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Field Guides to Geology and Mineral Deposits in the Southern Canadian Cordillera

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Field Guides to Geology and Mineral Deposits in the Southern Canadian Cordillera

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This book is a compendium of guides to 13 field trips conducted for delegates to the Geological Society of America Cordilleran Section meeting in Vancouver in May 1985. Although similar guidebooks were published for the field trips of the Calgary (1981) and Victoria (1983) Geological Association of Canada annual meetings, most of the guides are modified and updated versions of those articles.

Included for the first time is the surface geology for the LITHOPROBE profile across Vancouver Island by A. Sutherland Brown and C.J. Yorath and a description of the Pacific Rim Complex along the southwest coast of Vancouver Island by Mark Brandon of the Pacific Geoscience Centre. Also new is a tour of the Eocene Chuckanut Formation on Bellingham Bay, Washington by S.Y. Johnson of the USGS. The works by Brandon and Johnson are the outcome of doctorate studies at the University of Washington and are well illustrated and documented articles with convincing interpretations. New work and new concepts are also presented by L.C. Stuik on the boundary faults of four tectonostratigraphic terranes in the Cariboo area of central British Columbia, and by R. Parrish *et al.* on metamorphic complexes and Tertiary extension in the Okanagan to Slocan Lake area of southern British Columbia. These are ongoing projects by the Geological Survey of Canada.

Seventy-five pages of the volume plus nine pages of references are devoted to a Cordilleran Cross Section from Calgary to Vancouver. They describe a 4-day tour mainly along the Trans Canada Highway with alternate routes through the Coast Plutonic Complex west from Lillooet; one through Whistler and the other along the Fraser Canyon. The leaders, W.H. Monger, J.A. Roddick, and R.A. Price of the Geological Survey of Canada have devoted most of their lives to Cordilleran geology and tectonics. The tour is similar to the trip held in conjunction with the 1981 Calgary meeting. Historically, these tours show the great progress that has been made not only in data collecting, but also in interpretation and application of new concepts since the Southern Cordilleran Structure Project was conceived in the early '60s (Wheeler, 1970).

One of the guides describes the volcanology and structure of Tertiary outliers in south central British Columbia, including Sumas Mountain in the Fraser Valley, the Tulameen and Hat Creek coal basins, and Tertiary rocks near Penticton, Kelowna, and Kamloops. The leader is B.N. Church of the BC Geological Survey, recognized expert in this field. For Quaternary geologists there is a tour of the Lower Fraser Valley led by J.E. Armstrong, dean of Quaternary studies in the Fraser Lowland, J.J. Clague of the GSC and R.J. Hebda of the Provincial Museum. L.E. Jackson, M. Church, J.J. Clague and G.H. Eisbacher give a fascinating description of slope hazards between Vancouver and Whistler. A mere reading of the guide makes one apprehensive about travelling Highway 99 north of Horseshoe Bay.

Finally, mineral deposits in the Cordillera are represented by four trips led by R. Walker of Westmin Resources and G.E. Ray, V. Preto, and T. Höy of the BC Ministry of Energy, Mines and Petroleum Resources assisted at each deposit by company and mine geologists. The deposits visited include the Buttle Lake massive sulphide orebodies on Vancouver Island, gold deposits on Harrison Lake and in the Coquihalla-Fraser River serpentine belt; and the stratabound base metal orebodies at Goldstream north of Revelstoke, in the Salmo area south of Nelson and the Sullivan mine at Kimberley. The geological setting of prospects in the Adams Lake-Clearwater region north east of Kamloops includes visits to the Homestake, Rea gold and the Birk Creek massive sulphide showings.

The size of the guidebook, 8-1/2 × 11 inches, and its thickness make it a volume not to be carried lightly into the field. The book is profusely illustrated with black and white drawings, photographs and sketches. Geologists will need more than their ordinary hand lenses, however, to read many of the diagrams although they are all clearly printed. Two of the most spectacular pictures are the colored photographs making up the front and back covers.

For geologists, field trips are not only fun, but they form a very important aspect of scientific communication. Money aside, most field geologists work to tell their peers, their principals or employers what exciting stuff they have discovered "in the bush". What better reward can a working field geologist achieve than to stand on the outcrop and explain it to a captive audience. This incentive outweighs the hassle of preparing the field guide in spare moments, setting up the logistics and praying for fine weather and good lunches. Thus, field trips passionately display people-oriented field geology at its best. Of necessity, guidebook compendiums are a mixed bag. This one is no exception. It should be read and used not only by delegates to the GSA meeting as a reminder of a very fine day, but by everyone interested in the outcrops and scenery close to our highways and in the unfolding story of the geology of the southern Canadian Cordillera.

Reference

Wheeler, J.O., 1970, ed., Structure of the Southern Canadian Cordillera: Geological Association of Canada, Special Paper 6.