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Field Guide to the Rocky Mountains

- Beus, S. S. (editor) 1988. *Centennial Field Guide: Rocky Mountain Section*. The Geological Society of America, Boulder, Colorado, U.S.A. 489 pp. Price \$43.50.

This book is Volume 2 of a six volume series of field guides published as a part of the Decade of North American Geology project. It contains short articles and maps of 100 geologic locations in Arizona, Colorado, Idaho, Montana, New Mexico, South Dakota, Utah and Wyoming and the province of Alberta. Index maps at the front show the locations of all the sites along with main highways and the boundaries of the major physiographic provinces. A useful table cross-references the sites in each state with the various geologic topics covered along with the physiographic provinces. These allow a traveler in the region to quickly select sites of interest and plan a route.

Obviously, as the editor notes, many other significant sites could not be included; another volume or two could easily be added. Each site description includes an index map of the locality, access information, significance of the site, description of features to be observed and a short reference list. Most sites are on or near roads, but some require long walks.

Tectonic structures are described at 40 sites. A wide variety of structures occurs in this region. Eight of the sites are in the foreland thrust belt from Alberta to Utah. Others include: metamorphic structures (four), recent faulting (four), monoclines (three), gravity slides (four), salt tectonics (two), Basin and Range–Colorado Plateau transition (two), calderas (two), polyphase deformation (two), Laramide fault blocks and forced folds, fractures and mineralization, rejuvenation of basement structures, granite tectonics, igneous intrusions and associated structures, keystone faults, detachment and breakway faults, structural history from interpretation of unconformities and a meteorite impact. Other than one site, the major omission in this otherwise broad coverage is the structures in the large basement uplifts and intervening basins of Wyoming.

The volume is carefully edited. Each site description is concise and accompanied by guide maps, cross-sections and photographs. In a number of articles alternate interpretations of the described features are discussed. For those who wish to learn more about a particular locality, the reference list provides entry into additional sources.

More than half the volume contains sites about many other topics such as stratigraphy, glaciology, geomorphology, mineral deposits, igneous and metamorphic geology and paleontology. The traveler will be sorely tempted to make many more stops besides the ones originally planned. To have all of this in one volume at a reasonable price is, indeed, a bonanza.

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Meanings and definitions

- Lapidus, D. F. 1987. *The Facts on File Dictionary of Geology and Geophysics*. Facts on File Publications, New York. 347 pp. Price \$24.95 (hardback). (D. R. Coates—Scientific Adviser.)

One of the cardinal sins a reviewer can commit is not reading all of the book under review. I confess to not having read all of this one, but then, it is a dictionary. My approach has been to concentrate on those words which are currently favoured by structural geologists and tectonicians. At the outset, it has to be reported that much of the nomenclature employed by numerous authors of recent papers in the *Journal of Structural Geology* does not feature in this book. For example; listric fault, stretching lineation, sheath fold, transpression and accretionary prism are a few of the words not defined. Given that this dictionary is only 347 pages long, and all branches of geology and geomorphology are treated, this criticism might seem unfair: the author had to be selective. However, in her Preface, Dorothy Lapidus refers to the impact that plate tectonics and other new concepts have had on thinking and the redefinition of terms. Thus, I anticipated a more up-to-date approach; not just a few explanations of elementary plate-tectonic notions set in a matrix of the old geology.

Some definitions are incorrect, others merely bizarre. A small selection of these entries illustrates the problem. An odd statement is: "... faults of the same age and *depositional* (my italics) development are said to be conjugate". Kink bands are defined as "... narrow bands in which the beds assume a dip that is gentler or steeper than the adjacent beds". Plate tectonics is explained in terms of crustal units without mention of the lithosphere. Crust and lithosphere are, however, distinguished in their own entries. The modern usage in tectonics of 'terrane' is not explained but in her discussion of this word the author writes: "A term that is variously dying and being revived . . .", many of us might agree with the sentiment. Finally, I was surprised to read the opinion that Neogene is a "Largely obsolete name for the Miocene and Pliocene Epochs . . .".

Some terms that have been defined are, in my opinion, not worthy of inclusion considering those omitted. My list of words that could have been left out includes: breached anticline (synonym: bald-headed anticline), geanticline, salt lick, shear fold, spelunker (a caver) and tectogene. Although a decision to include 'geosyncline' can be justified on historical grounds, the author does not explain why the word has lost favour. She does, however, uncritically list the numerous subclasses of geosyncline, including 'zeugogeosyncline', my favourite when a student.

Despite the above somewhat carping comments it must be reported that many terms are adequately defined without the use of pretentious language or too many qualifying clauses. The meaning of some nomenclature is illustrated by line drawings, mostly rather crude, but occasionally fresher than the more formal figures of most texts. In particular, I liked the fence being deformed in different ways by different types of seismic waves. Notwithstanding its attractive features, this book cannot be recommended; there are many alternative and more authoritative dictionaries and glossaries.

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