

tation. This handsome volume on South African plant exploration, with the beautiful colored frontispiece drawing of a baobab by Thomas Baines, will surely find a permanent and distinguished place on the bookshelves of both plant systematists and historians of science.

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Evolution of an Orogenic Belt

Major Structural Zones and Faults of the Northern Appalachians. Papers from a symposium, Quebec City, May 1979. P. ST.-JULIEN and J. BÉLAND, Eds. Geological Association of Canada, Waterloo, Ontario, 1982. vi, 280 pp., illus. C\$29; to association members, C\$24. Geological Association of Canada Special Paper 24.

One of the imposing problems of regional geology is the application of the plate tectonic paradigm to crustal evolution in ancient orogenic zones. Recognition of continent-ocean interfaces within polydeformed and metamorphosed orogenic belt rocks is a typical example. This is one of the major considerations of this book. A collection of diverse papers concerning the tectonic evolution of the northern Appalachians, the book is loosely divided into two parts, dealing with tectonostratigraphic zonation and with the boundaries and faults within the belt. The papers are diverse in topic, data base, and overall geological significance. Some, such as an excellent and detailed synthesis of New England by Hall and Robinson and a discussion of the Baie Verte-Brompton line by Williams and St.-Julien, represent a culmination of many years of fieldwork. These, I think, are the major papers in the book.

Several of the other papers deal with documentation and delineation of oceanic crust remnants in various parts of Canada, New England, and the northern U.S. maritimes. Of note here are papers on the Taconian line in western New England by Hatch, the soapstones of Connecticut Valley and New Hampshire by Lyons *et al.*, and ophiolite assemblages in central western Maine by Boudette. Papers by Ruitenberg and McCutcheon and by Fyffe deal with the structural overprint of three orogenic phases and the structural evolution of New Brunswick respectively. Diachronous impingement of irregular continental margins during continent-arc collisional events is discussed by Doolan *et al.* with

respect to the Quebec reentrant. Papers on fault zones, such as those by Rast and Dickson, Keppie, and Kennedy *et al.*, once again highlight a developing scenario in which major structural discontinuities are reactivated through time in orogenic belt evolution. A minor comment is perhaps necessary here regarding the use of the term "cataclasite" to refer to mylonite series rocks. Although persistent in North America, this is not current practice elsewhere.

A paper by Haworth and Miller defining the subsurface geometry of ophiolitic rocks at Notre Dame Bay, Newfoundland, by geophysical techniques illustrates the importance of applying all facets of geology and geophysics to define models of tectonic evolution. The key to the book is the interaction of mapped geologic relations, lithofacies variations, structural setting, and mesoscopic structure in the attempt to reconstruct the history of the Caledonides. Controversy will still exist about the significance of some of these documented zones and boundaries, and many questions remain to be answered, but this volume makes a timely contribution to our knowledge of this region of the crust.

In short, the volume will be useful to workers in the northern Appalachians and to people interested in Appalachian tectonics, although it should be pointed out that the editors also provide a brief review of the tectonostratigraphic zonation and the associated orogenies. This enables the uninitiated reader to plunge straight into the individual papers.

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Books Received

The ABC and XYZ of Bee Culture. An Encyclopedia Pertaining to Scientific and Practical Culture of Bees. A. I. Root. Revised by E. R. Root, H. H. Root, J. A. Root, and L. R. Goltz. A. I. Root Company, Medina, Ohio, ed. 38, 1982 (distributor, Scribner, New York). viii, 712 pp., illus., + index. \$24.95.

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