
Introduction to Physical Geology. *C. R. Longwell* and *R. F. Flint.* John Wiley and Sons, Inc., New York. 1955. x+432 pp. $4.95.

On the dust jacket this book is advertised as completely new, although in the tradition and spirit of the three earlier texts in which these authors participated. For them to make a complete break from the earlier series would be difficult if not impossible, as any user of textbooks knows. Nevertheless, the publisher's claim is in the main true. The present text is only two-thirds as long as the old 3rd edition, which will be a great boon to both the professor and student, especially in courses of quarter length. The order of presentation of subjects has been revised to a form much like that in most of the current leading geology textbooks: i.e., introductory material followed by methods and scope of the science, materials of the crust, geologic time, volcanic and igneous geology, weathering, gradational processes, sedimentation, structure, metamorphism, mountain-building, and mineral resources. This new arrangement probably makes it possible for most teachers to assign the chapters in numerical order and to take advantage of the authors' own transitions from chapter to chapter. All but one of the chapters from the earlier work have been shortened. Although many retain the same plan of discussion and exemplification the language has been thoroughly worked over to make it more direct, simple, and intelligible. The effusive exposition that was a trademark of the earlier works is absent from this text.

Much of the burdensome descriptive material of the old book has been put in diagram form. The authors have retreated from their former practice of pigeonholing all sorts of landforms into youthful, mature, and old: this classification is retained only for surfaces developed by streams. Whereas the older work was deficient in illustrations and had almost no diagrams, the new one is abundantly provided with both. Particularly helpful to the uninitiated is the practice of marking labels directly on the photographic illustrations. Unfortunately, a number of the photographs are poorly reproduced. All classification of minerals and rocks is placed in appendices.

In addition to the general improvement of exposition throughout the book, specific gains have been made in some chapters. Chapter 3 is a new discussion of minerals and rocks, and also includes an introduction to mapping and structure sections. Chapter 4, on geologic time, is new. Chapter 6, on weathering and soils, now includes some basic meteorology. Chapter 10, on ground water, now has a quantitative approach, and although it describes and illustrates permeability, no mention is made of porosity and the distinction between the two. The treatment of lakes and basins (Chapter 11) has been improved by condensation and by putting it on a "case-study" basis. The section on arid lands and their typical processes (Chapter 13) has been expanded and combined into one chapter with work of the wind. Physical oceanography and submarine geology have been improved and expanded and put in a separate chapter (14) from the material on waves, currents and shore processes (15). Unfortunately, the latter no longer presents a classification of coasts and entirely ignores coral reefs. Probably the outstanding single improvement in the new text is the chapter on metamorphism (18).

Unlike the forerunners of this text, emphasis is placed upon processes and examples, with a more quantitative approach in some parts. Detailed examples and classifications are left out and are thus at the discretion of the class lecturer. These qualities make the text more flexible and probably more widely useful than its predecessors.

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