adequately with such a complex subject.

Before going into details, I should outline the layout of the book. With the admission that some diseases are still more or less mysterious, the author uses a system of classification that is based essentially on underlying cause—congenital abnormalities, injury, infection, degenerative conditions, growths, deficiency diseases, metabolic and endocrine disorders, and conditions of unknown origin. These subjects are covered in 130 pages. This leaves about 50 pages of text for consideration of several fascinating but not strictly pathological conditions: skeletal adaptations, cannibalism, trephination, radiographic evidence, artificial interference, vital statistics, and historical characters (that is, the remains of known persons). The last 100 pages include extensive notes on the 88 fine photographs, a 6-page glossary, a 12-page bibliography (104 titles) arranged by chapters, and an 8-page index. No references are cited in the text, and references to illustrations appear on the margins of the pages.

The primary evidence of ancient disease is, of course, bones and mummies. In addition to these, Wells considers, with laudable caution, the secondary evidence of documents and artifacts. "It is important not to overrate the value of the early manuscripts," he says, "and lest it should seem that they are dismissed here in too cavalier a fashion it is worth emphasizing that under a guise of adroit lucidity they often turn out to be monsters of ambiguity, little better than inkblot tests which can mean all things to all men" (p. 30).

He feels much the same about artifacts. "It is inherent in the arts that some forms, primitive no less than modern, are more naturalistic than others. . . . The filiform style of the Jabbaren frescoes in mid-Sahara could only lead to a diagnosis of some wasting disease associated, perhaps, with an endocrine growth disorder, but it is clear that in reality these slender, emaciated figures are as much a convention as the chubby putti of the Italian Baroque" (pp. 30 and 31).

This sort of sensible interpretation contributes much to the value of the book. I can only applaud such statements as the following one: "The vast majority of skeletons, even when showing gross pathological changes—which most do not—seldom reveal what the person died from. In a very small proportion of all specimens, signs of advanced tuberculosis or some other infection, or the rare case of malignancy, may permit the cause of death to be inferred with fair probability" (p. 47).

These quotations illustrate, besides a proper point of view, a gift for clear, vivid writing. Another example, which introduces the subject of artificial interference, is worth adding for emphasis of this gift:

> In all ages man seems to have been discontented with his body. Graced neither with the iridescent splendour of the lepidoptera nor the flamboyant plumage of the Paradiseidae, he has sought instead to enhance nature by art and in the pursuit of a kaleidoscopic ideal has flirted with the limits of ingenuity and the bizarre. Artificial interference with the body embraces an astonishing range of procedures from the titivation of an eyelash to the monstrous deformation of a whole skull, from nail painting with delicate crimson or silver lacquers to gross mutilations of hands and feet, from hair tinting to tooth ablation. Few places and fewer peoples can be found where the unadorned body either of man or woman has been viewed with satisfaction (p. 161).

Offsetting all this praise are a few criticisms. However, I would stress that my adverse comments do not detract from the value of the book for the general reader; they are of importance mainly to paleopathologists. Wells, for all his good judgment and knowledge of his subject, "for the sake of clarity" continually frustrates his professional readers by failing to reveal the sources of much of the information that is given. Among a goodly number of statements that I would like to have amplified are two which fall within my experience. On page 125 Wells says that "In the west Texan cave-dwellers scurvy was a prominent factor in their oral hygiene." I am inclined to doubt this claim until I know who made the observation, because scurvy was very uncommon among American Indians. Again, on page 172, there is a remarkable statement—"In a mandible from Copan, Honduras, a missing left lateral incisor had been replaced in the socket by a false one carved from brown stone. The incrustation of tartar showed that the tooth had been in use for some considerable period during the life of the patient." A thing of this sort is so unlikely that it should not be cited without qualification or good documentation.

An extension of this criticism, of course, is the incompleteness of the bibliography. One clear case will serve as an example: Several references in the text to the Pecos Pueblo work of Hooton are not covered by a reference. To this defect must be added another —namely, failure to give the best reference in some cases. For instance, Rubín de la Borbolla (1940) is cited in support of types of tooth mutilation found in Mexico, whereas Romero has recently treated this subject much more exhaustively.

It is certainly to be hoped that this fine popular effort will encourage Wells to produce a fuller and more technical account of the vast amount of evidence which he evidently has assembled. Nothing of the sort has appeared in the English language since Moodie's *Paleopathology: An Introduction to the Study of Ancient Evidences of Disease* (1923).

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Educating Gifted Children

Educating the Gifted. A book of readings. Joseph L. French, Ed. Holt, Rinehart, and Winston, New York, ed. 2, 1964. xiv + 514 pp. $7.35

This collection of 43 readings is a revision of an earlier (1959) edition. Only nine of the original 59 articles have been retained in the revision, and two-thirds of the 34 new articles were published after 1960. The papers are arranged in eight sections, and each section is preceded by several pages of introductory editorial remarks.

The three journals accounting for the largest numbers of articles are *Exceptional Children* (5), *The School Review* (4), and the *Teachers College Record* (4). No articles were selected from the *Journal of Educational Psychology, Educational and Psychological Measurement,* or any similar periodical devoted primarily to systematic empirical research in educational psychology. This bias is partly a reflection of the status of the field itself: that is, problems related to "the gifted" have until recently been the concern mainly of teachers, guidance personnel, and professional educators, with but a few notable exceptions (for example, the work of Terman). Nevertheless, the collection would have been strengthened by inclusion of some of the more

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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