

of chemists now profess this belief without realising that the use of the historical method presupposes that the teacher has a grasp of history. Ostwald's dictum—"a most remarkable and praiseworthy thing in scientific literature is that almost every word is written conscientiously"—can hardly be applied to the usual treatment of the history of science. The historical conscience is somewhat blunt in the scientific man. In the present book, for instance, the statements are made that Lavoisier introduced the use of the balance into chemistry (p. 12), and that Dalton discovered the law of multiple proportion on consideration of marsh gas and olefiant gas, and then of carbon monoxide and dioxide, confirmed his discovery by the oxides of nitrogen, and then arrived at his atomic theory (p. 24). These statements are mere fiction.

In discussing solution, the author says nothing of the hydrate theory, and instead of pointing out that the theory of ions is extremely useful and extremely vulnerable, remarks that it can be regarded as one of the best-founded hypotheses of modern chemistry (p. 151). There is a curious statement on p. 40 to the effect that the practice of writing chemical formulæ, such as H_2SO_4 , instead of H^2SO^4 , is more common in Germany than elsewhere.

(2) This book is evidently the outcome of a keen interest in the teaching of chemistry. It is intended to be used by first-year students at a university, in connection with a course of lectures on chemical theory. There are chapters (in addition to what is to be expected on molecular and atomic weights, the periodic system, &c.) on the theory of electrolytic dissociation, the law of mass action, the phase rule, and thermochemistry.

Surely it is a mistake in policy to state Avogadro's hypothesis and to proceed without a moment's delay to apply the hypothesis to prove that the molecule of oxygen can be halved (pp. 11-12). Again, it would be much better to omit the proof on pp. 47-48—not a very clear one—that the "molecular weight of a gas is equal to twice its density compared to hydrogen." Once the student realises that under similar conditions the molecular weights of different gases occupy the same volume, it is obvious to him if it is only pointed out that he can find the density of a gas relative to hydrogen by dividing the molecular weight of the gas by 2 (the molecular weight of hydrogen).

A. N. M.

OUR BOOK SHELF.

Malleable Cast Iron. By S. Jones Parsons. Pp. xi+171. (London: A. Constable and Co., Ltd., 1909.) Price 8s. net.

THAT malleable cast iron has been given a work to itself is an index of its growing importance in the world of iron and steel. The methods of its manufacture are so closely allied to the other parts of foundry work that it is doubtful whether it is not better dealt with in a general work on the foundry, where its special features may be pointed out in a section devoted to this subject.

The present work deals with the whole of the foundry aspects of malleable cast iron, melting, moulding, annealing, cleaning and straightening,

design, patterns, inspection and testing, supplementary processes such as galvanising, and applications. The practical part of the work seems well done and needs little comment, but it is very unfortunate for those who are endeavouring to promote the application of science in the foundry that the compositions given on p. 9, if such pigs could be procured, would yield disastrous results. This is particularly unfortunate as the number of what are called "practical men" seeking the assistance of science in the foundry is steadily increasing, and these men are very keen on the quest after they have proved its first benefit. Anything misleading which would give them a feeling of distrust should be avoided if possible.

The analyses on p. 9 show pig-irons with from 0.145 to 2.52 per cent. sulphur and 0.93 to 1.50 per cent. phosphorus as suitable for the manufacture of malleable cast iron, whereas good specimens of this material do not contain more than about 0.1 per cent. phosphorus.

The definition of shrinkage is not good, and the author fails to grasp the essential differences between the manufacture of Réaumur and Blackheart malleable iron. Many other points have been noted, such as "that theorists regard the pyrometer as indispensable, but in practice it is less trustworthy than the trained eye," &c. W. H. Hatfield, whom he praises, would tell the author that this statement is quite out of date. This work as a whole is untrustworthy so far as the science underlying the manufacture of malleable cast iron is concerned.

A. McW.

A Manual of Infectious Diseases. By Dr. E. W. Goodall and Dr. J. W. Washbourn, C.M.G. Second edition, revised and enlarged by Dr. E. W. Goodall. Pp. xii+426. (London: H. K. Lewis, 1908.) Price 14s. net.

THE second edition of this well-known book has been prepared by Dr. Goodall, who expresses the loss sustained by pathology and clinical medicine by the untimely death of Dr. Washbourn, which occurred since the first edition appeared.

Little but praise can be expressed for the work. The descriptions of the diseases dealt with, their symptomatology and treatment, are clearly and concisely stated, and the differential diagnoses are excellent. All recent work seems to be incorporated, and the pathology and bacteriology of the diseases are given so far as is known. Thus, under small-pox, we find descriptions of the *Cytoryctes variolae* of Guarnieri and of the intracellular bodies of Councilman, Calkins, and Tyzzer.

We think that in a few instances the arrangement of the subject-matter might with advantage have been altered, or at least cross-references inserted. For instance, dealing with the "dissemination" of enteric fever, the part played by "bacilli carriers" is just noted, this portion of the subject being elaborated later under "Protection and Duration of Infectivity." Similarly the presence of virulent diphtheria bacilli in "well" persons as a mode of spread of the disease might have been emphasised, and membranous rhinitis should have been more clearly referred to in the section on "nasal diphtheria." The reviser believes that an attack of enteric fever confers almost complete protection; in this he is at variance with other recognised authorities. "Slop" diet is advocated for enteric fever, rightly so, we think; but some mention ought to have been made of more generous dieting as advocated by some, particularly in prolonged cases.

The authors doubtless had to set some limitation on the number of diseases dealt with, but as chapters are devoted to relapsing and typhus fevers and