rigorous large-scale research that has recently been performed on talented students.

As one reads through these articles it becomes apparent that very little is actually known about "educating the gifted." There is some evidence (although far from definitive) presented to suggest that the student's achievement is facilitated by special honors courses and similar "enrichment" programs, although there is no reason to believe such effects apply only to bright students.

It should be noted here that the editor has few illusions about the status of knowledge in this field, and that he has attempted to remedy this problem partially by including summaries of several major research projects and by devoting the entire last section to an analysis of research problems. However, results of the better-designed studies tend to have only tangential relevance to problems of *educating* the gifted, and interpretations of the findings are too frequently naïve and uncritical. For example, the finding that gifted individuals often complete school early is interpreted as evidence that the gifted person should be accelerated through school. Similarly, the tendency for gifted people to come from the higher socioeconomic levels is interpreted to mean that socioeconomic advantages are largely responsible for the development of giftedness. In this regard, no consideration is given in any of the papers to the very important role played by genetic factors.

Those educators who are not research-oriented may find some interesting and possibly useful ideas in these readings, but those who expect to find suggestions for educational practice based on sound empirical knowledge will be frustrated.

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Chemistry

Inorganic Reaction Mechanisms. An introduction. John O. Edwards. Benjamin, New York, 1964. xiv + 190 pp. Illus. $7.

In less than 200 pages, this book presents a competent and highly readable account of the mechanisms of a variety of inorganic reactions. The coverage is somewhat broader and more balanced, as well as more up to date, than that provided by Basolo and Pearson's 1958 book on the same subject, although it falls considerably short of the latter in respect of the depth and detail of treatment of the reactions of coordination compounds.

The first three chapters present a very brief introductory account of kinetics and acid-base theory and a rather lengthy discussion of the "linear free-energy relation" phenomenon. The importance of the latter subject, both in this and other contexts, has, in my opinion, been highly overrated, and some of the space devoted to it might more profitably have been given over to a consideration of other, more direct and reliable, approaches to the elucidation of reaction mechanisms (for example, pre-steady state kinetic measurements).

The remaining chapters are devoted to accounts of the mechanisms of various types of reactions—notably, nucleophilic displacements (including those in square planar complexes); peroxide reactions; substitution in octahedral complexes; reactions of oxyanions; and free-radical reactions. These are treated at a fairly elementary level, which is, however, adequate to convey a fairly meaningful picture not only of our present understanding of the mechanisms of these reactions, and of how it has come about, but also of the questions that remain and of some current lines of research. Coverage of the literature extends through the middle of 1963.

It is in matters relating to considerations of electronic structure and bonding that the treatment is perhaps least adequate. The discussion of nucleophilicity, for example, is unnecessarily vague and obscure in view of the understanding that has now been achieved of many of the trends cited, in terms of specific π-bonding and π-antibonding interactions.

Although the coverage is remarkably good in view of the size of the book, a number of important topics in the field of inorganic reaction mechanisms have been omitted entirely or are referred to only very briefly—for example, the reactions of metal carbonyls and organometallic compounds; recent studies on fast protolytic reactions; photochemical reactions of coordination compounds; redox reactions of hydrogen, carbon monoxide, oxygen, and so forth; and reactions of hydrogen atoms and other reactive species of interest in radiation chemistry.

Despite these shortcomings, which are largely dictated by considerations of size, this is a valuable book. The author's stated aim of designing it to "fit the needs of undergraduate seniors and beginning graduate students" has, in my opinion, been successfully accomplished. Because of its general interest, the book is also recommended as a highly readable introduction to a very active and rapidly developing branch of inorganic chemistry, for workers in related fields of organic chemistry and biochemistry.

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Synoptic Oceanography

Descriptive Physical Oceanography. An introduction. George L. Pickard. Pergamon, London; Macmillan, New York, 1964. viii + 199 pp. Illus. $4.50.

Descriptive physical oceanography, as defined by Pickard, is the study and interpretation of the distribution of the temperature, salinity, and dissolved oxygen content of the waters of the world ocean, without resort to hydrodynamic equations. Synoptic oceanography and interpretative oceanography are synonyms.

Intended for use in introductory undergraduate courses, this book closely follows Sverdrup's classical treatment of *The Oceans*. Modern methods, such as the electrical salinometer, Swallow floats, and carbon-14 age determinations are fully covered, and attention is paid to estuarine circulation and other aspects of coastal oceanography.

The book is written in a very simple style, and the author has not included references. Thus, it is not possible to determine, for example, the source of his material on *El Niño* (p. 165), which is not in agreement with the latest work on the waters off the Peruvian coast.

Within its restricted scope, this little book should be useful to the undergraduate, as an introduction to the subject, and to the older reader, as a nonmathematical description of the oceans.

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