

the subject is unsatisfactory, and when information on some point of known technical importance is sought, the statements are too often found to be vague or inaccurate. More information as to manufacturing processes would have been welcomed, for such is now to be found scattered through the technical journals, although not as yet systematically collected and reviewed. Die-casting, for example, is used to a far greater extent than would be supposed from the references to it here, and the original difficulties in casting aluminium alloys under pressure have been largely overcome. The 'imaginary' equilibrium diagrams are scarcely a substitute for accurate knowledge, and in fact much more is known of the more important systems than is here indicated. There is much that is of value in the book, and the experienced metallurgist will make critical use of the tables of physical and mechanical data. The photo-micrographs at the end of the volume are of excellent quality, and illustrate the immense improvement in the technique of preparing these rather difficult alloys for the microscope which has occurred in the last year or two.

*Primitive Man: his Essential Quest.* By Dr. John Murphy. Pp. xiv + 312. (London: Oxford University Press, 1927.) 15s. net.

THE primitive man in Dr. Murphy's definition is that which characterises him near to his origin as man, that is, when he began to be human, and includes the mind of the savage of the present day who is at a low stage of culture, probably at the intellectual level occupied by early man. His viewpoint in analysing the development of human society from its beginnings in primitive customs and belief to higher manifestations is evolutionary and psychological. In his view, man has progressed by integration through differentiation from the lower to the higher on a line which in a sense is parallel to the evolution of the brain. This, as has been shown by the study of the brain in the anthropoids and fossil man, has been a process of development in the frontal area and a resulting improvement in the powers of co-ordination which have been largely responsible for man's intellectual advancement. Dr. Murphy therefore has a sound physical basis upon which to rest his interpretation of the facts; but it needs no great discernment to see that from the outset he is at odds both with the diffusionist school of Prof. Elliot Smith and with the recently enunciated theories of Prof. Levy Bruhl.

*A Treatise on Light.* By Dr. R. A. Houstoun. Fifth Edition. Pp. xi + 489. (London: Longmans, Green and Co., Ltd., 1927.) 12s. 6d. net.

THE fact that this book has had a new impression or new edition every two years since 1919 is sufficient evidence of its use to teachers and students and of their appreciation of it. The author is to be congratulated in that he has not burdened the student by the introduction of accounts of recent advances in kindred branches of the subject. His

final chapter might well have been omitted, the one valuable addition on the angular diameter of stars being inserted in the chapter on interference. The rest is out of place in the book and in any case could not fail to be inadequate.

An account of modern apparatus for the determination of indices of refraction would have improved the chapter on that subject, and in the chapter on diffraction the accounts of the Lummer-Gehrcke and Fabry-Perot interferometers should have been given in more detail both in theory and practice. The theory would follow very readily from the excellent treatment of diffraction given in this chapter. These are, however, slight criticisms of an excellent treatment of the subject. The reader cannot fail to appreciate the careful mathematical presentation, which is well exemplified in the chapters on lenses, diffraction, and on the nature of light.

*The Autobiography of Kingsley Fairbridge.* With a Preface by the Rt. Hon. L. S. Amery and an Epilogue by Sir Arthur Lawley. Pp. x + 188. (London: Oxford University Press, 1927.) 6s. net.

KINGSLEY FAIRBRIDGE had an active and adventurous life before he went to Oxford as a Rhodes scholar. Most of the book consists of those early experiences, and gives an admirable picture of Rhodesia in the making. But the importance of the book lies in his scheme of Imperial settlement. Fairbridge was convinced that the solution of the unemployment and emigration problems of Great Britain were to be found in taking children from the large towns and training them in schools in the Dominions to become farmers. His enthusiasm led to the foundation at Oxford of the Child Emigration Society. In 1912 he started his farm school in Western Australia. There were many difficulties to be contended with, of which the financial was not the least, but before Fairbridge died in 1924 the scheme was on a sound footing. The book is a worthy record of a man of far-seeing vision.

*The Student's Handbook of British Hepatics.* By Symers M. Macvicar. Second edition, revised and enlarged. Pp. lxxi + 464 + viii. (Eastbourne: V. V. Smeeth; London: Wheldon and Wesley, Ltd., 1926.) 24s. net.

THE value of an accurate systematic treatise in stimulating interest in a group is evidenced in the call within a comparatively short time for new editions. Lister's "Mycetozoa," Dixon's "Mosses," and Lorrain Smith's "Lichens" are familiar examples, and to these have now been added Macvicar's "Hepaticæ." The accurate descriptions, useful keys, and excellent illustrations for every species at once made the work invaluable to students, and after fourteen years the stock has been exhausted. The new edition includes only minor changes; a few additional species, changes in rank of certain forms, and a full glossary being the most important.