
Geology. *O. D. von Engel* and *Kenneth E. Caster*. McGraw-Hill Book Company, Inc., New York, 1952. ix+730 pp. \$7.00.

Time was when the choice of an elementary text in geology was restricted to three or four old stand-bys. The post-war years have brought forth a number of new ones with a variety of treatment and approach. Of these, that of von Engel and Caster meets the need for a text covering both physical and historical geology. It is designed both for students taking geology as an elective and those intending to major in the subject.

To attain their goal of logical succession of topics, the authors have developed an unusual plan. Nothing is relegated to appendices, where topics usually considered unimportant or having no logical position in the text are sometimes placed. The plan is admirably suited to attain the "narrative continuity in chapter and topic succession" which the authors have set themselves. The book begins with the materials of the earth, a subject which can be grasped by the veriest beginner. Next, early geologic ideas are examined—appropriately, since most of them are so close to those of the layman—and the ideas of Hutton, Lyell, Agassiz, and others are exposed with the flavor of newness and hot debate which accompanied their first presentation. It is only a step to a consideration of igneous rocks, from their origin to their weathering. In turn, this topic introduces that of sedimentation, the first in the section "Structure, Process, Forms" ending with "Land Forms due to Glaciation." It is here that the authors break with tradition to achieve consistency in sequence of topics. Consideration of glaciation and land forms naturally calls for discussion of the Quaternary history of the earth, in spite of the fact that this is the most recent chapter in that history. Most books on historical geology follow chronological order and "begin with the beginning" in spite of the fact that many principles of historical geology are based on evidence discussed later in the text. The authors have sacrificed chronological order to logical presentation and take the student *backward* into time; the result is pedagogically sound, for the transition from glaciation to Quaternary history is natural. The evidence on length of geologic time, evolution of life, the interior of the earth, and its origin are presented logically, and the principles discussed in the final chapters become much clearer. Guided by a skillful teacher—and both authors have a reputation for dynamic teaching—the student rises from discovery to discovery, each more far-reaching than the last, and his interest is sustained throughout.

Other devices which will recommend the book to teacher and student alike are the lists of questions and references, both of them well selected. The paleogeographic maps are well drawn and accurate, the drawings clear and simple. The taste of the authors is evident in the choice of photographs. For example, they illustrate volcanic tuff not with a formless chunk of rock but with a Toltec idol carved of that material, porphyry with a finely chiseled Roman head, Jurassic limestone by a striking view of the Rock of Gibraltar, and the chalk cliffs of England with a charming photograph of a quiet cove on Lyme Bay. These are incomparably better than the pedestrian illustrations which usually adorn geologic texts.

To sum up, this is an extremely interesting and usable text for beginning geology and one which will meet a wide range of curricular requirements.

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