

may therefore be grateful to Mr. J. B. S. Haldane for dealing with the subject in his Conway Memorial Lecture. He holds that science impinges upon ethics in at least five different ways: (1) It creates new ethical situations; (2) it may create new duties by pointing out previously unexpected consequences of our actions; (3) it affects our whole ethical outlook by influencing our views as to the nature of the world; (4) scientific anthropology is bound to have a profound effect on ethics by showing that any given ethical code is only one of a number; (5) it will evidently favour ethical principles and practices which transcend the limits of nation, colour, and class.

Mr. Haldane holds that the greatest danger to which our ethical system is exposed from science is the deliberate exploitation of scientific ideas in the interests of unscientific prejudice. In this connexion he regards with particular misgiving the application of ill-understood principles of genetics by eugenic amateurs. We do not yet know enough about the inheritance of mental ability to say that a few generations of selection against it would have appreciable results; and "the dictates of biology are on the whole in line with those of humanitarian ethics." Eugenics certainly has "a very great future as an ethical principle," as has hygiene, but the successful application of a principle demands exact and complete knowledge, and this we cannot be said, as yet, to possess.

J. C. H.

*Introduction to Theoretical Physics.* By Prof. Arthur Haas. Vol. 1. Translated from the third and fourth editions by Dr. T. Verschoyle. Second edition. Pp. xiv+333. (London: Constable and Co., Ltd., 1928.) 21s. net.

THE first English edition of the treatise by Prof. Haas received commendation in our issue of Aug. 22, 1925, and the fact that a second edition has already been called for is sufficient testimony to the value of his work. A comparison between the two editions shows that the revision has been carefully carried out. The most important alteration is the addition of part of a section on the Hamiltonian function and the canonical equations of motion. It is a striking tribute to the almost superhuman genius of Hamilton that his work is continually finding fresh applications; his powers of generalisation were such that even to-day his methods are being used in developing the new quantum mechanics and the wave theory of matter. Some twenty years ago Lord Rayleigh commented on the long-continued neglect of Hamilton's work on optics, and remarked that he "allowed his love of generality and of analytical developments to run away with him." Certain it is that much loss has ensued from ignorance and neglect of work already done.

The English student will welcome the new edition of the "Introduction to Theoretical Physics," because it gives him in convenient form such a lucid account of those branches of mathematical physics which are of outstanding importance at the present time.

H. S. A.

*Plant Ecology.* By Prof. W. B. McDougall. Pp. 326. (London: Henry Kimpton, 1927.) 14s. net.

THIS text-book is designed to serve as an introduction to the ecology of plants. It treats the subject of plant life comprehensively rather than intensively, and the term 'ecology,' defined as "the science of the interrelations of living things and their environments," is given a wide connotation. Chapters ii.-ix. deal mainly with the structure and autecological relationships of plants. They form a good introduction to general botany from the ecological viewpoint. The physical factors of the environment are dealt with in the succeeding five chapters, and the last third of the book summarises various aspects of synecology. A useful, but too brief, appendix contains suggestions for the teacher concerning laboratory and field work. An index is provided and the text is illustrated by 114 figures. References to selected literature (in English only) are given at the ends of most of the chapters. The book can be heartily recommended to teachers in Great Britain, though it has one drawback: that many of the examples quoted, both of individual species and of plant communities, are endemic to North America, and are therefore probably unfamiliar to the English student.

W. B. T.

*Röntgenstrahlen (Physik, Technik, und Anwendungen).* Von Dr. Richard Herz. (Sammlung Göschen, Nr. 950.) Pp. 136+16 Tafeln. (Berlin und Leipzig: Walter de Gruyter und Co., 1927.) 1.50 gold marks.

THIS volume fully maintains the standard set by earlier members of the series, and provides the usual mine of condensed but accurate and eminently readable information. Almost one-half of the book is devoted to the physics of the subject, and the remainder to the technique of the production of X-rays, and to their medical and technical applications. The ground covered is approximately that of the Cambridge Diploma in Medical Radiology, but the sixteen pages of excellent plates, mostly of tubes and installations, will make it of particular value to readers who have not the opportunity to see or use elaborate apparatus of this type. One wishes that there existed an equally good and inexpensive treatment of the subject in English.

*The Great Physicists.* By Dr. Ivor B. Hart. Pp. vi+138. (London: Methuen and Co., Ltd., 1927.) 3s. 6d. net.

THIS book, from an experienced writer, is the first of a series, now in preparation, entitled "The Great Scientists," which is to survey in requisite departments the main achievements of scientific progress from early to modern times. The historic sense in Dr. Hart's narrative is well preserved. We notice (p. 64) that 1660 instead of (correctly) 1662 is given as the date of incorporation of the Royal Society. Also (p. 112) the name Tyndal should read Tyndall. The book is handy in size and well printed.