adequately indexed, and typographically very clean. Their aggregate price in the series is $43. There is no royal road to learning, but the roadside stands, like those along more common highways, extract a King's ransom from the eager traveler.

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Crystallography

Crystal Data. Determinative tables. J. D. J. Donnay and Gabrielle Donnay, Eds. American Crystallographic Association, 1963 (order from Polycrystal Book Service, Brooklyn, N.Y.). x + 1302 pp. $20.

The first edition of this book, published by the Geological Society of America in 1954, carried the subtitle "Classification of substances by space groups and their identification from cell dimensions." Part 1 of that volume, on the classification by space groups, which was prepared by Werner Nowacki, is omitted from the present volume, but we are promised a second edition of it. The tables for the determination of crystalline materials from cell dimensions have been greatly expanded. "The number of entries, which was about 6,000 in the first edition, is now estimated at about 13,000." However, there are many multiple entries. Parts of the colossal task of compilation were carried out in Leeds, London, Paris, and elsewhere, with subeditors for inorganic compounds, organic compounds, and proteins, but the final assembly was carried out in Baltimore.

The work consists of a short preface and introduction, followed by tables (pages 19 to 1019), indexes (by formula and by name), and two appendixes. The tables are similar in form to those in the first edition. There is a section for each crystal system, in which substances are listed in the order of numerical values of certain axial ratios. For each substance the following information is given: cell dimensions, space group, cell content, structure type, measured and calculated specific gravity, name or formula, and literature reference. For many substances there are editorial comments, generally referring to auxiliary information, pseudocells, conflicting data, or related matters, with references to other entries.

The introduction is much briefer than the one in the first edition. The true *reduced cell* rather than the *De-Launay cell* is now chosen to define the lattice. This change, which should affect only triclinic (now called "anorthic") materials, is referred to only in a footnote. The concordance of space group notations is copied without change from the first edition. Appendix 1, by M. V. King, is devoted to protein crystal data. Appendix 2, tables of space group criteria, is slightly modified from that in the first edition.

The general editor concludes the preface with this statement, "With due humility I repeat a former warning to the reader to beware of misprints and above all not to quote from this book second-hand numerical data." The number of misprints and other errors in the book is certainly very small. I noted one faulty reference in the name index. Other apparent errors probably can be attributed to conflicts in editorial policy and to the inclusion of material from the earlier edition without needed modifications. For example, incorrect data and the extended comments on schairerite (H-2.742) are repeated unchanged from the first edition, though correct data appear in standard reference works. The statement, in the introduction, that "the space group may not be known until the crystal structure is fully worked out" implies that, when the structure is fully worked out, the space group is known. Nevertheless, alternative space groups are listed for a number of materials for which the structure is "fully worked out."

Under the heading Structure, there are indications of the state of knowledge with respect to the crystal structure of the substance for which the lattice is recorded. This might be most helpful. Unfortunately there are many blanks; I sampled 15 pages throughout the book, and the result suggests that structural information is lacking for about 40 percent of the materials for which the lattice is known. However, such a conclusion would be unduly pessimistic. In many cases the blanks probably mean only that there was no structural information in the source cited, although a full structure determination may have been reported elsewhere. Strangely, blanks also appear in some instances when a full structure determination was reported in the source of the data cited.

This work, nominally a set of determinative tables for the identification of crystalline materials by axial ratios based on cell dimensions, is also by far the most comprehensive guide to the sources of crystal data. It is appropriate to repeat some remarks that I made in a review of the first edition, which apply equally to the present one. "This reviewer has spent pleasant hours just browsing through the tables enjoying the bits of intriguing information. But the volume can be put to much more solid uses and not only in the identification of crystalline substances. In its pages can be found suggestions for many problems in crystal chemistry and the solutions of others. This book is highly recommended to all mineralogists and crystallographers (chemists, metallurgists and many others) and it is hoped that it may lead some to realize the advantages of single crystal x-ray examination for purposes of identification" [*Am. Mineralogist* **40**, 784 (1955)].

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Science and Society

Heredity and Human Life. Hampton L. Carson. Columbia University Press, New York, 1963. xviii + 218 pp. Illus. $5.

The well-read and well-educated person who wants an introduction to human genetics will find it in this book. The first half of the book clearly and concisely describes the processes of genetics as they apply to man. The discussion includes the current findings in chromosomal genetics and a bit about the chemistry of heredity, but correctly stops short of the intricacies of these subjects. Gene and chromosome mutations are discussed as natural and as artificially caused phenomena. This section creates some false impressions, particularly in that it stresses the effects of strontium-90, which is not important gentically, but neglects almost all of the other elements which, though mostly transient, contribute high doses of radioactivity to the gonads.

The mood and tone of the book

shift about half way through, and it appears that one then discovers the reason why the book was written. It is obvious that Carson is deeply moved by our current crisis in civil rights, and this book is oriented in such a manner that the reader will most easily pick up arguments opposed to racism. The meager facts are interpreted as showing that modern man arose suddenly, about 40,000 years ago, and at that time rapidly spread out over the world. All racial and subracial differences date from the intervening period and are due to the chance assortment of genes in the small, inbreeding populations that moved out from the original home of *Homo sapiens*, which was located somewhere near the Mediterranean sea. Selective forces did not operate because the populations were too small for selection to have an effect. Carson's thesis is that the triggering mechanism for this sudden emergence of modern man was the development of the modern brain, and that only this has remained stable during the dispersion of the new species, while color, shape, and size have undergone drastic random alterations. The obvious conclusion is that man's uniqueness lies in his mental abilities and that in this, all men are brothers.

Thus, it seems that the purpose of this book is to give the layman a scientific basis for what is basically a moral decision. The racists, of course, also claim a scientific basis for their beliefs. Our social and political battles will not be won by quoting "science," but only through the conscious application of conscience to the righting of wrongs.

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Subantarctic Natural History

Subantarctic Campbell Island. Alfred M. Bailey and J. H. Sorensen. Denver Museum of Natural History, Denver, Colo., 1962. 305 pp. Illus. $7.

The publication of this profusely illustrated book provides a refreshing change from the popular accounts of Antarctic adventures and the highly specialized research reports that are often difficult to digest and collate with general natural history.

The introductory sections provide a vivid description of this 40-square-mile New Zealand outpost in the inclement Furious Fifties (52°33′ S, 169°09′ E). An excellent historical perspective is maintained: the 1810 discovery, the fur sealing, the attempts at commercial grazing, and the early scientific expeditions are all briefly described. The coauthor began more than four years of intensive biological observations when he was expedition naturalist at the Cape Expedition coast watching station during World War II. (A most casual glance through the book reveals the wisdom of New Zealand's decision to send a naturalist with the military and meteorological personnel when the station was established.) Postwar observations, made by civilian personnel at the station and by occasional visiting naturalists, and the role of the 1958 Denver Museum of Natural History Expedition (under Alfred Bailey's leadership) bring the data up to the current era of subantarctic research.

Although the sections on geology and botany are short, original observations are supplemented with a very complete literature summary. The observations on the degree of changes in the native flora, which have resulted from the introduction of exotic plants, sheep, cattle, Norway rats, and cats, are particularly noteworthy.

Brief details on occurrences of the right whale and more lengthy descriptions of the natural history of the New Zealand sea lion, the New Zealand fur seal, the leopard seal, and the southern elephant seal are in the section on mammals. Notes on census results, breeding colonies, and feeding habits indicate that, to a large extent, the seals have recovered from earlier depredations made by sealers.

The account of the Campbell Island birds occupies over two-thirds of the book. The descriptive material on albatrosses is particularly extensive. Many of the ornithological observations provide new data on general morphology, occurrences, feeding habits, and behavior of both adults and nestlings. Considerable portions of Sorensen's wartime diary and observations made by others are interspersed in the text to provide year-long sequential accounts of several species; these accounts are especially valuable from a phenological standpoint.

This book, with its very complete reference section (the section includes many references to the marine environment which is not covered in the text), will be a particularly useful introduction to a subantarctic island. There is an almost complete lack of data on the invertebrates, however. Natural history observations, which were made throughout several years, greatly extend existing information about several birds and mammals. Students of biogeography will find much of the data useful in determining the extent of distributions, the breeding centers, the pathways of dispersion, and the effects of exotics.

Numerous excellent photographs and the nontechnical text make this a pleasant and informative book for the armchair naturalist.

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Note

A Vagabond with Captain Cook

"Mad, romantic, dreaming Ledyard," son of a Groton sea captain, sailed with Cook and wrote *A Journal of Captain Cook's Last Voyage* (Quadrangle Books, Chicago, 1963. 208 pp. $6.50). From his encounter with the foggy Nootka coast, John Ledyard (1751–1789) returned, not with trinkets but with a firm determination to explore the possibilities of trade in the Pacific Northwest. Years later, when he lay dying in Cairo, Ledyard dreamed of crossing from Kentucky to the Pacific.

This reprint, the tenth "Americana Classic" now in publication, is a facsimile of a rare Hartford imprint of 1783; it is something of a disappointment. The original title page and verso are omitted. Was there a bastard title? Variations in intensity of inking are inevitable for facsimiles, but this Ledyard reprint is illegible at times. If the current practices are continued, these Americana in facsimile will not be sought in the 21st century as Hakluyt Society reprints are today. A short pungent introduction enhances the reprint's value. But, above all, give us a scrupulously literal facsimile.

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