# Book Reviews



## Vancouver Geology – A Short Guide

by G. H. Eisbacher
*Cordilleran Section, Geological Association of Canada, 56 p., 1973*
Paperbound $1.00.

Reviewed by C. S. Ney
*c/o Quintana Minerals Corp.*
*1215 – 2 Bentall Centre*
*Vancouver 1, B.C.*

It is a challenge to any scientist to reduce his knowledge and understanding of things to a discourse that the novice may understand, but yet the experienced reader will find interesting. *Vancouver Geology* attempts to meet this challenge.

A brief, well worded introduction introduces the reader to the processes of geology and explains what the book will try to do. Six pages that follow give a short account of the Geologic History of the Vancouver Area. The next 44 pages describe the geology of 14 localities grouped in five different areas about the city from the Mountains in the north to Fraser River Delta in the south. These areas cover, with some overlap, a wide variety of subject matter, e.g., the formation of granitic rocks, the transport of beach sand, the sinking of delta lands. The book concludes with a brief glossary of about eighty geologic names and terms. There is one simple and effective coloured foldout geological map, several sketch maps, and a couple of dozen black and white photographs.

While many of the photographs are excellent for representing a geologic process or material, there is in many of them a regrettable lack of perspective, scale, or scenic connotation. A photograph on page 20 of columnar jointing in Stanley Park fails to convey any sense of scenery; it is an injustice to the spectacular Lions Gate of Vancouver Harbour. The same may be said of the view on page 26 of Capilano Canyon.

No economic minerals are mentioned in the text, although some do occur within the map area. This is a pity, because though they are rare, mineral deposits should be considered natural products of geologic processes.

This little book will be a very useful one for students down to grade 10, possibly to 8 or 9. It will be a valuable guide to a certain section of the public who have already acquired an interest in geology. But because of its terse factual style of writing, the austerity of its illustrations, and the fine printing, it is not going to prove an attraction to the wide group of naturalists that the subject deserves.

MS received, March 14, 1974.

## Sellout: The Giveaway of Canada's Energy Resources

by Philip Sykes
*Hurtig Publishers, Edmonton*
*235 p. 1973*
$8.95 for cloth cover
$2.95 for paper cover.

Reviewed by T. A. Oliver
*Department of Geology*
*The University of Calgary*
*Calgary, Alberta T2N 1N4*

*Sellout* is essentially a popularized version of the brief "Economic Development with Environmental Security" written by a group of academics, the Dalhousie Four. While the main theme is accurately stated in the title, the author jumps from issue to issue: the Mackenzie Valley pipeline; the energy crisis; the misuse of Canada's water resources in the Columbia, the Churchill-Nelson System, and the James Bay area; PRIME and NAWAPA; the "fire sale" of Alberta's gas and oil resources; the role of the multinational oil companies; the waste of resources; and finally, a slap at "Ottawa, the Careless Guardian".

Some common threads run through the melodrama. The villains are the slick Yankee traders, the provincial premiers – the "foxy, Machiavellian" W. A. C. Bennett and the crafty opportunist Bourassa, among others – willing to sell off the country's resources for short-term gains, the Federal Government unwilling to impose long-term solutions, but above all the multinational companies buying up the country. The victims are those Canadians losing jobs because of the export of resources, and the native

Canadians of the Mackenzie delta, Manitoba, and Quebec being displaced and plundered in the search for loot. In the process, claims Sykes, we are losing or have lost our independence, and the Mackenzie Valley pipeline decision, which he keeps coming back to throughout the book, represents Canada's "last chance" to retain some control over our resources.

Well, Sykes states openly that his book is not a "neutral effort", and the reviewer has little trouble agreeing with that statement. Loaded words and phrases abound: blunder and plunder, ripoff and rape, destruction and fire sales.

The geologist concerned with energy will be dissatisfied with the approach to that field. Most of the statements and quotes are qualitative, and some of the quantitative ones are simply wrong. On the important issue of oil reserves, Sykes states that the Canadian Society of Petroleum Geologists estimates oil reserves to be 85 billion barrels, *including* the tar sands, which is not true. His concern with the further destruction of Canada's rivers by hydro projects may well be eliminated by the growing use of CANDU reactors, yet the growth of nuclear fuel technology is scarcely mentioned in the book.

In the epilogue, Sykes is critical of the recently published "An Energy Policy for Canada", which he claims was "effectively neutered by the Trudeau Cabinet". Most geologists would, I believe, prefer that statement as a much more balanced one of the problems of finding, developing, and estimating our energy resources. Decisions and policies to govern further exports are still open national choices, and it is quite possible that the energy picture and our options will change so drastically within the next few years that statements like Sykes', and reviews like this one, will be rendered quite meaningless.

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## Sand and Sandstone

by F. J. Pettijohn, P. E. Potter, and Raymond Siever
*Springer-Verlag, New York, 618 p., 1972.*
$31.10 for hard cover,
$14.50 for soft cover.

Reviewed by Jean Lajoie
*Université de Montréal*
*Montréal, Québec*

As we learn from the preface, the book is an updated edition of the 200-page syllabus, Geology of Sand and Sandstone, published in 1965 by the Indiana Geological Survey for a conference on sandstone. It is intended as a text or supplementary text for advanced undergraduate and graduate courses.

The book is divided into 12 chapters grouped into four parts plus an introduction. Part I (124 p.) consists of three chapters on mineral and chemical composition, texture, and sedimentary structures. Part II (144 p.), The Petrography of Sandstone is divided into three chapters: the petrographic classification, petrography of common sands and sandstones, and the volcaniclastics. Part III (145 p.), Processes that Form Sand and Sandstone, includes three chapters on production and provenance, on transport, deposition and deformation, and on diagenesis. Part IV (146 p.) discusses the broader aspects of sand deposition regrouped into two chapters: sand bodies and environment, and sandstones, sedimentary basins and continental evolution. The 12 chapters are followed by an appendix on the petrographic analysis of sandstones (17 p.), and indexes by author and subject. The book also contains three glossaries of the used terms on sand and sandstone, volcaniclastic sediments, and hydrodynamics and bedforms.

The text has many references, more than half are post-1960, and are annotated. Most references are to the English literature, but there are also quite a few to the French, German and Russian literature, and a few to the Italian. The annotated references are well chosen, and will be useful to students and teachers not familiar with particular aspects of sandstone geology.

I have found quite a few interesting chapters in the book. The chapters on the volcaniclastics, on transport, deposition and deformation, and on sand bodies and environment are all well written, informative, well documented, and with pertinent diagrams. However, I have had some problems with the nomenclature and classification proposed by the authors (Chapters 5 and 6). The classification may be considered new: it tries to combine Gilbert's and Pettijohn's. The authors use "arenite" and "wacke" with a limit for the matrix content at 15 per cent. The amount of quartz in quartz arenite (or wacke) is 95 per cent. Chert is placed with the rock fragments. These choices are not discussed in the text. The descriptions of a few sandstones are ambiguous. It may be that I failed to get the logic behind the nomenclature proposed by the authors, but the observable differences between a lithic graywacke and a lithic wacke or between a feldspathic graywacke and a "dirty" arkosic arenite are not too clear to me. I know that there must be some differences since the authors tell us that graywackes do not seem to occur outside Alpine-type orogenic belts, and that lithic wackes (and arenites) are typical of alluvial sandstones, but these observable differences are not expressed to my satisfaction.

The text does contain a few contradictions which may be more apparent then factual in that they may result from the necessary simplifications of complex problems. However, I would have liked some of these discussed for the benefit of the students (the users). The definition of sand is an example: in Chapter 1, the reader is presented with two alternatives, sands may contain 50 per cent or 40 per cent sand-size material but in Chapter 5, the wackes may have as much as 75 per cent of material finer than 30 . Is it that some wackes are not sands? One more example: it may very well be as stated