Twenty-five pages of cited references are listed at the end, which are also conveniently made into an author index by including the pages on which the works are cited. This is an innovation that could well be emulated in other works. One notes with surprise the meagerness of citations to earlier authors; no references are given to earlier syntheses, such as the one of Keith referred to earlier, or of Jonas of 1932 (*Structure of the metamorphic belt of the Southern Appalachians*). On the other hand, references to recent works are voluminous, including many that appeared as recently as 1970.

Misprints are few, considering the many pages of closely written text, and their absence is a tribute to the alertness of the author and publisher. Nevertheless, the reviewer noted a few here and there, most of which are not very disconcerting—on page 84, a cross-reference to "page 000" is obviously something overlooked in page proof; the statement on page 82, "Almost the only point on which argument has been reached xxx" can be reinterpreted. Other misprints will puzzle the unfamiliar and especially the foreign reader, as on page 141, "Poor fossils in the slate indicate an Early Paleozoic age (probably Middle Ordovician fossils have been found xxxx)"—were the fossils *probably* found, or were those that have been found *probably* Middle Ordovician?

A comparison with the previously published book of the *Regional Geology Series* is of interest; each expresses the individuality and predilections of their authors. The geology of both the Himalayas and the Appalachians is described in geographic order in successive chapters, but with different emphasis, and the book on the Himalayas is profusely illustrated by photographs and figures. It is to be regretted that this individuality has been extended by the publisher to casting the books into a quite different formats, the Himalayas book measuring 8 by 12 inches and the Appalachian book 7½ by 11 inches. Purchasers of the "Regional Geology Series" cannot expect to put a uniform set of the volumes side by side on their bookshelves.

These criticisms aside, *The Tectonics of the Appalachians* is a masterpiece of description of the whole Appalachian Chain from end to end—a work which would not have been possible much before now, and which will not be equaled (if at all) in our lifetimes or later.

PHILIP B. KING

Glacial and Quaternary Geology; by RICHARD FOSTER FLINT. P. xii, 892, num. figs. New York, 1971 (John Wiley & Sons, Inc., $24.95).—Flint's *Glacial and Quaternary Geology* is a book that should be on the shelf, near at hand, for all who are interested in the Quaternary. The book is much expanded over his 1957 text and summarizes the explosion of data published in the past 10 years. For example, the new material includes individual chapters on Cenozoic climates, Quaternary vertebrate fossils, and stratigraphy of the deep-sea floors.

Glacial and Quaternary Geology is divided into two parts and, as Flint states, ". . . is a compromise between an encyclopedic treatment and a generalized summary". He begins with a discussion of glacial processes, landforms, and deposits and then considers the problems of geochronology, stratigraphy, and Quaternary environments. The application of many modern laboratory techniques is used to interpret the floral, faunal, and depositional records and to establish Quaternary history.

The text follows the format and style of the 1957 edition. This similarity can be seen in the section on till which contains many of the same illustrations and much of the same information as the earlier book but is expanded by about 40 percent to include a more detailed discussion of fabric, grain-size distribution, clast shape, structure, and strength. In general, the discussion of glacial processes and deposits provides an excellent introduction for the beginning student. However, the criteria for identifying deposits are not sufficiently detailed to permit identification and mapping in the field.

In an attempt to obtain a better understanding of past climates and Quaternary environments, a full chapter is devoted to "Frost-Action Effects", and there are discussions on cavern and stream regimens as well as sections on pollen stratigraphy and phytogeography. Implicit in the diversity of topics covered is the implication that interdisciplinary approaches are necessary to the solution of Quaternary problems.

Throughout, the text is readable and wide-ranging in scope. A minor drawback is the series of poor photographs scattered through the book. These are in part due to the publisher's reproduction techniques. Nonetheless, for the neophyte, pictures such as the "Fluted Dwyka Tillite" (p. 126) might as well be a plowed field in Iowa, or that of disintegration ridges (p. 221) might well be bacteria seen through a biological-microscope. The limitations caused by poor photography are forgotten though as one studies the series of excellent diagrams and tables which occur throughout the second half of the book. This is especially true in the stratigraphy section. In it are found current summaries of Quaternary stratigraphy from all continents; a special chapter is devoted to the Quaternary of Asia, Australia, and Pacific Islands, while another deals with South America, Africa, and the Antarctic. Not to be overlooked is the excellent and highly selective references cited list (p. 813-880), which includes citations containing extensive bibliographies for those interested in pursuing a wide variety of topics.

When one turns the last page of *Glacial and Quaternary Geology*, he is aware he has traveled the many diverse paths of Quaternary studies. He is aware too of the need for interdisciplinary approaches to the solution of Quaternary problems. And, finally, he recognizes that the book is a superb departure point for more extensive and exciting adventures into the Quaternary.

NORMAN P. LASCA