

author does not attempt to evaluate the work of others. Rather he provides a précis of their major conclusions. In so doing he has largely avoided bias in the overall presentation at the expense of a more concise synthesis.

The reader should be aware that species names mentioned in the book are those used in the cited articles; thus, the same species can appear with two or three different generic names. There are several glaring errors in the references and figure captions.

In summary Anderson's book provides an excellent reference and introduction to the literature on radiolaria. It bridges the disciplinary gap between the cell biologist, the ecologist, and the paleontologist and encourages further research that will lead to a better understanding of this long-ranging, diverse, and somewhat mysterious group of single-cell organisms.

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Centuries of Geology

It Began with a Stone. A History of Geology from the Stone Age to the Age of Plate Tectonics. HENRY FAUL and CAROL FAUL. Wiley-Interscience, New York, 1983. xviii, 270 pp., illus. \$38.95; paper, \$23.95.

The subtitle of this book written by Henry Faul and completed after his death by his wife indicates an immensely ambitious project: "A History of Geology from the Stone Age to the Age of Plate Tectonics." To accomplish this in a mere 230 pages of text calls for a choice between detailed treatment of a few key episodes and more or less uniform compression. Unfortunately Faul chose the latter course. I say unfortunately because the end product is a pedestrian recitation of events almost completely devoid of material to engage the intellect or stimulate the imagination.

For the early history, for which our knowledge remains sketchy, this approach proves more or less adequate, with the usual acknowledgement of the contributions of a succession of important figures, from Theophrastus and Pliny to Steno and Hooke. It is from the more thickly populated 18th century onwards that the method starts to come unstuck. In the first place, there are notable omissions or examples of excessive compression. How can a serious history of geology afford to ignore the work of, for instance, von Buch or Elie de Beaumont in Europe or T. C. Cham-

berlin in North America? Dana's research on coral reefs is noted, but his fundamental contributions to geotectonics are neglected. No consideration is given to the nappe theory of the Alps, which was of immense significance in its time. As for the 20th century, half a dozen pages is all there is to be found on subjects as momentous as radiometric dating, continental drift, and plate tectonics.

In the second place, and perhaps more serious, Faul almost totally ignores the recent reevaluations by historians of science, who attempt to place leading thinkers in their social and intellectual milieu, the better to understand the interplay of empirical discovery, new ideas, research techniques, and personal rivalries. Instead he is content to accept the conventional wisdom largely dating back to Lyell's tendentious and now somewhat discredited account of the history of geology. Thus no one would appreciate from this book that it was the Wernerians who represented the scientific mainstream, with Hutton a rather isolated and atypical figure, or that Lyell's insistence on an extreme version of uniformitarianism was strongly attacked on good grounds by contemporary scientists of considerable stature. Nowhere in the book, in fact, is there an adequate explication of the development of geological thinking on particular subjects—things apparently just happened in succession, and we are evidently not meant to concern ourselves with the whys and wherefores.

For the reader lacking any prior knowledge of the history of geology this account may provide a helpful primer, particularly if use is made of the extensive reference list, but the more ambitious and discerning had better look elsewhere.

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