of western, central, and eastern Kazakhstan. What historical validity is there for accepting the contemporary Soviet boundary of the Ukraine S.S.R. which, as the author shows, nevertheless cuts through the Donets coal basin? Clearly, one must add the criterion of "convenience" to the three mentioned above, and, indeed, Lydolph confesses as much on page 76. Moreover, the Donbass, a miniature Ruhr, is a clearly "recognizable" industrial nodal area, but it is not recognized by the author, although he does distinguish the Central Industrial Region. If we apply the criteria selected by the author, there is also a concrete basis for identifying, among others, a region focused on the middle Amur and the Ussuri valleys, which Lydolph ignores. It seems highly doubtful that the regions delineated by the author will be more meaningful to students in the United States than those revealed in Soviet publications.

Despite these objections, which are of more concern to the advanced student, the text is well written and it has an agreeable appearance.

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The Aurora Borealis

Keoeeit: The Story of the Aurora Borealis. William Petrie. Pergamon, London; Macmillan, New York, 1963. xii + 134 pp. Illus. $5.

This excellent book for laymen on the aurora and certain related upper atmospheric phenomena contains a careful and simplified account of much that is known about the aurora. It also presents a careful discussion of early theories and of the generally accepted present theory, which, although it can only be given in general terms, shows clearly where more data and reasoning must be applied to give more understanding. This section is the best up-to-date statement available.

In the first three chapters Petrie discusses the aurora in history, why it should be studied, and the instruments used for its study. The form, location, time and space variations, light, and possible sound of the aurora are treated in four chapters. The final two chapters deal with related upper atmosphere phenomena as well as with the cause of these and of the aurora. The volume is copiously illustrated. Many of the 47 plates are pictures of the aurora; 8 of them are in color. The color plates, which are reproductions of paintings by the author's wife, are excellent and "help to convey some appreciation of the beauty of this phenomenon."

One aim of this book is "to convey to the reader something of the fascination of the aurora, and [to] . . . make clear why those people [who] are fortunate enough to observe this beautiful phenomenon of the night time sky develop a life long interest in it." As one who has been an observer for 40 years, I can hardly say how much I would have appreciated and enjoyed this book years ago. This book is also a very brief history of one branch of science, and it shows the erratic progress, with false starts, errors, and sudden enlightenments with which the field developed.

Although there are no important misstatements of fact, the text is somewhat repetitious, but this is necessary in a teaching book. I dislike the use of Roman numerals for numbering plates, and I object to the use of a fine picture of the aurora on the book jacket without repeating the picture in the book.

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Paleontology

Fossils in America. Jay Ellis Ransom. Harper and Row, New York, 1964. xii + 402 pp. Illus. $8.95.

This book is intended to be a handbook for the amateur who is interested in finding and studying fossils. Ransom discusses the formation and characteristics of fossils and how to collect, prepare, and identify them. He presents a brief discussion of geological time and stratigraphy. A large proportion of the book is devoted to a list of fossil localities; the list, which is organized by state, provides information (for most localities) about the age of the rock as well as the names of the more common fossils. There is a glossary and a list of reference libraries and mineral museums.

In general, I consider this book unsatisfactory, and I do not believe that it will provide the amateur with the information he needs. In the section on the identification and classification of fossils, far too much emphasis is placed on groups that are not well represented in the fossil record and not enough emphasis is placed on those frequently encountered. For example, two pages are devoted to the identification of worms, animals rarely well enough preserved for identification, but only one-third of a page is devoted to bryozoans, two-thirds to brachiopods, one-third to snails, and one-half to trilobites. The data on fossil localities are not sufficiently detailed. I suspect that many of these localities could not be located with the information provided in this book. It would have been more useful to include fewer localities and to provide more data, in particular a map on which the location of each site was indicated. Furthermore, some of these localities are not open to the public.

The information provided on museums is outdated—for example, the author cites five institutions in the District of Columbia which are supposed to have mineral collections and specimens available for private collections. Three of these institutions no longer have museums of geology, and none of them will provide specimens to private collectors.

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Notes

Readings in Population and Community Ecology. William E. Hazen, Ed. Saunders, Philadelphia, 1964. x + 388 pp. Illus. Paper. $4.75. The 25 essays presented here are grouped under the following headings: Single Species Populations; Relationships between Species; Community Metabolism; and Community Structure. The papers "attempt to explore some of the avenues that research and speculation in population and community ecology have taken."

Ideas and Backgrounds. Keith G. Huntress, Fred W. Lorch, and W. Paul Jones. American Book Company, New York, ed. 2, 1964. 276 pp. Paper. A selection of some 40 essays, reprinted from various sources, on the following topics: Science and Survival; The Population Explosion; Education; Race Prejudice; and Our Country's Image.