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Geologic Highlights of the South Okanagan, British Columbia

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REVIEW

Okanagan Geology South: Geologic Highlights of the South Okanagan, British Columbia

Edited by Murray A. Roed and Robert J. Fulton
Okanagan Geology Committee
Sandhill Book Marketing Ltd., Kelowna, BC
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Stocks and bonds come with buy/hold/sell recommendations, but what is the equivalent for books: Buy/borrow/shun? At any rate, *Okanagan Geology South* is a definite 'buy'. A 'buy and hold'. A 'buy and bequeath'. It is usual to say of a book like this that it belongs in the library of every home and school. That does not go far enough. It really belongs in every car, truck and RV that roams this storied land, and should be among the treasured souvenirs of every tourist, traveller and visitor who has an interest in its natural history.

Above all, this book must be kept handy. People should be able to pull over, grab it and ask: "Now what does Murray say about ***that***?" But why 'Murray', when the book lists eleven other contributors? The answer is simple: Murray Roed has done the lion's share of the work. Of the book's ten chapters, he is sole author of five (chapters 1, 2, 3, 4 and 10), lead author of one more (chapter 5, with co-authors Norman Williams, Jennifer Clarke and Nigel Skirmer), and contributing author of two more (chapter 6, by Brian Hughes, Roed, and Jennifer Clarke; and chapter 7, by Laurie Neilson-Welch, Diana Allen and Roed). In only in two chapters (chapter 8 by Don Dobson and chapter 9 by Robert Fulton) does he take a well-deserved rest (limiting himself to just one 'sidebar' in chapter 8).

It is not only text that Murray Roed offers. He is an accomplished artist as well. I counted no fewer than eight of his landscapes in acrylic. Not quite the McMichael Canadian Collection, but a wonderful addition nevertheless.

This brings me to another aspect of the book that stands out: Simply put, it is a work of very great beauty. Almost every page has an illustration of some sort: a photograph, a diagram, a map, or a graph. Most are in colour. Some are hard-edged, framed or set in shaded relief. Many others are deliberately faded so that they dissolve into a misty background to the text, an effect I find quite evocative. Some photographs have been culled from archives; most appear to have been taken to support this work. Sources are listed in the Acknowledgements. Illustrations are credited to Roed and Darcy Senger; design to Darcy Senger and Jill Webb Veitch. They have done a fine job: The book has a pleasing choice of colours, variety of illustrations, and effective balance between image and text.

The book aims to be a survey of 'geologic highlights', but it goes much further than this. Chapter 1 (Geologic Pioneers) describes the early contributions of those who coax stories from stones – true stories it is always to be hoped, but so often incomplete or incoherent. The chapter is divided into three sections: the Age of Discovery (early 1800s to about 1900); the Age of Stabilization (1900 to 1960), and the Age of Destabilization (1960 to now), a tribute to the undoing of settled science by the revolution in plate tectonics.

Chapter 2 addresses basic concepts in geology (time, rock types, tectonics) and some of the tools used in our craft (e.g. geophysics). This chapter, I think, needs more editing than any other in the book. It attempts to cram a great deal into a small space and suffers for it. The Geologic Time Scale on page 32 is from a 1999 text book and should be replaced with the 2004 version by the International Commission on Stratigraphy. More urgent than this is the mismatch between the dates in the Time Scale and those used in the 'Okanagan Geologic Events Summary' on pages 52–53. This will confuse careful readers. 'Tertiary' and 'Quaternary' crop up here and there, a testament to the difficulty of expunging familiar terms. A pair of colour plates (microphotographs/photomicrographs – both terms are used) on page 40 should be replaced. The intent is to illustrate differences between extrusive and intrusive igneous textures. A photo of a polished slab would do a better job. It would also lighten the heavy load placed on the captions, which now allude to elements of optical microscopy, petrography, crystallography, mineralogy, alteration and chemistry. Too much, I submit, for any lay reader to digest. The rock in Plate B can be Jurassic or '~90 million years old', but not both. The description of its location ('east of Okanagan Falls in the hills') will not help a geo-sleuth

find the truth.

Chapter 3 sketches a geological history of the region, starting with the Big Bang(!), quickly traversing the Precambrian, Paleozoic, Mesozoic and Cenozoic, before concluding with longer accounts of the Pleistocene and Holocene. (Another typo here: The duration of the Paleozoic should be 'about 300 million years', not '400' as stated.) Glacial and postglacial events get a full and satisfactory treatment that links familiar features (lakes, cliffs and creeks) to the processes that formed them. The narrative style is both informal and informative, with appealing touches of humour.

The core of the book is Chapter 4 (Highlights of Residential Centres). Eight areas have been chosen: Osoyoos, Oliver, White Lake Basin, Okanagan Falls, Kaleden, Penticton, Naramata, and Summerland. Here the book fulfils its aim to be a practical field guide. Images, locations and text appear to be carefully cross-referenced. Points of interest (each identified on a brightly coloured geological map) are described with enough detail to interest readers even if they repeat their visits. The mysteries of Giants Head, Crater Mountain and China Wall are all here revealed.

Chapters 5, 7 and 8 show the intimate interplay between geology and our day-to-day world. Chapter 5 (Geological Hazards) could be subtitled with a maxim attributed to historian Will Durant: "Civilization exists by geological consent." Slides, rock falls, debris torrents (including the 2010 event at Testalinden Creek near Oliver), sink holes, earthquakes, and volcanic ash fall (from active volcanoes of the High Cascades) are given equal, and equally sobering, treatment. Chapters 7 and 8 (Groundwater and Surface Water, respectively) address a vital resource in this arid place. Osoyoos claims to have Canada's only true desert. Hike off-trail anywhere and you will encounter cactus whose painful barbs drive home this fact. The authors of these chapters take time to deliver messages about scarcity and conservation. Groundwater is an unmanaged resource in BC, and proper care of aquifer recharge areas requires local initiative.

Chapters 6 and 9 have unexploited bacchanalian connections. The former describes the region's history of mining, and the latter explores the link between geology and wine. Chapter 6 (Mining and Exploration) reads a little like an obituary of a dear old friend. The mineral potential of the area remains good, at least according to assessments by the BC Geological Survey. But … changing patterns of land use, the creation of parks, ever-increasing demand for the same land and resources, and the imperative for conservative management of natural areas (the south Okanagan has the largest number of endangered species in BC, perhaps in all of Canada) seem to have extirpated miners from this area forever. One resource not covered in this chapter is aggregate. This is a little surprising because it is a near-urban extractive industry rife with conflict and ire.

I can guarantee that some readers will head straight to Chapter 9. What better place to read about Geology and Wine than the shaded terrace of a boutique winery with a glass of Gewürztraminer in hand? Few pleasures can match this! Author Robert Fulton describes the concept of *terroir*, discusses whether it applies to the Okanagan, and if so how. The science of terroir appears to be, well, embryonic, requiring much more research, and, of course, extensive and intensive sampling. I see rivers of Chablis… A chapter like this leaves me wondering: Does Robert Fulton, en route to the US, say to himself: "Remember: I am a geologist; NOT a terroir-ist"? And do UBC Okanagan students get asked to compare and contrast terrace, terrane, terrain, and terroir? Hand me another glass of that Pinot Noir, please, the one with the rock on the label. I'm doing science here!

The last chapter (Chapter 10, Reflections) rounds out the book. It could function equally well as a preface as it describes the purpose of the book, how it is organized and what distinguishes this book from others. The book ends with References, Glossary, Subject Index and About the Authors (brief biographies). References are suggestive, not exhaustive, and encourage further exploration. Historically important works are listed, as well as some current ones. There are website references to mineral deposits. I tried the links to MINFILE but got a 404 error. This could be rectified by using a more generic URL. A few entries in the Glossary may leave lay readers reeling; they seem correct, but invoke technical terms that will confuse rather than inform.

Regional readers may wonder why this book might not have been combined with a future edition of Okanagan Geology (Roed and Greenough 2005). Simple addition may be the answer. Putting these two volumes together would make a tome of over 400 pages. Its heft alone would limit appeal. This volume has a nice size (16.5 by 24 cm) and is only 1 cm thick. It fits the 'handy' category well and would slip into the door pocket or glove compartment of any vehicle. Also, one can speculate: This is a labour of love by a man in love with the land. Would the lead author have as much influence over the work if he had to work with a larger editorial board?

I hope this book sees successful sales and future editions. It is a wonderful gift to the region from a large team of authors, contributors and sponsors.

REFERENCE

Roed, M.A., and Greenough, J.D., editors, 2005, Okanagan Geology: Sandhill Book Marketing Ltd., Kelowna, BC, 220 p.