

"there is no such thing as an average individual." In view of this emphasis, it is puzzling to find that Krogman recommends "a check by the 'general formulae' of Dupertuis and Haddon" when estimating stature from long limb bones. In addition to the references he cited, in which the pitfalls of general formulae are discussed, another, by Keen, may be added [*J. Forensic Med.* 2, 190 (1955)].

The book is well turned out. The very occasional misprint, misspelling, and misstatement do not obscure the meaning. However, in Figs. 3, 4, and 7 the labels are illegible without the aid of a magnifying glass.

Krogman implies that a similar book on teeth is in preparation. Readers will hope for its early appearance, since no one is better qualified to write it than Krogman—ever a student of anatomy and a bibliographer, for years a professor of physical anthropology, and when help is needed, an expert in identification.

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Nontechnical Earth Science

Larousse Encyclopedia of the Earth.

Leon Bertin. Translated from *La Terre, Notre Planete* (Larousse, Paris) by R. Bradshaw and Mary M. Owen. Prometheus Press, New York, 1961. 419 pp. Illus. \$15.

This exceptionally attractive and informative book, prepared for English-speaking readers from the well-received French original, has been extensively revised and has a foreword by Sir Vivian Fuchs and an introduction by Carroll Lane Fenton. Text is blended in unusual fashion with illustrations, of which there are more than 500, largely halftones but including a number of diagrams and maps. Twenty fine, full-page color plates are distributed evenly through the book. The page size, 8½ by 11¾ inches, adds much to the effectiveness of many illustrations and permits the inclusion of considerable text with the related figures. Only exceptional pages are devoted solely to text. The figures are not numbered, but nearly all have explanatory captions.

The book, essentially a nontechnical

treatment of earth science, will have a strong appeal to many people who wish to understand what they see in the outdoor world. Subject matter is presented under two main headings, "The present" and "The past." About three-fourths of the book is devoted to the first division, which considers physical features and processes and the exploitation of natural resources by man. The remaining sections are concerned with geologic history and the records of life.

Readers who are mainly interested in descriptive treatment of geologic exhibits will find abundant source material, with a wide geographic range, in the photographs and related text. But the text also outlines fundamental problems of the science, with brief statements of the present status in continuing attempts to find the solutions—for example, of the basic causes of recurring widespread glaciation, of volcanic activity, and of the strong deformation found in mountain belts. An up-to-date account of Operation Mohole, the project designed to section the earth's crust by deep drilling in the Pacific floor, lends interest to the outline of ideas on structure of the earth's interior.

About a fourth of the volume is devoted to the topic "Earth in the service of man." Ores and mining; the occurrence and recovery of coal, oil, and natural gas; the development of hydroelectric power; and future sources of energy are practical subjects about which the average citizen has too little information. He will find the illustrations in this section well chosen to supplement the text outlining the historical development and modern operations in recovering mineral wealth and in harnessing various forms of energy.

In the section that treats geologic history, a systematic account of physical events is followed by an outline of the development of life through the ages. For the physical history, evidence relating to each major division of time is cited from North America, Britain, France, Australia, and New Zealand, with some data from other areas. The section on paleontology outlines the evolution of living things through geologic eras and closes with an account of human prehistory. Modern methods of time measurement are explained briefly.

To present the wealth of detail contained in this book without some minor weaknesses is hardly possible. Critical readers will find the diagram illustra-

ting the principle of isostasy, on page 178, sadly distorted in scale, and they will wish for some indication of dimensions in a sketch such as that showing igneous bodies, on page 155. But these are minutiae. The book as a whole is an excellent source of information for readers with normal curiosity about the earth and its history.

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Protective Coatings

Anodic Oxide Films. L. Young. Academic Press, New York, 1961. xiii + 377 pp. Illus. \$11.

In this book Young presents a thorough, concise, critical, and well-written summary of our current knowledge of the formation, structure, and properties of anodic films. To my knowledge, it is the first book to cover this subject, and it is certainly the only one published in recent years. While the main purpose is to discuss the science of anodic film formation, the author has included brief discussions of some of the practical aspects of the various types of films, which are used in batteries and electrolytic capacitors.

Most anodic films may be classified into two types. "Barrier films," the first type, are formed on "valve metals"; they are uniform, insoluble in the electrolytic solution in which they are grown, less than 1 micron thick, and they grow by high-field ion transport. About three-quarters of the book is devoted to such films; Young's own very extensive studies have been made principally in this area. The sections dealing with barrier films are uniformly excellent, and the book will be most useful to those interested in such films.

The second type of anodic film is not uniform; it is formed in an electrolytic solution in which it is partially soluble, and it may be as thick as 0.1 millimeter. The author does not present any generally valid picture of the formation, structure, and properties of such films, and the reader is left with a group of separate stories, one for each metal, and with the implication that these films are barrier films of poor quality. Actually the growth of nonbarrier films is influenced, in a