

The book is exceptionally complete, and the information is accurate and up-to-date. Thus, the vitamins are adequately considered, the possible influence of deficiency of iodine in the production of goitre is mentioned, the life-histories of the various parasites are correctly given, and the causation of rickets is particularly well discussed. In addition to the diseases of Great Britain, several tropical diseases are also described, *e.g.* sleeping sickness, leishmaniasis, undulant fever, and others, and in all cases the information given appears to be accurate.

Here and there, perhaps, a section might have been extended or differently worded with advantage, but on the whole there is singularly little to criticise. We miss any reference to the Owens' instrument for the determination of atmospheric pollution, and manganese poisoning does not seem to be mentioned. Chlorination of water is somewhat briefly dealt with, and in the excess lime method of purifying water the unlimed water finally added is described as 'untreated,' whereas this should have been first purified by long storage. Under filter candles (p. 137) the reference to "Bullock and Crow" should be "Bulloch and Crow." Under "Vital Statistics" we question the value of introducing the complicated subject of life tables (though we are aware that it usually appears in public health text-books) and consider the space might be better utilised. The index might be somewhat extended with advantage.

We consider that this book gives an adequate presentation of present-day public health work within the limits imposed, and can recommend it to the student with confidence.

*General Physics for Students: a Text-Book on the Fundamental Properties of Matter.* By Edwin Edser. Reprinted, with additions. Pp. ix+676. (London: Macmillan and Co., Ltd., 1926.) 8s. 6d.

THE merits of this well-known text-book are sufficiently attested by the demand for a fourth issue. It should not, however, be allowed to pass without renewed recognition that there exists no other text-book dealing so thoroughly with mechanics, elasticity, surface tension, hydrodynamics, and kinetic theory, without mathematical aid more advanced than elementary algebra and trigonometry.

The new portion is of a different character from the rest of the book, being an appendix on surface tension, embodying the author's recent researches. The most important part is a calculation of the surface tension and internal pressure for assemblages of molecules attracting according to some inverse power of the distance. The difficulties of applying the calculus of continuous functions to molecules comparable in size with the range of attractive forces, are overcome by estimating the probable number of centres of molecules within an infinitesimal region of space, and integrating. The assumptions seem legitimate, at any rate as a first approximation for more or less symmetrical molecules; the conclusion is reached that the attractive force varies as the inverse eighth power of the distance, and that nearly all the surface energy is resident in a single layer of molecules.

There is a good deal of miscellaneous information on capillarity, and though the author's avoidance of

the modern view which ascribes the phenomena to the surface properties of the molecules—that is, their chemical properties—and takes account of their motions and orientations according to kinetic theory, probably leads to incorrect explanations in some cases, it is an excellent thing to have Mr. Edser's long-considered views set forth in a convenient form. It may not be long before the obscure points are cleared up, with much advantage to both points of view.

N. K. A.

*Lehrbuch der physiologischen und pathologischen Chemie in 75 Vorlesungen: für Studierende, Ärzte, Biologen und Chemiker.* Von Prof. Dr. Otto Fürth. Zugleich zweite völlig neubearbeitete und erweiterte Auflage der "Probleme der physiologischen und pathologischen Chemie." Band 1: *Organchemie.* Lieferung 1: *Bausteine der Organismus—Blut.* Vorlesung 1 bis 16. Pp. xiii+208. (Leipzig: F. C. W. Vogel, 1925.) 15 gold marks.

It is fifteen years since the first edition of this work was published and the text has required drastic revision. The complete work will consist of two volumes, each divided into three parts of about 200 pages. The present part contains accounts of the chemistry of the proteins, fats, and carbohydrates, and also of the blood and lymph. The treatment of the more purely chemical side of materials of physiological significance appears full, yet concise and up-to-date. The chapter on blood serum is considerably condensed, especially on the subject of the hydrogen ion concentration, but fuller treatment can, of course, be obtained from special monographs. The account of the gases of the blood is reserved for a later part. There are copious references to the literature, structural formulæ are given in detail, and the paper and printing are of the best. Altogether the volume is a most useful work on this branch of chemistry.

*Fishery Board for Scotland. Scientific Investigations, 1926, No. 1: Rays and Skates; a Revision of the European Species.* By Dr. Robert S. Clark. Text. Pp. 66+15 plates. 9s. net. Plates. Pp. iii+36 plates. 5s. net. (Edinburgh and London: H.M. Stationery Office, 1926.)

THE increasing importance of rays and skates as marketable food-fishes emphasises the need for a greater knowledge of their life-histories than is at present available. Dr. Clark's revision of the European species is therefore a most welcome monograph. In this work, which represents several years of patient labour in a trying task, twenty-three species are separately described and finely illustrated by beautiful photographs, and in each case a full discussion on the troublesome matter of nomenclature is given. It would have been rather more convenient for the reader if the successive sections of the text had been more clearly indicated by the use of appropriate type; in its present form the text is a little confusing. This monograph, used in conjunction with Dr. Clark's earlier account of the egg-capsules and young (*Jour. Mar. Biol. Assoc.*, vol. 12, No. 4, 1922), should prove of the greatest assistance to workers for the identification of their material.