

is also a book well worth reading by any one who would know the facts in the matter. We send it for \$3. This book contains the full history of the effort to produce diamonds artificially, in which Moissan has been the chief experimenter and the most successful one. It may be that Mr. Edison has taken a hand in this line of work, since he has done so in almost every line, but his name has not been publicly associated with the artificial production of diamonds. Your sources of information in the matter may be better than ours. The invention of carborundum is credited to Mr. E. G. Acheson in 1893. Moissan, "Electric Furnace," page 264, says: "I had occasion to find, in 1891, small crystals of a silicide of carbon. I did not, however, publish anything on this subject at the time, and the discovery of the crystallized carbon silicide really belongs to Acheson." It is not "diamond in character," as you state, since the diamond is simply crystallized carbon, while carborundum is a compound of silicon and carbon. It is next to the diamond in hardness, or between 9 and 10 on the mineral scale of hardness. Being harder than emery it is a better abrasive, although emery is still preferred by some.

NEW BOOKS, ETC.

MAN IN THE LIGHT OF EVOLUTION. By John M. Tyler, Ph.D. New York: D. Appleton & Co., 1908. 12mo.; pp. 231. Price, \$1.25.

It is now about fifty years since Mr. Darwin published "The Origin of Species." A host of books have since been written on evolution, Darwinism, and natural selection, but comparatively few zoologists have attempted to show the bearing of the theory of evolution on man's history, progress, and life. They have usually left this problem to the sociologist and the archaeologist. The author has attempted to mark out a straight and narrow path through the subject. He has viewed animals and man more from the physiological than from the anatomical standpoint. Much is said of functions, powers, actions; less of organs and structure.

SUBJECT LIST OF WORKS OF REFERENCE, BIOGRAPHY, BIBLIOGRAPHY, THE AUXILIARY HISTORICAL SCIENCES IN THE LIBRARY OF THE (BRITISH) PATENT OFFICE. London: His Majesty's Stationery Office, 1908. 18mo.; 336 pages. Price, 6 pence.

An admirable addition to a most useful little series of bibliographical handbooks.

GAS ENGINE MANUAL. By W. A. Tookey. London: Percival Marshall & Co., 1908. 12mo.; pp. 186. Price, \$1.50.

There always seems to be room for a book on gas engines, although some fifteen or twenty years ago the literature on the subject was extremely meager. The introduction of the automobile has caused widespread interest in internal combustion motors. Some years ago the author produced several small handbooks which met with favor, and since that time he has been asked repeatedly to write a small, comprehensive work on the gas engine, which would form a stepping stone from these handbooks to more scientific treatises. He has devoted special attention to the nature of disturbances which usually affect the performance of gas engines when erected permanently in factories, which to a practical engineer is of more value than treatises dealing with the theoretical consideration of scientific research, or "test bed" experiments. A special feature of the book is a series of indicated diagrams, most of which are reproduced from actual cards taken by the author in everyday work.

HALLEY'S COMET. An Evening Discourse to the British Association at Their Meeting at Dublin on Friday, September 4, 1908. By H. H. Turner, D.Sc., F.R.S. Oxford: Clarendon Press, 1908. 8vo.; 32 pages.

In this paper Prof. Turner has presented a very excellent astronomical history of Halley's famous comet. He gives all the records of its former appearances.

ECONOMIC ZOOLOGY. An Introductory Textbook in Zoology. By Herbert Osborn, M.Sc. New York: The Macmillan Company, 1908. 12mo.; pp. 490. Price, \$2.

This book is not intended merely as a textbook for a school or college student, but it is hoped that it may be of service to that very interesting body of citizens who wish to familiarize themselves with the general principles and the present status of knowledge regarding the animal kingdom. Zoology when presented in such a lucid form as in the present work can be made very attractive. The book is admirably illustrated by 269 engravings.

THE PSYCHOLOGY OF ADVERTISING. By Walter Dill Scott, Ph.D. Boston: Small, Maynard & Co., 1908. 12mo.; pp. 269. Price, \$2.

A most valuable book written by an expert, who brings the psychological laboratory into one phase of modern business life. The typical business man is an optimist. For him the future is full of possibilities that never have been aroused in the past. He is not, however, a day-dreamer, but one who uses his imagination in formulating plans which lead to immediate action. The advertiser may well be regarded as typical of the class of American

business men. At the time when advertisements were poorly constructed and given limited circulation, certain enterprising men saw the possibilities of advertising, and began systematically to improve the whole profession of advertising. There is a vast difference between the advertisements of twenty-five years ago and to-day. It is not strange that advertising has as its one function the influencing of the human mind. Unless it does this, it is useless and destructive to the firms attempting it. As it is, the human mind in advertising is dealing with its only scientific basis in psychology, which is simply a systematic study of those same minds which the advertiser is seeking to influence. This fact was seen by wise advertisers, and some ten years ago various theories of advertising began to be reduced to concrete form. The author has produced a critical work dealing with memory, human instincts, suggestions, will, habit, laws of progressive thinking, attention to the value of spaces, psychology of food advertising, railway advertising, etc. It is an excellent book accompanied by a full bibliography.

COLOR VALUE. By C. R. Clifford. New York: Clifford & Lawton, 1908. 8vo.; 95 pages. Price, \$1.

An admirable volume filled with good suggestions which will be of the greatest service to all interior decorators. It is a scientific treatise in every sense of the word. Its study will prevent the hideous combinations which offend the refined taste in so many houses.

DIE SAEUGETIERE DES DEUTSCHEN WALDES. Von Dr. Kurt Floericke. Mit Bildern. Octavo. Stuttgart: Kosmos Gesellschaft der Naturfreunde, 1908. Pp. 105. Price, 50 cents.

Dr. Floericke's book on the animals of the German forest is one of the popular series of nature books which have long been published by the well-known German scientific periodical Kosmos. The book is a simple, straightforward account, which should be read with interest by those who have no desire to penetrate deeply into natural history, but who want an intelligible, accurate, and non-technical book on the subject. With the exception of an attempt at fine writing, which seems to be inevitable in all popular works, the book strikes us as an accurate and careful presentation of the subject.

EXPERIMENTAL ELASTICITY. A Manual for the Laboratory. By G. F. C. Searle, M.A., F.R.S., Cambridge (England). New York: G. P. Putnam's Sons, 1908. 12mo.; 187 pages. Price, \$1.50.

A highly specialized treatise which will be warmly welcomed by all physicists. The subject is an interesting one and is admirably treated.

CEMENT HOUSES AND HOW TO BUILD THEM. By W. A. Radford. Chicago and New York: Radford Architectural Company, 1908. Small quarto; Pp. 158. Price, \$1.

This is a practical treatise on the construction of cement houses, giving standard specifications for cement, standard specifications for concrete blocks, general information concerning waterproofing, coloring, paving, reinforcing, foundations, walls, steps, sewer pipes, chimneys, porches, floors, the use of concrete on the farm, with perspective views and floor plans of concrete block and cement plaster houses.

ELECTRIC FURNACES. The Production of Heat from Electrical Energy and the Construction of Electrical Furnaces. By Wilhelm Borchers. Translated by Henry G. Solomon, A.M.I.E.E. London and New York: Longmans, Green & Co., 1908. 8vo.; Pp. 224. Price, \$2.50.

The present volume is an English version of the second German edition of "Die Elektrischen Oefen" by Dr. Borchers, the well-known authority on electro-metallurgy. The recent rapid development, notably abroad, of the electric furnace is sufficient to prove how important a part it is playing, and is destined to play in a still greater degree in the near future in connection with all classes of metallurgical operations. By the aid of electric furnaces it should be possible to develop new industries and in districts hitherto unsuitable for electrical enterprise, especially where the raw materials are readily obtainable for the production of the substances desired and current can be cheaply generated and supplied, as by the utilization of waste furnace gases and overhead transmission. To those who are comparatively familiar with the subject of electro-metallurgy, this book will prove a revelation. It is filled with the most interesting illustrations, numbering 279 in all. It is a book which we can heartily commend.

NAUTICAL CHARTS. By G. R. Putnam, M.S. New York: John Wiley & Sons, 1908. 8vo.; Pp. 162. Price, \$2.

This is the first work on an important subject. In all the countries of the world, more than a million copies of charts are now issued annually. A considerable portion of the human race are interested directly or indirectly, either as mariners or passengers, or shippers on the sea. Aside from supplying a handbook for those who might have a general interest in the subject, it was thought that a discussion of charts might lead to a further consideration of the principles governing their construction. It

is an excellent work well illustrated and well printed.

MERCK'S 1907 INDEX. Third edition. New York: Merck & Co., 1907. 8vo.; 472 pages. Price, \$5.

An encyclopedia for the chemist, pharmacist, and physician, stating the names and synonyms, source or origin, chemical nature and formulas, physical form, appearance, and properties, melting and boiling points, solubilities, specific gravities and methods of testing, physiological effects, therapeutic uses, modes of administration and application, ordinary and maximum doses, incompatibles, antidotes, special cautions, hints on keeping and handling, etc., of the chemicals and drugs used in chemistry, medicine, and the arts. It is a chemical encyclopedia. But whereas Beilstein takes in all possible combinations, Merck's 1907 Index limits itself to the chemicals and drugs actually on the market, giving in regard to them information comparable to Beilstein's. This latest edition is improved by the addition of the newest products of the chemical industry, by the adoption of the latest nomenclature, by the adherence to the most modern authorities. We have used older editions with much satisfaction. It is indispensable for the editor's desk.

MODERN PRACTICE IN MINING. Vol. 1. Coal, Its Occurrence, Value, and Methods of Boring. By R. A. S. Redmayne. London and New York: Longmans, Green & Co., 1908. 8vo.; Pp. 199. Price, \$2.

The present volume is the predecessor of several others which are to be brought out in successive order, the series constituting a complete work on modern practice in mining. While the British colliery practice is somewhat different than that in vogue in America, still the present work contains enough valuable information to warrant its purchase by any who are in any way interested in coal mining. Special attention is given to prospecting and boring for coal. In fact, this constitutes the largest part of the book. It is well illustrated by numerous engravings.

EX-MERIDIAN, ALTITUDE, AZIMUTH, AND STAR-FINDING TABLES. By Lieut. Com. Armistead Rust. New York: John Wiley & Sons, 1908. 8vo.; Pp. 393. Price, \$5.

All navigators will be interested in this book. It is not a textbook, no space being taken up by rules for the conversion of time, the finding of hour angles, and for plotting lines of position by the usual methods familiar to navigators, which may be found in any work on navigation. The book is a most commendable specimen of industry.

HEATING AND VENTILATION. By Charles L. Hubbard, S.B., M.E. Chicago: American School of Correspondence, 1908. 8vo.; pp. 221. Price, \$1.50.

In recent years such marvelous advances have been made in the engineering and scientific fields, and so rapid has been the evolution of mechanical and constructive processes and methods, that a distinct need has been created for a series of practical working guides of convenient size and low cost, embodying the accumulative results of experience and the most approved modern practice along a great variety of lines. To fill this acknowledged need is the special purpose of a series of hand-books to which this volume belongs. The volume is particularly adapted to the purpose of self-instruction and home study. The utmost care has been used to bring the treatment of each subject within the range of the common understanding, so that the work will appeal not only to the trained expert, but also to the beginner and to the self-taught practical man who wishes to keep abreast of modern progress. The method adopted in the preparation of this volume is that which the American School of Correspondence has developed and employed so successfully for many years. The book is excellently illustrated.

MECHANICAL PRODUCTION OF COLD. By J. A. Ewing, C.B., LL.D., F.R.S. Cambridge, England: University Press, 1908. G. P. Putnam's Sons, Importers, 1908. 8vo.; pp. 204. Price, \$3.25.

This book is a reprint of lectures on the mechanical production of cold delivered before the Society of Arts in 1897, with additions and corrections which show the advance of the past eleven years, and bring the accounts of machines and processes into accord with the practice of the day. In its main feature the art of refrigeration has undergone little change in that time, but notable progress has been made in some directions, and this has required the introduction of a good deal of supplementary matter. The refrigerating machine is essentially a contrivance for pumping up heat from a place that is comparatively cold to a place that is comparatively warm, and the question of primary interest is how to do this pumping with the least expenditure of power. We are concerned with the theoretical limits to the economy of power that hold in ideal refrigerating processes, and with considerations as to how nearly the actual conditions under which refrigeration is carried out will allow these limits to be approached when one or another type of real machine is employed. The lectures are in great part an attempt to make this side of the subject intelligible without unnecessary mathematics. The book is excellently illustrated.

SEWER CONSTRUCTION. By Henry N. Ogden, C.E. New York: John Wiley & Sons, 1908. 8vo.; pp. 335; 192 figures. Cloth, \$3.

The course represents the second part of a year's work, of which the book on "Sewer Design," already published, is the first part, and it is assumed that the reader is familiar with that volume. The work appears to be an excellent one, and is deserving of a good sale among those interested in the subject.

MASSING OF SPHERES. A Geometrical Demonstration of the Constitution of Matter. By G. J. Stevens. London: J. Haslam Company, Ltd., 1908. 4to.; pp. 21. Price, \$1.

THE LETTERS OF JENNIE ALLEN TO HER FRIEND, MISS MUSGROVE. By Grace Donworth. Boston: Small & Maynard Company, 1908. 12mo.; pp. 291. Price, \$1.50.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending November 3, 1908,

AND EACH BEARING THAT DATE [See note at end of list about copies of these patents.]

Table listing various inventions and their patent numbers, including Accounting system, Advertising device, Air brake, Automobiles, and many others.