Negro who overcomes the barriers is capable of good scientific work. Most of this volume consists of reprints of published papers by Negro biologists, chemists, mathematicians, and physicists. By examining the papers one could tell nothing about the color of their authors.

The volume was published to mark the dedication of the science quadrangle at Morgan State College. The event symbolizes a trend. Negro colleges have trained remarkably few scientists, partly because scientific facilities have been poor and scientific interests low. Now, however, facilities are improving and interest is growing. But even if opportunities at the college level were exactly the same for Negro and white students, the lasting effects of poorer environments and earlier education would lead to under-representation of Negroes among the ranks of scientists. In the one paper written expressly for this volume, Herman Branson, chairman of the department of physics at Howard University, gives an excellent brief account of the sociological factors responsible for the rarity of Negro scientists.

Some of the material in the book gives encouraging evidence that the number of Negro scientists is increasing. There is a very brief account of the trend toward greater scientific interest in Negro colleges. There is also a biographical directory of Negro scientists. They average a few years younger than a sample of the men and women listed in the most recent volume of *American Men of Science.* More striking is the high concentration in the younger age brackets. A fifth or more of the men and women in *American Men of Science* were born before 1900; only 8 percent of the Negro scientists are as old.

The trends are encouraging, but there is not yet equality of opportunity. Until there is, America will be wasting a good portion of its needed intellectual resources.—D.W.

Metals Reference Book. vols. I and II. Colin J. Smithells. Interscience, New York; Butterworths, London, 1955. xvi + 531 pp. and xv + 434 pp. Illus. $25.

This book attempts to provide a convenient summary of data related to subjects ranging from metal physics through inorganic chemistry and various branches of physical and applied metallurgy. The first edition, which appeared in 1948, has now been followed by a second edition that is thoroughly revised and enlarged. The two new volumes cover data collected by more than 60 contributors.

The first 45 pages of volume I contain tables of weights and measures, temperature, various conversion factors, and mathematical formulas as well as general physical and chemical constants. These are followed by two chapters on properties of atomic nuclei and line spectra of elements. A chapter on x-ray crystallography deals with various methods and data useful for determination of the crystal structure and is followed by a chapter on structure and structural details of metals and innumerable intermediate phases. The remaining part of volume I contains some information on geochemistry, a comprehensive chapter on metallographic identification of various phases in metals and alloys, and about 230 pages on binary and ternary equilibrium diagrams.

Volume II begins with a chapter on gas-metal systems, including solubility data, and is followed by a completely rewritten chapter on diffusion in metals. New chapters included in this volume contain data on elastic properties and damping capacity, physical properties of molten salts, and friction. About 50 pages are devoted to a completely rewritten chapter on thermochemical data and almost the same amount to chapters on various physical properties of metals and alloys. A short chapter on magnetic materials precedes a comprehensive collection of data on mechanical properties of industrial metals and alloys. The remaining 160 pages of volume II contain data and information pertaining to fields of applied metallurgy, such as deep drawing, lubrication, various foundry data, heat treatment, corrosion, and welding.

The two volumes contain an enormous amount of information, and I have noticed only one or two small errors or typographic mistakes in chapters in which the data is more familiar to me. Considering the unusual difficulties in producing a book of this kind, a very high standard in both preparatory and publishing stages is shown. I am sorry to see the examples of typical compounds removed from the table that deals with structural details of various metallic compounds, and if mathematical tables are to be included I would prefer a few pages devoted to logarithms of numbers rather than to solution of integrals and differential equations, for which I would look in mathematical reference books.

Many equilibrium diagrams are drawn to a larger scale than in the first edition and are now preceded by useful interconversion tables of atomic and weight percentages in binary systems. The details of many diagrams based on the book by M. Hansen published in 1936 are now out of date, and where diagrams are modified by later references their choice is somewhat arbitrary. Perhaps it would be helpful in subsequent editions to state when the survey of references was completed before publication.

The extended bibliography at the end of each chapter is a welcome improvement in this new edition, although in chapters that deal with crystal structure and equilibrium diagrams the bibliography is still far from complete.

On the whole the two volumes are comprehensive, extremely valuable, and almost indispensable to workers in the practical fields dealing with metals and alloys.

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Theory of Functions of a Real Variable. I. P. Natanson. Trans. by Leo F. Boron and Edwin Hewitt. Ungar, New York, 1955. 277 pp. Illus. $6.50.

The original Russian text (issued in 1941) contains 17 chapters. In the present book the first nine of these chapters were translated. (A German translation of the entire work was published in 1954.) This English edition is a useful and valuable, clearly written, and easily readable textbook. After an introduction to general sets and to linear point sets (Chapters I and II), the measure of linear sets, the measurable functions, and the Lebesgue integral are treated (Chapters III–VI). Then (in Chapter VII) Hilbert space, mean convergence, and orthogonal systems of functions are discussed. A chapter (VIII) on functions of finite variation and Stieltjes integrals and a chapter (IX) on absolutely continuous functions and the indefinite Lebesgue integral conclude the book.

It is rather strange that in the Russian text all unbounded sets are considered nonmeasurable. There, measurability is defined only for bounded sets without even indicating the simple generalization to the case of unbounded sets. For this reason appendixes to Chapters III, IV, VI, and VII were supplied by E. Hewitt. (Moreover, his appendix to Chapter IX considers functions of finite variation on the infinite line.)

Chapters X–XVII of the original Russian text, whose translation is not included in the present English edition, discuss singular integrals and trigonometric series, point sets in the plane (rather late!), measurable functions of several variables and their integration, set functions and their application in the theory of integration, transfinite ordinal numbers and Baire's classes of functions, as well as normed linear spaces. A final chapter states the role of Russian mathematicians in the development of the the-

ory of real functions. It would also certainly be worth while to translate into English a good many of the remaining chapters of the Russian text.

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