vertebrates receive their share of emphasis. However he has not succeeded entirely in escaping provincialism. The book has a local dialect—and sometimes its own dialectic. On occasion, generality is implied for situations characteristic only of the "middlewest." This is almost unavoidable and in itself not of great moment. It becomes more disturbing, however, in conjunction with the text's general flavor. Kendeigh is excessively concerned with categories and classifications. These often seem unnecessary and will, I fear, repel precisely those students who should be attracted, if ecology is to prosper. Moreover the author's use of data contributes to this impression. Figures are insufficiently analyzed in the text, and numbers are strewn through it with uncritical abandon. The resulting agglomeration of information will make it difficult for the beginner, without excellent guidance, to sift the general from the specific. Details gain a precedence that Kendeigh probably did not intend. Since the roots of ecological theory are not examined, generalizations often appear *ex cathedra*. In the hands of a pedagogical pedant, the text is much too convenient as a stick both for support and law enforcement. Conversely, it is regrettable that the generalist, who could derive considerable profit from it, is all too likely to underestimate this book.

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Lanthanides and Actinides

The Rare Earths. F. H. Spedding and A. H. Deane, Eds. Wiley, New York, 1961. xi + 461 pp. Illus. $14.75.

Rare Earth Research. Eugene V. Kleber, Ed. Macmillan, New York, 1961. vi + 313 pp. Illus. $9.75.

For a century and half, chemists labored at the separation of the compounds of the rare earth elements, most of which were really not rare, but merely hard to separate. Now, as stated in the preface to *The Rare Earths*, "largely as a by-product of U.S. Atomic Energy Commission activities, quantities of these materials of high purity are available for research workers and their production becomes commercially attractive. . . . All at once, more new metals become available than the number of those in common use." New knowledge is, consequently, being added to the extensive information already available and new uses of the materials are developing.

The two volumes under review are collections of papers which formed the programs of symposia. *The Rare Earths*, consisting of papers presented in November 1959, is published under the auspices of the American Society for Metals in cooperation with the Office of Technical Information, United States Atomic Energy Commission, while the other volume is based on a seminar (held in October 1960) sponsored by the University of California, the Air Force, the Navy, and the Nuclear Corporation of America. In spite of the seeming similarity of the two books and of the fact that five authors contributed to both, the two are very different in their approach to the subject.

Kleber, coordinator of the papers in *Rare Earth Research*, remarks in his preface that "some subjects dear to the hearts of rare earth researchers have not been covered," the symposium being "devoted to areas which are relatively new and in the forefront of today's activities rather than to those already well documented." The 33 papers are fairly evenly distributed under the five headings: Solution Chemistry; Oxide Systems and Their Properties; Structure of Metals, Alloys, and Intermetallics; Physical Properties of Metals, Alloys, and Intermetallics; Mechanical and Metallurgical Properties of Metals, Alloys, and Intermetallics. The content of the book is consistent with its title, rather resembling that of a single number of a journal devoted to current research in a special field and possessing no index.

The Rare Earths was produced by choosing "an experienced scientist in each area of research . . . to write a review paper covering his particular area of interest." The resulting 24 articles fall under the general headings of occurrence and extraction, preparation, properties of metals and alloys, and applications of metals and compounds. A 27-page index adds to the utility of the book. I made immediate use of the volume by revising a list of melting points in my copy of an advanced textbook published within the last 10 years. Many of the melting points were not given in the textbook, and, of those given, three were off by as much as 200° and one was 1000° high. This detail is mentioned to illustrate the more extensive and more accurate information presented as the result of the availability of pure materials in relatively large quantities. The book should be successful in its aim to provide workers with rare earths with "the highlights of the information that has been developed recently concerning these materials." It is also aimed more generally at chemists, physicists, metallurgists, and engineers in various fields of technology, and it is well equipped to find its target.

The specialist should find both books useful. The more general reader or student, seeking knowledge of the subject, should profit from the somewhat more comprehensive character of *The Rare Earths*.

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Reprints in Reverse Order

The Ancient Sun Kingdoms of the Americas. Aztec, Maya, and Inca. Victor Wolfgang Von Hagen. World Publishing Company, Cleveland, Ohio, 1961. 617 pp. Illus. $12.50.

This large, thick book is a combination of Von Hagen's three Mentor paperbacks (The New American Library's "Ancient Civilization" series): *Realm of the Incas* (1957), *The Aztec, Man and Tribe* (1958), and *The World of the Maya* (1960). It is a publication of high quality—large size (7 by 9½ inches), with hard covers, good paper, admirable typography and format, and many excellent illustrations. The text is only slightly changed; most of it is word for word as in the originals. The annotated bibliographies and the indexes are combined. The principal additions are an introduction, an 8-page chronology, correlating European, Mexican, and Peruvian events, and four excellent color plates of outstanding art objects from the Robert Woods Bliss collection. The golden ornament that illustrates the Inca section, however, was a poor choice, since this is from Venezuela, probably originally Tairona from Santa Marta, Colombia.

The book is a good account, for the interested but uninformed reader, of the three great civilizations of precolombian America. But I will not expect to find it beside the books of Vaillant,