

that a race at one time in the van of civilisation has become the prey of anarchy and misrule.

The author, who was attached to the China International Relief Commission, discusses in temperate but telling language the economic, natural, political, and social causes of the permanent food shortage within the country, and suggests corresponding remedies. Relief measures, he admits, are merely temporary palliatives. It is for the millions themselves to take the initiative and seek the guidance of modern science in the solution of the pressing problems of their country. This implies, however, the education of the masses under a stable and enlightened government, a condition which at the moment seems impossible of attainment. The book ends, therefore, on a minor key, with the warning that the unhappy fate of China should be carefully studied by the great nations of the west, whose remarkable progress is also in danger of becoming assailed by the dragon of over-population.

In Ashanti and Beyond. By A. W. Cardinall. Pp. 288 + 16 plates. (London: Seeley, Service and Co., Ltd., 1927.) 21s. net.

MR. CARDINALL has written a pleasant, readable book, full of good spirits and tempered with good sense. The author has had many years' experience in tropical Africa as a resident magistrate, and he writes mainly of his first journey and impressions. This method gives a clear picture of conditions which are changing rapidly, but the observations are necessarily superficial though accurate so far as they go. The book can scarcely be regarded as a contribution to anthropology, although many items of interest concerning native life, customs, and belief are mentioned, and this is to be regretted, as the author seems always to have been on excellent terms with the natives. Quite unexpected is the account of the snail industry; for the gathering, curing, and selling of snails for food by the forest peoples is so well organised as to be nothing less. The author states that no estimate has ever been made of their trade value, but that it must be 'colossal'; a few years ago the local chiefs forbade snail-catching for three years, for fear of complete destruction of the stock. Perhaps the most interesting part of the book is the description of the Great North Road from Kumasi which leads to "Timbuctu, the desert, and to the unknown mysteries of Africa." On the whole, one learns that, in spite of flies, "the land of death" is a cheery place for a sojourn so long as there is just enough work to do.

Running, Maintenance and Repair of Diesel Engines. By Philip H. Smith. Pp. 159. (London: Constable and Co., Ltd., 1927.) 3s. 6d. net.

A VERY practical treatise intended for those entrusted with the operation of Diesel engine plants, particularly land installations. The first two chapters are really *hors-d'oeuvre*, dealing briefly with the selection of the type most suitable to requirements, and with the reliability of Diesel

engines relatively to other prime movers. The index of reliability is determined from insurance claims, but the value of the conclusions arrived at cannot be assessed as the statistics are not given. It is not clear whether extent or number of claims is taken as the criterion.

The real business of the book commences in the succeeding chapters, which take a comprehensive survey of the defects liable to develop during the operation of the plant. Each part of the engine is separately dealt with and its usual and possible ways of failing on service are discussed. In each case the symptoms and the probable effect of the defect as well as the measures to be taken for avoiding and for rectifying it are fully described, and in those cases where the initial cause is not obvious, a thoughtful investigation is made into the probable origin of the trouble. Brief but useful notes are also given on the maintenance of proper running conditions, on indicator diagrams, and on valve setting. For its size the book contains a lot of useful information. Evidently the author has had a wide experience of Diesel engine operation, and the reader is given full opportunity to benefit from this valuable experience. L. M. D.

Abridged Callendar Steam Tables: Fahrenheit Units. By Prof. H. L. Callendar. Second edition. Pp. 8. (London: Edward Arnold and Co., 1927.) 1s. net.

THE tables are in a very useful form for the practical engineer. The properties of saturated steam are given for absolute pressures from 0.5 lb. to 500 lb. per square inch, at well-chosen intervals which do not amount to corresponding temperature differences of more than 2° to 3° F.

For dry steam (superheated and supersaturated) the total heat and entropy are given, in separate tables, at absolute pressures from 15 lb. to 500 lb. per square inch, the intervals corresponding to saturation temperature differences of 14° to 22° F., and superheats from -60° to +400° F., at intervals of 20° F. up to 200° F. and thereafter of 40° F.

A useful list of equations is given in a form convenient for reference. The tables are also published in centigrade units. L. M. D.

Vorlesungen über Thermodynamik. Von Prof. Dr. Max Planck. Achte Auflage. Pp. x + 287. (Berlin und Leipzig: Walter de Gruyter und Co., 1927.)

ALTHOUGH Prof. Planck's "Thermodynamics" first appeared thirty years ago, it remains still one of the clearest books on the subject at the present day. The eighth edition has 17 sections and about 40 pages more than the first, but the sections up to 280 are numbered as before. The additional sections deal with Nernst's theorem and its consequences. T is now used for the absolute temperature instead of ζ , certain proofs formerly based on the properties of a perfect gas have been made general, and the treatment of electrolytes has been improved. The new edition is well printed, but the paper of it compares unfavourably with that of the first edition.