laboriously dug out the coal and carried it by canoe to the ships anchored off shore. October 1879 saw the sale of the Wellington collieries to Mr Dunsmuir and Lt. Diggle, R.N.; the latter incidentally had been on the charting and surveying reconnaissances carried out by the Royal Navy, and tribute should be paid to him for mapping the area. November 27, 1854, was the day the Princess Royal sailed into Nanaimo with the first family settlers, an event which is still commemorated each year. Finally, on December 24, 1874 Nanaimo petitioned for and was given her Letters Patent as a City.

The Nanaimo Society notes with regret the passing of Jack Hardcastle, aged 90, noted maritime artist, and of Mrs Beatrice M. Yates, a life member of the Historical Society and a life member of the Native Daughters of Nanaimo.

PORT ALBERNI At the October meeting Mrs Ketha Adams, President of the Society for its formative first 8 years, was awarded a life membership. She was presented with a hand-printed scroll and a copy of Lewis's Wild Flowers of B.C. At the same meeting Mr Jamieson showed slides he had taken of historical sites in Eastern Canada.

The November meeting was the annual social open meeting. Selected excerpts from the 1902 diary of George Bird and the 1901 and 1912 diaries of pioneer W.A. Thompson of Beaver Creek were read by Anne Holt, Meg Trebett and Pauline Barrett. The diaries included references to the Boer War, coronation of Edward VII, the Titanic disaster, the cable ship Colona, etc. in addition to local events. They had particular significance for the senior citizens of the audience who contributed greatly by identifying many of the photographs displayed during the evening.

VANCOUVER Mr James Draper addressed the November meeting with an illustrated talk on the Bulwers of Hatzic, during which he recounted many first hand accounts of the life of a country gentleman and his family in the "colonies". The President, Mr R. Watt, addressed the January meeting on Heraldry in Vancouver.

The Society noted with regret the death of Dr M.Y. Williams, aged 91, a long time member. Born in Ontario and educated at Queen's University and Yale, Dr Williams in 1912 started a 9 year association with the Geological Survey of Canada. In 1921 he joined the faculty at U.B.C. and headed the Department of Geology from 1936 until 1950 when he retired. In the 1920's Dr Williams explored the Mackenzie River valley and conducted pioneering geological work in S. Alberta and Saskatchewan. He was later in charge of geological investigations along the Peace River in B.C. Dr M.Y. took a keen interest in British Columbia's history and has contributed to the B.C. Historical Quarterly. To his family we offer our deepest sympathy and we regret the loss of a very faithful and devoted member.

VICTORIA Dr Patricia Roy of the University of Victoria's History Dept. was the speaker at the November meeting. Her subject was "Lighting Up Victoria", an account of early gas and electric companies to provide illumination in the Capital area. The Christmas banquet, commemorating the Centenary of Mrs Nellie L. McClung, was held in the Faculty Club, University of Victoria. One hundred and twenty-six members heard Mrs Horace B. McClung give biographical notes on her mother-in-law, and the reading by Mrs Dorothy Laundry of "A Christmas Story" from Mrs McClung's publication "More Leaves from Lantern Lane". The Royal Scottish Country Dancers under the direction of Mr Gerry Dunn, and the Oriana Singers, under the direction of Mrs R.H. Goodacre completed the evening's entertainment. Gordon Elliot, Dept. of English, Simon Fraser University, entertained 130 members and friends at the January meeting to a witty and interesting account of his youth in Williams Lake, under the title "One Summer When I Was 12".



## JOTTINGS

In this issue there is a short article by Clare McAllister entitled "The Doll House that Travelled". She says "In sending the small enclosed snippet, regarding a sightseer's delight on this island, I had a notion that it might be possible for you to make a feature of such offerings". What an excellent idea; now all we need are the contributors.

In the same article she mentions that the Doll House has a Mansard roof. The Mansard roof was so named because it was frequently used by the French architect Francois Mansart, although it was not devised by him. It was in use a great deal in France in the 16th century. The slope of the roof from eaves to ridge is broken into two portions; the lower portion is built with a steep pitch, sometimes almost vertical; the upper portion has a low pitch and is nearly flat. This results in a more useful space being provided by the roof structure. Its popularity was in part due to the system of taxation in France, which was based on the number of storeys. By using this style of roof a "one-storey" house could, to all intents and purposes, have as much accommodation as a two-storey house, yet for taxation purposes it was still considered to be a one-storey house.

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From Vancouver Sun, Dec. 19, 1973..." CRANBROOK. The last of the Kootenay River sternwheelers lies sunk in the river, all because of vandalism. Walter Anderson, the owner, said the 65 ft. Kootenay ... will rest in a back eddy of the Kootenay River between Fort Steele and Wardner until spring..... If it can be salvaged it may be put into service on Lake Kooacanusa. Anderson said someone sank it by shooting a hole in its hull.

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In the Nov. issue of the News in the Jottings, there was an item regarding the theft of a bronze statue at King's Lynn. A letter from Vancouver City Archivist, Mr Ogden, states "You might be interested to know that the Mayor of King's Lynn has contacted our Mayor and asked us to provide him with photos of the statue or bust . . . that it might be replaced. Happily we have been able to comply". He further comments on the portraits both in Vancouver Archives and the Provincial Archives of Captain Vancouver as "of doubtful authenticity" and states they are most likely Capt. George's brother John. Does anyone know of an authentic portrait?

\* \* \* \* \*

From Van. Sun, Dec. 15, 1973. A news item from Victoria to the effect that the Cowichan Valley Forest Museum, north of Duncan, has been purchased by the Provincial Government for \$30,000. It will be renamed the British Columbia Forest Museum. It was started in 1954 by Mr G.E. Wellburn who will become a member of the B.C. Forest Museum Society which is being established to administer the museum. Mr Wellburn is a life member of the Victoria Historical Society.

\* \* \* \* \*

From the Oregon Historical News Feb. 1974 "The results of over three years' work and research culminates on July 1st, 1974 when Admiral Sir Charles Madden, President of the Board of Trustees of the National Maritime Museum of Greenwich, London, officially opens the Cook exhibit....Material relating to Captain Cook and his hardy crews has been promised from museums across the world.

\* \* \* \* \*

A most interesting First Annual Progress Report has been received dealing with Art and Architecture of Old Mission Churches and Cemeteries in B.C. The two young men engaged in this project are to be congratulated on this excellent brochure complete with text and pictures and asking assistance to continue this "neglected cultural heritage". Any of our members who would like to actively or silently participate in this splendid undertaking may do so by writing to John Veillette, Box 47, Savona, B.C., or Gary White, Box 2175, Smithers, B.C.

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#### OTHER CONFERENCES AND CONVENTIONS

Western Canada Study Conference - University of Calgary, Dept. of History; March 16th and 17th. Further information from Vancouver City Archivist.

Northwest Mounted Police Conference - University of Lethbridge, May 12th - 16th 1974. A part of Alberta's salute to the Mounties. Further information - Alex Johnston, Chairman, N.W.M.P. Conference, Research Station, Lethbridge Alberta, T1J 4B1.

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#### B.C. BOOKS OF INTEREST, by Frances Woodward

- ANDERSON, Doris. Ways harsh and wild. Vancouver, J.J. Douglas, 1973. 239 pp., illus. \$9.50.
- AURAL HISTORY INSTITUTE OF B.C. Manual, compiled by W.J. Langlois. Victoria, The Institute, Provincial Archives of B.C., 1973. 52 pp.
- BRITISH COLUMBIA. DEPT. OF HIGHWAYS. British Columbia Dept. of Highways ferries, by Frank A. Clapp. Victoria, 1973. 37 pp., illus.
- BRITISH COLUMBIA. DEPT. OF MINES AND PETROLEUM RESOURCES. The mineral industry of B.C.; reprinted from the Annual Report of the Minister of Mines... for the year ending Dec.31, 1971... Victoria, 1973. various paging, illus.
- BRITISH COLUMBIA. DEPT. OF THE PROVINCIAL SECRETARY. ARCHAEOLOGICAL SITES ADVISORY BOARD. Preserving B.C.'s prehistory. Victoria, 1973. 15 pp. illus.
- BRITISH COLUMBIA INDIAN ADVISORY COMMITTEE PROJECT, 1968-69. Bella Bella stories; .... recorded and edited by Susanne Storie and Jennifer Gould. Victoria, Indian Advisory Committee, 1973. xv, 195 pp.
- Bella Coola stories;... recorded and edited by Susanne Storie. Victoria, B.C. Indian Advisory Committee, 1973. xiii, 98 pp.
- Klemtu stories;... recorded by Susanne Storie, edited by Susanne Storie and Jennifer Gould. Victoria, B.C. Indian Advisory Committee '73. xiii, 67pp.
- Oweekano stories.... recorded and edited by Susanne Storie. Victoria, B.C. Indian Advisory Committee, 1973. xii, 72 pp.
- BRITISH COLUMBIA TEACHERS' FEDERATION. Vancouver houses, by Vancouver Environmental Education Project, U.B.C., Vancouver, B.C.T.F. 1972. unpagged, illus.
- CANADA. NATIONAL HARBOURS BOARD. Port of Vancouver, B.C. Vancouver, N.H.B., 1973. unpagged, illus.
- CHINESE CANADIAN PICTURE PROJECT, Ad Hoc Committee. Chinese Canadian picture project catalogue. Vancouver, Historical Photographs Section, V.P.L. 1973. 159pp
- CHODOS, Robert. The C.P.R.; a century of corporate welfare. Toronto, James, Lewis & Samuel. 1973. 178 pp. illus. \$3.95.
- GREATER VANCOUVER REGIONAL DISTRICT. PLANNING DEPT. Environmental quality in Greater Vancouver...prep. by Mary A. Franson. Vancouver, 1973. 39 pp. illus.
- INDIAN HERBAL REMEDIES PROJECT, O.F.Y. Indian herbal remedies. Van. 1973. 44 pp.
- LOGAN, Harry T. and Aubrey F. Roberts. The University Club of Vancouver: an informal history. Vancouver, University Club of Vancouver (1973) 31 pp.

- PETERSON, Lester R. The Cape Scott story. Vancouver, Mitchell Press, 1974. 134 pp. illus. \$3.95.
- ROBIN, Martin. Pillars of profit. Toronto, McClelland & Stewart, 1973. 351 pp. illus. Vol. 2. The Company Province, 1934-1972. \$12.95.
- ROGERS, Fred. Shipwrecks of the B.C. coast. Vancouver, J.J. Douglas, 1973. 256 pp. illus. map. \$10.95.
- SHEWCHUK, Murphy and Sandra. Exploring Kamloops country. Kamloops, Peerless Printers Ltd. & Murphy Shewchuk, 1973. 48 pp. illus. \$1.95.
- SMITH, James K. Alexander Mackenzie, explorer; the hero who failed. Toronto, McGraw-Hill Ryerson, 1973. 190 pp., illus. \$7.95.
- TATREAU, Doug and Bobbe. The parks of British Columbia. Vancouver, Mitchell Press, 1973. 133 pp., illus. \$3.95.
- WATERFIELD, Donald C. Land grab: Oliver Buerge against the authority. Toronto, Clarke Irwin, 1973. 193 pp., \$7.95.
- WOODLAND, Alan. New Westminster - the early years, 1858-1898. New Westminster, Naunaga Pub. Co. 1973. 72 pp. illus. \$3.95.
- WILTON, Jean. May I talk to John Howard? the story of J.D. Hobden, a friend to prisoners. Vancouver, John Howard Soc., 1973. 234 pp. illus. \$5.95.

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#### BOOK REVIEWS

THE PARKS OF BRITISH COLUMBIA. A comprehensive guide to B.C. Provincial and National Parks, by Doug and Bobbe Tatreau. Vancouver, Mitchell Press, 1973. 132 pp. illus. \$3.95.

Conceived as an antidote to "wilderness hunger" by two Americans from San Diego, this attractive book is bound to appeal to both natives and residents of British Columbia alike. Among its chief assets are brevity, clarity of presentation, handsome photographs in black and white and colour, and a pleasant balance of useful factual information and personal opinion.

It is primarily a guidebook and was written especially with the American visitor in mind. Consequently there is a section at the beginning giving information about B.C.'s history, climate, hunting, fishing, and road regulations and tips on crossing and recrossing the border. However, the main body of the book is of interest to locals as well. A portion of the introduction explains that with a few exceptions, the parks which are discussed are the largest in the province, each one with an area of at least 18,000 acres. Thus we find Pacific Rim, Yoho, Bowron Lakes, Garibaldi, Strathcona, Tweedsmuir and so on, 26 in all, organized into five geographic areas; Vancouver Island, West Coast Mainland, Southern B.C., Central B.C., and Mountain and Northern B.C. The exceptions are one Provincial Park, Mount Seymour, and three historic sites: Barkerville, Fort Steele and Fort Rodd Hill.

While the names of most of these parks are familiar ones to British Columbians, this reviewer suspects that many, like himself, have only the haziest conception about how to get to these parks, and what one can expect to see on arrival. This book is particularly helpful here. Each park is described separately in terms of its history, size, location, access, accommodation and chief attractions. These brief biographies give all the necessary details for a preliminary assessment of the park as a possible destination for a trip or simply as a jumping off point for knowing more about the natural attractions B.C. has to offer. Maps are also provided for over half the parks, showing, in stylized form, main geographic features as well as roads and locations of accommodations and campsites. The maps

produced, as far as this reviewer was concerned, are the only real irritant in the book. It is not clear why they are not provided for all the parks and in 1 case, the map for Golden Ears Park is found with that for Kokanee Glacier Park, 16 pages after the information on Golden Ears.

Apart from this puzzle with the maps, the book is a very good precis of some valuable information. It is perhaps significant although not surprising that it has taken two foreigners to give us this survey of the riches of our parks. They deserve credit for reminding us of our heritage in such a handy and readable fashion.

Robert D. Watt

Mr Watt is President of the Vancouver Historical Society.

\* \* \* \* \*

THE UNKNOWN ISLAND, Vancouver Island. by Ian Smith. Vancouver, J.J. Douglas, 1973. 174 pp. illus. \$17.95.

This beautiful book and its Regional Wildlife Biologist author, have been given generous attention on radio and television. Costly, with 120 photographs (of which 90 are in "full colour"), with additional black and white sketches on the copious margins of its pages, the volume may well be viewed as falling into the modern genre of drawing-room table books. These tend to come out at the festival season, ready for those with generous pocketbooks to bestow on grateful friends.

About every third page of type is sandwiched between full-page or even double-page spreads of superb colour photographs, - these apart from smaller colour offerings. Of 174 pages, 67 have any printed matter, print often taking up as little as one-fourth of the page. Book design, layout and typography are such as to highlight the splendid photographs. Among the memorable ones are: the island in snow; early morning mist along the Gold River; and one of the Pachena light station . . . white and scarlet buildings set on green lawn, on a black and savagely rocky shore, gnawed by the frothing sea. A good map affords easy reference to the fiords, lakes and mountains highlighted in the text. We learn that Vancouver Island is almost as long as Ireland. Its place names and qualities may be less known, even to British Columbians.

If one considers the matter set in type to be the meat of a book, there may be less satisfaction with this than with the pictures. The Table of Contents covers: The Forests, in five sections; the Mountains, in three; the Underground, in one; and finally, the Oceans, in four sections. In all of these areas of interest, animals, birds, fish and marine creatures, and plant life are given attention.

On occasion, the author writes well, groping to give us in words his sense of awe. . . " . . . the static force, a sort of equilibrium involving the power of wind and surf and the power of the trees and bushes growing in the face of such adversity" . . . "It is difficult to comprehend the extent of the mountains and the massive area that they cover". He tells of snow 'til July and of lakes not clear of ice until August, in the higher parts of an island that elsewhere fosters evergreen growth such as salal, arbutus and oregon grape, with early spring wild flowers, perhaps in February bloom.

The book sets out to be popular. However, although its author has a

Master's degree in Wildlife Management, it does not afford the sort of reading that would lure the lay or amateur observer into seeking a broader understanding, or scientific approaches. For the southern area wildflowers, the pleasant names in use by little children are given: "chocolate lily" for fritillaria; "yellow monkey flower" for mimulus; "Easter lily" for erythronium. (In other parts of the island this last may be known as "curly lily" or "dogtooth violet".) Scientific names, paired with the popular names, which can vary so treacherously from place to place, can be very useful in luring the learner into better acquaintance. This lay kind of approach is not confined to botanical material. Spiders in an island cave are described as, "in appearance like daddylonglegs . . . one wonders what they eat". No point of reference is noted as to how one might find out more. Lamprey eels are "ghastly looking things". The writer speaks of "trailing blackberry, not the common blackberry", seeming not to know that the trailing form is the native, while two other sorts have spread rampant, even through unlikely parts of the island, from immigrant stock.

However, such lacks in the relatively scanty text should not be over-emphasized. The book doubtless accomplishes its mission, in giving a sense of the extraordinary variety of island terrain, how its altitudes and exposures affect flora and fauna, how logging practices affect wild life, and how the actions of man have changed all of these. Despite man's efforts, it is the seemingly indestructable metal of the grounded ship that is eaten by the ocean's wash on west coast reef, while the worn rock, the ragged fir, remain to view.

An index with reference to common and scientific nomenclatures of tree, plant, animal, bird and marine life, as well as to place names, would make the book more useful. Perhaps this will be seen in a later edition.

Clare McAllister

Mrs McAllister is Secretary of the Gulf Islands Branch.

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BOWEN ISLAND, 1872-1972, by Irene Howard. Bowen Island Historians, 1973. 190 pp. \$7.95.

I feel this book will appeal to a great many people, especially those, like myself, who have fond memories of the island over a long period of time, forty-six years in my case. In the book's pages and in the splendid photographs that illustrate it, one meets many old friends. It is evident that Mrs Howard interviewed many people and spent long hours gathering facts from many sources, to write the story of Bowen Island.

As a member of the Cates family I felt I knew a lot of the island's history. When I read the book I realised I really knew very little, except as it concerned "Uncle John" and the good times I had enjoyed there. Captain John Andrew was very proud of the fact that he came from Nova Scotia and his home in Point Grey was called "Bay of Fundy".

Bowen Island 1872-1972 gives us a good description of how the island was settled and of how, after that, it became a popular resort for day excursions. Many people will recall with nostalgia the picnic cruises to Bowen where the trip to and from the island on one of the Union Steamship fleet of ships held all the thrill of an ocean cruise to an exotic isle.

The passengers loved the Lady Alexandra, the Lady Cynthia and the Lady Rose. The high point of many a happy day in the twenties was, to quote from the book, "As the Lady Alexandra left the dock the orchestra would play and Percy Dodson would dive from the bridge."

There are four appendices which give the background of the people who settled there. Appendix III is titled "The Cates Family" and because two of Captain Charles Henry's sons are mentioned I would like to add a note. He had three sons. Captain James Francis was the youngest and he too served his city, North Vancouver, as an alderman. The index is in two parts: "Part 1 - General" and "Part 2 - Persons". I found many familiar names in the latter. There is also a "Guide to Sources". These were many and varied. Much of the information contained in this book came from the Bowen Island Historians, from printed books, journals, magazines and some pages transcribed by the late Major J.S. Matthews from his Early Vancouver.

I am sure this is a book that will be read and re-read with much pleasure by newcomers to the island, as well as by those of us who "knew it when".

Suzanne Elliott Cates.

Mrs Cates is a member of the Vancouver Historical Society

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NATURE WEST COAST: As Seen in Lighthouse Park, compiled and illustrated by members of the Vancouver Natural History Society; edited by Kathleen M. Smith, Nancy J. Anderson and Katherine I. Beamish. Vancouver, Discovery Press, 1973. 283 pp. illus. \$7.95.

The great value of Lighthouse Park lies in the fact that it is a virgin area which has never been logged over and so retains its vegetation relatively undisturbed - and yet is so close to a large centre of population. (p.14)

More than eight years ago, members of the Vancouver Natural History Society decided to produce a pamphlet. The area to be described in the pamphlet was Lighthouse Park on the North Shore of Burrard Inlet. The project was not unique since many other societies were doing similar things. However, the pamphlet began to feed off the flora and fauna living within the park, and the feast was so rich that the pamphlet grew into a booklet and was finally published in the fall of 1973 as a hard covered book of 283 pages.

For all its relatively small size, Lighthouse Park has considerable variety in vegetation types and has a rich and diverse flora. Such diversity in a small area reflects partly the great variations of topography found in the park but is also due in part to the park's location very close to the transition between two major biogeoclimatic zones. (p.19)

The book literally brings the park to life. First, it places it in an historical, a geological and an ecological framework. Then it leads the user off on countless adventures and explorations as he discovers what each life form is, how it got into the park, and where it can be found. Individual respect and appreciation of Lighthouse Park can only increase through use of this book, and in the long run it may contribute significantly to the preservation of the park as one of the few truly natural areas remaining on this coastline.

The body of the book contains drawings and descriptions of more than 360 life forms found within the park, from lichens to trees, and insects to mammals and marine life. Glossaries for each section explain uncommon terms, and references are provided for additional reading.

CLAM WORM or PILE WORM *Nereis vexillosa*

Free-living, segmented, with laterally placed paired bristles and paddle-like projections on each segment which enable it to burrow, crawl or swim. Distinct head which has two small tentacles, two palps, four eyes and four pairs of long tentacle-like structures. Has an extendable proboscis armed with a large pair of black pincers capable of inflicting a sharp bite. It is carnivorous, feeding on smaller organisms. COLOUR: Iridescent green or brownish. SIZE; Variable, 2-12 inches in length. HABITAT: Abundant under rocks and beds of mussels on sandy or gravel beaches, or on wharf pilings in the upper and middle intertidal zone. (p.253)

Nature West Coast is written in a simple and straightforward manner, with an emphasis on content rather than style. The descriptions are carefully worded and the accompanying sketches actually look like what they are portraying - certainly important, but not always the case in books of this nature!

This is not a book to sit down and read in front of the fire on a rainy evening. Rather, it is a book to be used at Lighthouse Park, and beyond, since the flora and fauna described can be found throughout the Lower Mainland and the Gulf Islands. It is one of the most complete "guide" books I have ever used.

The only real criticism I have of the book is that although it is intended to be used, it was not designed to be portable. It has a hard cover and is a reasonably large size, making it rather cumbersome. It should have been smaller and soft-covered, so that it could fit neatly into a pocket or pack.

Other than the above, I have nothing but praise for this fine first effort on the part of the Vancouver Natural History Society. Whether you explore natural history as an interested amateur or a knowledgeable professional, Nature West Coast is guaranteed to bring you many, many hours of enjoyment and enlightenment.

Janet E. Willson

Janet Willson is an "interested amateur", writer and author.

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THE DOLLHOUSE THAT TRAVELLED by Clare McAllister

A kind of gazebo or miniature summerhouse, in the style of old fashioned park bandstands; under it is a splendid dollhouse, with mansard roof, much like those so often depicted in Charles Addams' "New Yorker" cartoons . . . indeed this assembly startles the traveller to a precipitate halt. Such a charming sight might anywhere stop the passerby, but how much more he is enchanted, making the find from the road, standing outside a small cottage, near the north end of Galiano Island. Galiano is the first stop from Vancouver-side, on the Gulf Islands ferries. It stretches some 18 miles north and west from the famous Active Pass.. The cottage of the owner

of the dollhouse, Mrs Devina Baines, is located close to Porlier Pass, where a marina, a lighthouse and an Indian reservation mark the extreme north end of the island.

Many dollhouses have a front and sides, the featureless back being made to stand against a bedroom or playroom wall. Mrs Baines' dollhouse, built in Nanaimo, on Vancouver Island, about 1900, is remarkable in being as whole as any ordinary house. Peering under the shade of its summerhouse type shelter, one may walk a full circle round, admiring front porch, side entry, back porches, gables, attic windows, bedroom windows. Parlour, dining-room and kitchen are clearly discernable spaces through the shining small windows. The mansard roof has, in miniature, the fancy shingling of its period of construction.

Mrs Baines will laughingly tell how her father, Frank Allison, and a friend, two young Nanaimo bachelors, built the house at the turn of the century. They agreed that the permanent title to their handiwork should go to the one who first married. It thus became the property of Mrs Baines' father. His friend never did marry . . . (but it is not known if the lack of the dollhouse was any part of the deterrent.) Mrs Baines knows that it was devised as a copy of an actual Nanaimo house of the period, but does not know what house was copied.

When Frank Allison took the post of lighthouse keeper at Porlier Pass, the dollhouse accompanied him to Galiano Island. That was about the year 1911 or 1912; it stood on the lighthouse grounds for many years.

Asked if she used to play with the dollhouse as a child, Mrs Baines says, with a grin, that she guesses "about a hundred kids played with it!" As there are, even now, only some 327 voters on Galiano, this was a bit startling, but it was explained that summer visitors' children, even 60 years ago, were drawn to the fascinating house. It was also a sort of landmark for boats that went past the lighthouse point, through Porlier Pass.

The dollhouse was shifted to its third site about 1937 or '38. This move found it set down outside the house of Harry Baines and his wife Devina, now respected and well-known as "old-timers of the island. The canopy, cedar-shingled, was erected to keep the house safe from wet coastal weather. Mrs Baines has recently refurbished the house itself, replacing windows and wooden parts as necessary, and supplying a glossy new coat of paint.

So there it shines, a period piece for any wayfarer to admire, and for any child to covet. As for dolls - who knows what dreams they may have of occupying mansions that date back to the turn of the century!

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PLEASE NOTE: The deadline for the News is the 10th day of the month of issue, namely, November, February, April and June - no exceptions.

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## BRITISH COLUMBIA'S AIR SURVEY STORY

## Part II

by G. S. Andrews.

It was with the Forest Surveys Division, early June 1930, that the author permanently entered the provincial service, as "Party Chief" of the Flathead Forest Survey. This covered a mountain-cradled watershed of 900 square miles draining south into Montana, in the extreme southeast corner of British Columbia. Transport was entirely by packhorse from the old coal town of Corbin, south of Fernie. There were no air photos. I had worked the previous summer on the Elk Forest Survey, nearby, as undergraduate, on the late E.W. Bassett's party, also without air photos. However the summer of 1927 had provided a typical introduction to air photos, on the Manitoba Pulpwood Survey, east of Lake Winnipeg, under direction of Roland Craig, Dominion Forest Service, Ottawa. On that job, oblique air photos were delivered to our party on its return to the lake, after several months scrambling blindly over rocks, muskegs and lakes of the Pre-Cambrian Shield. In this case, the photos served more as a post-mortem of difficulties encountered than an aid to the job in progress. The Flathead survey in 1930, so remote and primitive, I must confess, was one of the most enjoyed, if strenuous, in my album of survey memories.

Early in 1931, after the winter in Victoria completing maps, timber summaries and report of the Flathead Forest Survey<sup>18</sup>, I was assigned, for the coming season, to the Tranquille and Niskonlith Forests in the old "C.P. Railway Belt", north of the Thompson River, between Deadman River and Adams Lake, near Kamloops. The "Railway Belt" had recently reverted to the Province after having been under Federal jurisdiction since the period of railway construction, circa 1885. In the "Belt" were several "Dominion" Forests which the Province wished to incorporate in its array of Provincial Forests. A large party was authorized, possibly 20 men, including cook, packer, draughtsman-computer, a junior, as well as several "cruiser-compassman" teams. There was an assortment of motor transport for road access, and pack-horses for parts beyond. My preparations were well advanced for taking to the field when a pal, W.A.A. ("Lex") Johnston, who worked with Collins on Forest Reconnaissance, informed me that part of the Niskonlith Forest was covered with 1928-30 R.C.A.F. air photos, which were "on hand" in custody of Major Alistair I. Robertson, B.C.L.S. (then) air photo librarian for the Surveyor General, with whom I was in "bon accord". The photos were discreetly "borrowed" for the summer, without reference to "higher authority". A stereoscope, for observing the photos in three dimensions was also scrounged.

There was no opportunity to even look at the air photos till about mid-season, when our work progressed toward the area covered, at which time we were camped luxuriously indoors at the old Louis Creek Ranger Station, northeast of Kamloops. The photos covered roughly 300 square miles, mostly to the east. At first it was chaos - spreading overlapping photos on the floor, like shingles, strip by strip, into a loose mosaic. However, they displayed a striking continuity of ground features, creeks, lakes, swamps, and variations in the tapestry of forest cover. The problem was, how to pin down all this useful information on our base-map, the photoscales being larger and variable with ground elevation, then unknown. By good luck,

18. Andrews, G.S. "Survey & Management Plan, Flathead Forest, 1930".  
B.C. Forest Branch, Victoria, B.C., 1930.

two members of my party, Marc W. Gormely and Wm Hall, had worked with Norman Stewart, in the winter of 1929-30, plotting photos for the "P.G.E. Resources Survey". With their help we contrived to make radial plots of the photo-strips on waxed (lunch) paper, far from ideal. We soon found, even with the photos so crudely plotted, how the most efficient layout of our ground examination strips could be made, both for tying them in on the map, and for best sampling of the various forest types. It became reassuring also, that where our ground strips crossed the various features to be mapped, as identified and located from the photos, there was good agreement. For the terrain between ground strips, a mile apart, the photos offered infinitely more detail than orthodox interpolation by observation, guessing and sketching.

One wet weekend, taking advantage of the shelter of the Ranger Station, I kept my whole crew in to plot photos. Our boss, F.D. Mulholland, arrived unexpectedly, as was his custom. The place was a shambles, with most of the floor space littered with air photos, preliminary to plotting. Explanation was demanded, and given, Mulholland enjoyed our high respect and loyalty, but he loved to clarify problems by argument, and would take either side with relish and brilliance, according to the dictum "from the clash of divergent opinions the flame of truth will arise". I stood my ground, respectfully, but with the strength of conviction, and won approval to continue using the air photos, but nevertheless to conduct the survey fully on orthodox procedures, with the photos as a supplementary aid, and plotting them in "spare time". He knew there was no spare time on a survey. The photos saved significant time and labour in the field by indicating the best way to get over the ground, as well as for locating and tying in our ground strips.

In preparing the final returns of survey after the field season<sup>19</sup>, in addition to the customary maps, I made a special sheet for the area covered by air photos, which showed, with a suitable legend, the information as obtained with the photos and that which would have accrued without them, by ground methods alone. The result was convincing proof of the virtues of air photos. The extra detail and the subtleties of outline derived from them were striking, and final proof was that wherever our ground strips and traverses crossed features also derived from the photos, there was full agreement. Mulholland was satisfied, and thereafter became a staunch and influential supporter of air survey.

Some time after the 1931 field season, back in Victoria, the small nucleus of air survey proselytes there was catechized by a veritable "prophet from the East" in the person of Brigadier General Sir Charles Delme-Radcliffe, who had recently retired to Victoria, having been Chairman of the British Cadastral and Topographical Air Survey Company, Ltd., London.<sup>20</sup> Ten years earlier he had terminated a brilliant military and diplomatic career in Britain, the Mediterranean, India, Africa, etc.<sup>21,22</sup> On this occasion he gave an evening lecture to a select group of some 25 local Surveyors, Foresters and Engineers, on the sophisticated Nistri Photocartograph for 3-dimensional plotting of stereoscopic ground or air survey photographs, which his company had promoted under licence from its makers in Italy. The lecture was in the Pemberton (now Yarrow) Building on Fort Street, and it

19. Andrews, G.S. "Survey & Management Plan, Niskonlith Forest, 1931";

B.C. Forest Branch, Victoria, B.C., 1931.

20. File 016222, Items 269-277. Surveys Branch, Dept. of Lands, Victoria, B.C.

21. Vancouver Sun, 13 Dec. 1937, page 16. Obit. "Sir Charles Delme-Radcliffe".

22. Daily Colonist, Victoria, 14 Dec. 1937, page 1. Obit. "ditto"

appears that of all present, only two now survive, Mr G. John Jackson, B.C.L.S. and myself. Neither of us can remember the exact date, but we agree that few present, if any, were able to follow Sir Charles' discourse, and I distinctly remember my old friend, the late H.A. ("Digger") Youdall, B.C.L.S., being sound asleep in a back row. Probably my close and brilliant friend, the late Dr Lyle G. Trorey, P.Eng., was one of the few able to follow the speaker. Others present would certainly include Messrs McCaw, Campbell, Stewart of the B.C. Phototopographic Division, Mr F.C. Green, Surveyor General, G.G. Aitken, Chief Geographer, Cyril Jones, City Engineer, and Mr Musgrave. This lecture was prophetic, since the realization of instrumental 3-dimensional plotting of air photos was not to accrue in British Columbia for another two decades (almost), when we installed the Multiplex Plotter in 1950

For the 1932 field season a shortage of funds was foreseen. Mulholland approved my proposal, that to reduce costs and to facilitate operations, a preliminary map of the Shuswap Forest (east of the Niskonlith) be compiled from air photos available, prior to going to the field. This was done with some temporary help, better facilities in the Victoria office, and experience gained on the Niskonlith job. With this map, the air photos, a stereoscope and the usual kit of instruments, I set out for the Shuswap Forest with a single technical assistant, "Stan" G. Eruce. A packer, Jim Brown of Kamloops, with half a dozen packhorses was hired for the first half of the season, working the "high country", Adams plateau and the Crowfoot summer sheep range, back and beyond. In the later season we worked uphill from the shoreline perimeter on Shuswap Lake, with canoe and outboard motor. The preliminary map and photos made it possible to lay out the ground strips to best sample and confirm the air photo identity and location of various forest types and other detail, and to depart somewhat from the mathematical grid of random sampling. Cruise strips and traverses up the main valleys strengthened the control for the photo plots. Elevations were carried by abney level and barometer, to control quite acceptable contouring by stereoscopic observation of the air photos. On the lake in September, we enjoyed a meeting with the celebrated surveyor and alpinist, A.O. Wheeler and his wife, who were on a fishing holiday. Field work terminated in early October, and by late January 1933, the final version of the map and timber summaries were completed in Victoria. The result was some 350 square miles examined and mapped to higher accuracy and in greater detail than ever before in this type of survey, by a technical crew of two. The previous season, with the large party and facilities mentioned, an area of 750 miles had been covered.<sup>23</sup>

Meanwhile my interest in air survey caused avid reference to what scant literature was then available. This included Professional Papers 3, 4 and 6 of the (British) Air Survey Committee<sup>24,25,26</sup>, Oxford Forestry Memoirs 8 and 13, by Professor Ray Bourne<sup>27,28</sup>, and Bulletin No. 62 (Ottawa)<sup>29</sup>,

23. Andrews, G.S. "Survey & Management Plan, Shuswap Forest, 1932"; B.C. Forest Branch, Victoria, B.C. 1932.
24. Hotine, M. "Simple Methods of Surveying from Air Photographs"; Prof'l Paper No. 3, Air Survey Committee, G.S.G.S.; H.M.S.O., London, 1927.
25. Hotine, M. "The Stereoscopic Examination of Air Photographs"; Prof'l Paper No. 4; Air Survey Committee, G.S.G.S.; H.M.S.O., London, 1927.
26. Hotine, M. "Extensions of the Arundel Method"; Prof'l Paper No. 6, Air Survey Committee, G.S.G.S.; H.M.S.O., London, 1929.
27. Bourne, Ray. "Air Survey in Relation to Economic Development in New Countries"; Oxford Forestry Memoir No. 8, Oxford, 1928.

and a few others. I was much impressed with Bourne's account of mapping copper-bearing strata in Northern Rhodesia by correlating the underlying geology with surface vegetative cover, which could be identified and mapped from air photos. In June 1932 I wrote to the Imperial Forestry Institute, Oxford University, enquiring about post graduate studies in air survey. I was informed there were no regular courses, but that special studies could be arranged under Professor Bourne, for about six months, partly in the U.K. and partly on the Continent, to begin early in 1933.

Correspondence was also initiated, early in 1932, with other air survey notables, as they became known to me. These included Ellwood Wilson, (formerly) Chief Forester, Laurentide Pulp & Paper Co., at Grand'Mere, Quebec, under whom I had worked as undergraduate in the summer of 1928, Roland Craig of the Dominion Forest Service, Ottawa, a director of the Manitoba Pulpwood Survey in 1927, and Stuart Moir, (then) Manager, Fairchild Aerial Surveys Inc., Dallas, Texas and formerly associated with Ellwood Wilson in Eastern Canada. Mr Wilson mentioned post-graduate possibilities at the Forst Akademie, Tharandt, Germany, and also referred to Sir Charles Delme-Radcliffe and the Nistri plotter. Later in the summer, when possibilities at Oxford and on the Continent began to clarify, I asked Mr Wilson (25 Sep 1932) about a grant from the Charles Lathrop Pack Forest Education Board, of which he was a member, and with his encouragement, formally applied for a Fellowship (24 Nov. '32). The Board's decisions would be made the following March, 1933. This initial contact with Ellwood Wilson was to win his encouragement and influential support throughout the critical years which followed.

On our return from the field, Autumn 1932, Mulholland announced, regretfully, that due to impending budget cuts, we junior forest officers would be put on "indefinite leave without pay" in the coming fiscal year. I immediately confirmed arrangements to go to Oxford for the programme offered. Anticipating unemployment, the expense of overseas study, and having only recently squared off some college debts, strict economy was the rule. With a modicum of family influence, discreet allocation of three bottles of Johnny Walker's "Black Label", (one to my Vancouver "contact", one to the Ship's agent in Victoria, and one to the Skipper), and a nominal fee, I worked my passage to England via Panama on the old Norwegian freighter "MV George Washington", Fred Olsen Lines, sailing from Ogden Point, Victoria, 31 January 1933<sup>30</sup>. Mulholland had contrived to keep me on the payroll till the last work-day prior to my departure.

After a brief call at Port Alberni to stow some huge squared timbers on deck, with a full cargo we cleared for Panama, and delayed by gales for a day or two in the Caribbean, after 43 days at sea we tied up at Surrey Docks in the Thames. In London I put up at the Regents Palace Hotel, Piccadilly Circus, a few days to complete and mail the verbal text of my Shuswap Forest Report<sup>23</sup>, which I had not quite finished in spare time at sea. Phone contact with Oxford advised me to join Professor Bourne at Ye Olde Crown Hotel, Marlow, Bucks., where, with some senior students he was doing field studies in ecological interpretation of air photos. The stay at Marlow was a pleasant

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28. Bourne, Ray. "Regional Survey and its Relation to Stock-taking of Agricultural and Forest Resources of the British Empire"; Oxford Forestry Memoir No. 13; Oxford, 1931.
29. Canada. Topographical Survey. "The Use of Aerial Photographs for Mapping"; Bull. 62, Ottawa, 1932.
30. Victoria Daily Times, 31 Jan. 1933. "Veteran Norwegian Ship Here Today."

introduction to the charming countryside there, and the life style of British students, which seemed to conceal much serious hard work beneath a cloak of casual detachment. Returning to Oxford with Bourne, it did not take long to read through his small library of air survey literature. He then sent me off to Tharandt bei Dresden, Saxony, where he had arranged a 10-week programme under the celebrated Professor Dr R. Hugershoff.

In delightful spring weather of mid-April, I travelled 2nd Class via Harwich and Hook of Holland, and was dismayed at the class distinction on the channel steamer. In spite of never having studied German I arrived in Dresden, and took a local train ("Bummelzug") some 14 Km. out to Tharandt, with full inventory of baggage, money, etc., if somewhat bewildered. Tharandt was a small dorf surrounded by mixed forest and farm land, where the Forst Akademie and Geodätisches Abteilung, (Survey School) were located, both being parts of the main university in Dresden (Die Technische Hochschule zu Dresden). On the trip across Germany I had noticed at many stations, a large sign "FRAUEN", and wondered if he were some national hero, but was later to learn it meant "WOMEN". Somehow I found Hugershoff's office, where I was cordially welcomed. He and his staff spoke good English. The Professor had been in the U.S.A. to introduce his Aerokartograph plotter, and was proud of his slang vocabulary. Helped by other English-speaking students, including a fellow Canadian, G.W.I. ("Wilf") Creighton from Nova Scotia,<sup>31</sup> I soon got settled in and to work.

During holidays in July, I joined Professor Bourne's forestry tour in the Jura, Zürich, and the Black Forest, and was surprised to be much in demand as interpreter. This gave me some needed confidence in German, and thereafter progress was better. In Switzerland, I managed a week-end in Geneva with my sister Mary, then on staff of the Canadian Secretariat to the League of Nations, under Dr W.A. Riddell. From Les Verrières I also spent a Sunday with la famille Benoit, War I friends of a chum at home, at Andelot-en-Montagne, just across the border near Pontarlier. There, my tendency to confuse newly acquired German vocabulary with high school French could not have been very diplomatic. In spite of this, the Benoit hospitality was overwhelming.

Meanwhile, a letter from the C.L. Pack Forest Education Board, dated 6 March 1933, and forwarded from Victoria, via London, advised that a grant in my favour could not be made, due to shortage of funds, among other things. The disappointment was contained by tightening my belt one more notch. Having heard from Mulholland, also, that re-employment prospects were still bleak, I returned to Tharandt for the Fall and Winter semesters, duly registered as a post-graduate student.

Much time was spent in Hugershoff's well equipped photogrammetric laboratory, which included an early model of the sophisticated Zeiss Stereo-planigraph (C2). I also attended Hugershoff's lectures in the following subjects:

- Höhere Analysis I (Differential Calculus)
- Die Mathematische Behandlung von Beobachtungsergebnisse (Statistics)
- Vermessungskunde (Surveying)
- Höhere Analysis II (Integral Calculus)
- Photogrammetrie
- Methode von Mindestens Quadrate (Method of Least Squares)

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31. Afterwards Deputy Minister, Lands & Forests, Province of Nova Scotia.

and by way of diversion, heard some forestry courses viz:

Standortslehre	Prof. Kraus	(Site studies)
Bodenkundliches Prakticum	ditto	(Soils)
Forsteinrichtung	Prof. Heske	(Forest Management)
Pflanzensociologie und Waldtypen	Prof. Rübner	(Plant sociology & Forest types)

Professor Kraus was a fine old Bavarian, whose greeting was "Gras Gott" instead of the prevalent "Heil Hitler". Hegershoff's lectures were brilliant and humorous, during which he smoked cigars. The larger instruments which he had invented were provided with ashtrays in the basic design. He would say "Mein Herrn, you cannot operate this instrument unless you smoke!"

Mid-September 1933, Hegershoff sent me up to Jena for a week-long introductory course in photogrammetry for German engineers and army officers, sponsored by the famous Zeiss firm there, the principal lecturers being Professor Otto von Gruber and himself. The array of photogrammetric equipment there included Hegershoff's Aerokartograph and an early version of the Multiplex plotter. Interesting members of the Zeiss staff included Dr E.O. Medster, and Herr Hess, whose brother Rudolf was Hitler's mysterious emissary to Britain, later in World War II. I was interested to learn how Carl Zeiss, the ingenious instrument maker and Professor Ernst Abbe, optical physicist, together built up the famous Zeiss Werke, and that a contributing factor to its success was the propinquity of pure silica sand deposits from which the Schott Glaswerke made high grade optical glass. Interesting too that the Zeiss firm was then a cooperative with worker participation in profits and direction, thanks to a benevolent bequest of the founders.

Toward the year end, Ellwood Wilson, with whom I had kept in touch, and who followed my studies with keen interest, advised me to re-apply for a C.L. Pack Bursary, which I did.

At the end of the "Winter Halbjahr", late February 1934, I declined a warm suggestion from Professor Hegershoff to remain another semester to do a "Doktor Arbeit", not being primarily interested in a fancy degree, being nearly "broke", and a bit homesick, and having had more optimistic news from Mulholland about re-employment. My origin from the "wilds" of far away British Columbia must have appealed to the Professor's romantic sentiment, and no doubt it would be good publicity for the University there if I should do a thesis on application of German photogrammetry in opening up the great northwest of America. Indulgently, he referred to me as his "nichtbeissenden grauer Bär aus Britisch Columbien".<sup>32</sup> I became quite fond of the Professor, a strange blend of genius and fanaticism, but warm and human withall.

My return to the U.K. included a stop at Copenhagen to visit Hegershoff's assistant, Dr Christof Neumann, who with his wife, Erika, had shown me warm friendship in Tharandt. Neumann was then temporarily seconded to the Danish government to assist in mapping the east coast of Greenland, with the Hegershoff Aerokartograph, using oblique stereo air photos taken with an English "Eagle" air camera. My arrival in Copenhagen by night train from Berlin, on a bright sunny morning, was with a feeling of unforgettable relief from the sustained tension and hysteria of Hitler's "Nazionalsozialismus" which dominated Germany at this time. I felt like a plant, brought from a

32. "The good-natured grizzly bear from British Columbia".

dark cellar into the fresh air and sunshine of democracy. From Copenhagen I continued on to Oslo, to visit an alumnus from the University of Toronto Forest School, Frithjof Flahte and his lovely bride, Asta, in her parents' home. Frithjof and Asta had come down to Oslo, especially for my visit, from their forest home at Teraak, far up the coast near Namsos. On learning that Asta's father was senior director of the Fred Olsen Line, I dared not divulge my trip to England, scrubbing decks on one of their ships! The first evening at dinner, the whole family, including younger brothers and sisters, spoke English entirely, for my benefit. The dear old Mother explained, however, that they could hardly keep this up for the whole of my visit.

Early in March, 1934, I survived a stormy crossing of the North Sea to Newcastle-upon-Tyne, and went up to Forfar, Scotland, near Dundee, where I was put right to bed by my kind hosts, the Rev. and Mrs Alfred Wilson, to subdue a bout of flu. The Wilson's were parents of Margaret, wife of my close friend, Lyle Trorey, of Vancouver. In a sizable stack of mail awaiting me at Forfar was a letter from the C.L. Pack Forest Education Board, Washington, D.C., advising the award of a \$500 bursary to assist with my current studies. This news quickly vanquished the flu bug. Too late for an extended programme in Germany, this windfall provided wider scope for professional visits en route home, in the U.K., eastern U.S.A. and Canada. Professor Bourne arranged valuable contacts, and I carried letters of introduction from a patron back home, the late R.P. Bishop, B.C.L.S. to moguls in the British War Office. These proved "open sesame" to high calibre and charming people, - Capt. G.T. McCaw, J. Calder-Wood, Lieut. J.S.A. Salt, Capt. Michael Collins, and Col. M.N. MacLeod, Chairman of the Air Survey Committee. Capt. M. Hotine was away on leave. These gentlemen were interested in my impressions of sophisticated German photogrammetry, especially as qualified by my practical background in air survey at home. Only a few years later, several were to become valued friends in World War II. Also, Sir Charles Delme-Radcliffe had given me a letter to Brig. Gen. H. St. J. L. Winterbotham, Director General, Ordnance Survey, Southampton, which, not having time to use, I conveyed to him by mail, with a note of regret. His reply is worthy of quote:

Ordnance Survey Office,  
Southampton, 23 March 1934.

My dear Andrews,

I am sorry indeed to have missed you, for any friend of Sir Charles Delme-Radcliffe bears his credentials with him.

Let me say that I like the tone of your letter because such new developments as those of air photography are largely obscured to-day by the vested interests which have produced the different ways of using them. Air photography is good value for forestry and of value for many other things. You may apply it with a sledgehammer like our friend Hugerhoff, or with a pencil as we do in the Arundel method. Of all the machine methods the Nistri is, I think the most practical and cheapest. But a great deal can be done for individual cases in simple ways. Had you been able to come in the first instance I should have merely redirected you to Bourne at Oxford and to his colleague Troop who is a mine of experience gathered in the tropical parts of Africa. In your professional way, however, you went straight to the authorities and cut out the frills. I am sorry you did so because it robbed me of a personal chat with you.

Give my very kind regards to Sir Charles when you see him, and as you land at Victoria give the island an additional greeting from one who has been there and loved it. Yours sincerely, H. St. J. L. Winterbotham



This letter belies a waggish nickname for Winterbotham coined by young subalterns of the Royal Engineers, - "Brigadier Cold-and-stern".

Arriving in New York, early April, after a 10-day voyage, "on the velvet" in a "fast freight-passenger" ship, a day was spent with M.R. Myer of Fairchild Aerial Surveys, Inc., and a visit to their factory for air cameras, etc., at Woodside, Long Island. En route to Washington, D.C., a brief stop at Philadelphia afforded an interview with Ellwood Wilson, my adviser for the Pack Fellowship. My first contact in Washington was with Mr Tom Gill, Secretary for the Pack Board, and thanks to him, in several days, I saw all the important air survey authorities there. These included G.H. Lautz, M.S. Wright, and H.C. Ryker of the U.S. Forest Service; Majors Wheat, Staack, Col. Birdseye and Mr Shuster of the U.S. Geological Survey; Major Bagley and Capt. Geo. MacDonald of the U.S. Army Air Corps; and Mr Franklin Reed, Editor of the Journal of Forestry.

Next stop was Montreal, after paying duty a second time on perfume consigned to a girl friend and her sister in Victoria from their "Auntie Pickie" in London. Here, I saw Frank T. Jenkins, Paul Laframboise and A.E. Simpson, in the Air Survey Division of Canadian Airways. A full week in Ottawa was well spent with most of the air survey notables, including Roland Craig, H.E. ("Cy") Seely of the Forest Service; A.M. Narraway, R.B. McKay, C.H. Taggart, of the Topo. Survey; W.H. Miller and D.A. Nichols of the Geological Survey; and Major E.L.M. Burns and A.E. Attfield of the Army Survey. In Toronto, R.A.N. Johnson of the Forest Branch was my contact, and in Winnipeg I saw George Tunstell and W.N.D. Halliday. Finally, in Vancouver I was able to convey greetings to Major D.R. MacLaren of Canadian Airways from F.T. Jenkins in Montreal. These contacts brought me well up to date in air survey situation in Canada, generally.

Arrival back in Victoria was on Thursday 10 May, 1934, and on the following Monday I was re-entered on the Forest Surveys Division payroll, under Fred Mulholland. By this time, priorities for the coming field programme were already allotted to my stay-at-home confreres, negating the dictum "Absence maketh the heart grow fonder", and confirming "out of sight, out of mind". The budget was still sub-normal, so compromises were necessary. Learning of my assignment as assistant chief in an area not covered with air photos, and that there was a special job in northern Vancouver Island completely covered with photos, and topo. maps made with them recently by the Phototopographic Division, I protested to Mulholland, who at once directed that I accompany C.D. Schultz on the Nimpkish job, as "air photo specialist". When regaled with lurid tales of the previous season, 1933, when a single party, entirely of party chiefs, operated up the coast from the confines of our small motor vessel, the B.C. Forester, I was thankful my time had been spent abroad so profitably to mind and soul, if not to the purse.

About this time, somehow, somewhere, I prepared a paper on German applications of photogrammetry to forestry, and mid-May sent it off to the Forestry Chronicle in Toronto. By unusual luck, it appeared in the June issue following<sup>33</sup>. Thanks to Miss Janet Wilde (later Mrs J.L. Bowden), our faithful secretary in Mulholland's office, reprints were distributed to air survey contacts in America and abroad, while Schultz and I were in the field. It was timely, and well received, especially by people like Ellwood Wilson, my adviser on the C.L. Pack award.

33. Andrews, G.S. "Air Survey & Forestry - Developments in Germany"; (Canadian) Forestry Chronicle, June 1934.



The Nimpkish job was rewarding in full measure, if strenuous and spartan, being done entirely on foot with back-pack. Before going to the field, several weeks were spent interpreting and plotting forest types from air photos, on the excellent topo. base map. We also used available information from commercial timber cruises. Finally, about mid-July, Schultz and I took off in a Bellanca aircraft on floats, with a new 17-foot Chestnut canoe lashed between the floats, grub, instruments, camp kit, pack boards, and some 50 pounds of air photos. Major Don MacLaren was pilot, and Fred Mulholland came along for the trip. Weather caused a detour from Campbell River via Gold River and Muchalat Lake to land on Vernon Lake, where we left the canoe and a grub cache. Mulholland had to try out the canoe, which he upset for a dunking. We then flew to Woss Lake to place a second grub cache, and finally to Schoen Lake, where Schultz and I deplaned with the balance of the outfit, on a steep salal-covered bank, and wistfully watched the aircraft ease away from shore for take-off. MacLaren's farewell still rings in my ears "Well boys, guess you can walk home!". We did (in effect), It took more than two months.

We covered the watersheds of the Nimpkish, Kokish, Tsitika and Adams Rivers. The canoe was for transport down the Nimpkish River, reported navigable, but log jams were an impediment. Lining up Woss River, swollen by heavy rains, the canoe fouled in a log jam and collapsed beyond recovery, injuring our pride more than our persons or outfit, beyond a wetting. The canoe had really been more a hindrance than help. Paring our kit to an austere minimum, surplus items were abandoned at the forks of the Woss and Nimpkish Rivers. I hoped my elegant "Black Diamond" rubber pants would be found by some logger before disintegrating. Our real "cross to bear", in adherence to the air survey gospel, was the 50 pounds of air photos, divided impartially between two packs. Weather and bush prone to being wet, a routine round our evening campfires was to spread out the photos to dry, some becoming "toasted" to a light golden brown. The last move on this job was over the ridge between the lower Adams and Salmon Rivers. Eating lunch on a knoll overlooking rapids in the Salmon River, where we planned to ford, the antics of a bear catching salmon amused us till ready to cross. Then our unkempt appearance must have scared him off. This summer, living and travelling like two wild beasts in the coast rain forest was a distinct but refreshing contrast to my previous year in the sophisticated confines of Europe. It was gratifying, also, to have survived the vicissitudes with my partner, in harmony and mutual respect. Like War, the Bush is a proving ground for men, which engenders a tacit esteem that does not die in later years, often along quite divergent paths.

My appendix, in part, to Schultz' official report of this job<sup>34</sup> follows:

"In the Nimpkish project air photographs provided the basis for (i) a detailed and accurate topographic base map; (ii) a remarkably good preliminary forest type map; (iii) efficient planning and despatch of all field operations; (iv) accurate and universal horizontal control for locating them; (v) a guide in appraising the reliability of (commercial) cruise information and extending it to areas for which none was available. Photo-scale was too small for detail identification of species, or for data as to tree sizes.

In conclusion, it is stated with confidence that the final maps,

34. Schultz, C.D. "The Nimpkish Forest Report"; B.C. Forest Br. Victoria, 1934.

estimates, and report of the Nimpkish Forest project, covering some 1,400 square miles of difficult, largely inaccessible country, containing one of the largest reserves of merchantable timber in the coast region, are of an order of quality comparable to the standard  $1\frac{1}{4}\%$  forest survey on the straight terrestrial basis, at  $1/6$ th the field cost. The maps are incomparably superior. This was in part due to available commercial cruise information, but fundamentally to the advantage of having the tract covered with aerial photographs, and to having them compiled into topographic and preliminary forest type maps prior to going into the field."

Acting once more on Ellwood Wilson's advice, I applied, in late November 1934, to the C.L. Pack Foundation for a further bursary to assist with research in forestry applications of air survey, and some pertinent travel. Appended was a reprint of my article about Germany, recently published.<sup>35</sup> In January, 1935, Henry S. Graves, Chairman of the Board, advised that a grant of \$1000 had been approved. This good news set the pattern for some experimental work and some travel that year, for which I was excused routine duties by the Forest Branch. Holidays in March were used for air survey visits in San Francisco and Los Angeles. Professor Percy M. Barr at Berkeley helped with contacts in the "Bay Area", and in Los Angeles I visited Fairchild Aerial Surveys Inc., where Leon T. Eliel and Ed. Polley explained their use of the Hugerhoff Aerokartograph and the Zeiss Stereoplanigraph, for large scale projects including the reservoir for the Boulder Dam. Other air survey agencies in northwestern U.S.A. were visited in July. "High Priests" on this trip included J.B. Yule at Missoula, Howard Flint at Spokane, and in Portland, Oregon, Victor Flach and Lage Wernstedt<sup>35,36</sup>. I was pleased that the C.L. Pack Board again asked Ellwood Wilson to be my adviser on its behalf, and indeed, mine.

At home, the programme included design and construction of improved stereoscopes; work on a simple, but intriguing stereo-plotter, based on fundamentals conceived and proposed by Deville in 1895,<sup>37</sup>; obtaining (from Ottawa) and cataloguing technical data relevant to the considerable stock of photos in the Survey Branch air photo library; and making a synopsis of a bibliography of air survey literature on hand and on record. Efforts to organize some experimental photo flights with various filters and emulsions, including infra-red, and scales (altitudes), proved abortive, mainly from lack of suitable equipment. However an excellent tract of timber types for age, volumes, species, etc. was found (after considerable field work) in the Greater Victoria Water District, near Sooke Lake. The most significant project was the determination of tree heights by simple parallax measurements on vertical air photos. This exploited several sets of air photos over the Victoria area of various scales and dates. A simple parallax micrometer bar was designed, and beautifully made by a local instrument machinist, Louis Omundsen. Ground checks on the selected trees were made with the help of the late Wm F. Veitch, who had been assigned to me as a student assistant. Results were written up and published in the Forestry Chronicle for June 1936.<sup>38</sup> The full report was accepted by the Association of Professional Engineers of B.C., as a "Graduate's Thesis",

35. Wernstedt, Lage. "The Orientation of Oblique Aerial Photographs"; U.S. Forest Service, Region 6, Portland, Oregon, 1935.

36. Obit. "Lage Wernstedt, 1878-1959, A Pioneer Photogrammetrist" Canadian Surveyor, 15:2, March 1960, pp. 128-9.

37. Deville, E. "Photographic Surveying...." Ottawa, 1895.

38. Andrews, G.S. "Tree heights from air photographs" Forestry Chronicle, June '36.

for professional membership, and reprints, expurgated of numerous errors in the original publication, were given quite wide distribution. In due course, it received quite gratifying reviews in the Canadian Surveyor<sup>39</sup>, the Empire Survey Review<sup>40</sup>, and Photogrammetric Engineering<sup>41</sup>. It also served as an acceptable report to the C.L. Pack Board, in justification of its award.

Late in 1935, the Forest Branch decided to initiate a programme of Look-out Photography, for fire protection, along lines applied in the western U.S.A. The American equipment was expensive and quite heavy, most of their look-outs being accessible by road, whereas in B.C. back-pack and trail were the rule, and money was scarce. This being an application of photogrammetry, I was asked to develop suitable equipment and procedures. A fairly simple modification was made with one of the survey cameras used by the Photop. Division. To orient the camera in a precise direction, it was mounted on the base of an old "muzzle-loader" theodolite, in place of the original telescope superstructure, which instrument had been received from W.R. ("Bill") Tait, property clerk in "Lands". This enabled it to be levelled and turned to any desired angle on the horizontal circle, and precisely set by a vernier and slow-motion screw. On cleaning up the old instrument, encrusted with verdigris from decades of storage in a dusty vault, I found an inscription on the underside of the upper plate, which read: "Repaired by Schmolz, San Francisco, 18 February 1858". This suggested the instrument had been a "forty'niner" in the California gold rush, and had found its way north to the Fraser River rush, sometime after 1858. Although heavy, and not so accurate by today's standards, it served our purpose admirably. Later, it was re-assembled in original shape, reconditioned, and is now officially "at home" in the Provincial Museum.<sup>42</sup>

During the 1936 field season, I was able to verify the procedure and equipment, assisted by Douglas Macdougall, on a number of forestry look-outs on Vancouver Island, and the mainland. It was enjoyable work, Macdougall being an old field hand, a good companion, and a dry humorist. The work pattern was to drive by car to the foot of the look-out trail, then back-pack up to the look-out for overnight. After cooking supper and camp chores, we would set up the (modern) theodolite and establish "True North" by observing Polaris. Next morning, we would read the true azimuths to prominent points round the horizon, for permanent reference at the station. We would then replace the theodolite with the camera, on the same tripod, orient it to Cardinal directions, and expose a complete round of photos at 45-degree intervals. The look-out men, usually old timers and alone on their stations most of the summer, were glad of company on whom to expend their accumulated talk. Macdougall carried a neat little .22 automatic pistol with which we could knock over the odd grouse on the trail, a welcome addition to the pot for supper. When someone derisively remarked that the pistol would not be much help against a grizzly bear, Doug would reply with a poker face, "That's just what it is for, when we meet a grizzly, we can shoot ourselves with it!". While this project was a diversion from the strict line of air survey research, its success made a favourable impression on the powers that be, and proved I was not completely submerged in obscure technology for air survey. A more technical treatment of it appeared some years later.<sup>43</sup>

39. Review "True (sic) Heights from Air Photographs", P.E.P., Canadian Surveyor, 5:11, Jan. 1937, p.1.

40. Review "Tree Heights from Air Photographs", E.H.T. Empire Survey Review, 4:24, April 1937, London. p.100.

41. Review "Tree Heights from Air Photographs", O.S. Reading, Photogrammetric Engineering, Wash. D.C., March 1937.

42. Andrews, G.S. "Survey Notes for Docents". Provincial Museum, Victoria, B.C. 24 Feb. 1970, p.5.

43. Andrews, G.S. "Air Survey & Photogrammetry in British Columbia", Photogrammetric Engineering, Wash. D.C., March 1948.

TO BE CONTINUED. The foregoing is subject to revision; for which the author reserves copyright.