

vania, Ohio, California and Texas crudes, that we might expect. In the section on 'Fermentation' also we find no mention of Buchner's great discovery of zymase in the expressed liquid from comminuted yeast-cells, which is now considered as the greatest advance in our knowledge of the action of the yeast plant since the time of Pasteur.

Part III., written for this edition by Charles D. Demond, S.B., in the space of 54 pages, gives a very excellent survey of metallurgical methods, covering all the technically important methods.

The book is undoubtedly the best book of its kind in the English language, covering in one volume of moderate size an outline of the manufacturing methods of technical chemistry.

SAMUEL P. SADTLER.

*Inorganic Chemistry, with the Elements of Physical and Theoretical Chemistry.* By J. I. D. HINDS, PH.D. Second Edition. New York, John Wiley & Sons. 1905. Large 8vo. Pp. viii + 651.

This work, on its first appearance, was carefully reviewed in this journal; it seems necessary, now, only to show in what respects the present edition differs from the former.

The plan of the book remains essentially the same, but there has been an increase of eighty-five pages, and the text has been revised. Several chapters have been enlarged or rewritten, and new chapters have been added. These changes affect mainly 'Theoretical and Physical Chemistry.' The treatment of these subjects is much better and fuller than in the earlier edition, but unnecessary *rules* and questionable statements may still be noticed. Is it well that a student should write structural formulas of acids by the following rule: 'Connect each hydrogen atom by an oxygen atom to the negative, then connect the remaining oxygen atoms, which are saturating, to the negative by both points'? Is it correct to say that 'the reaction of a salt is neutral'?

Although blemishes like the above are still too numerous, they are noticeably less than they were in the first edition. The excellence of the descriptive portion of the text is un-

questioned, and the work in its present form should win new friends.

L. B. HALL.

HAVERFORD COLLEGE.

*Cements, Limes and Plasters, their materials, manufacture and properties.* By EDWIN C. ECKEL, C.E., Associate, American Society of Civil Engineers, etc.; Assistant Geologist, U. S. Geological Survey. New York, John Wiley & Sons. 1905.

This is an exceedingly valuable and well-nigh exhaustive work. It is by far the most valuable work on the several subjects that it treats that we have met, and in our judgment may be rightly considered a masterpiece of compilation. In the orderly and systematic arrangement of sub-subjects in the several parts and chapters the author's mastery of his general subject is exhibited not only to his own credit, but to the great pleasure and profit of his readers; for next to the enlightening information conveyed by an author comes the proper unfolding of a subject through systematic arrangement.

It is, however, as an engineer, of broad attainments outside the field of engineering, that Mr. Eckel addresses engineers. He does not profess to be a chemist, the chemistry of cements, limes and plasters is not mentioned in his title, therefore he may be pardoned if in the small space he devotes to the chemistry of these substances he follows the well worn path made by Mr. S. B. Newberry and Mr. Clifford Richardson's committee, which for some reason not clear to the general reader leads direct to the manufacturers of cement, leaving the interests of the *users* of cement completely uncared for. Nothing else could be expected, as Mr. Richardson's committee has the floor, and that committee recommends a method of chemical analysis that is ultimate and that, so far as chemical analysis is concerned, destroys the differences that exist in very unlike cements. A cement that contained five per cent. of uncombined silica and fifteen per cent. of combined silica would show twenty per cent. of silica on analysis by the method recommended by Mr. Richardson's committee, while a cement containing twenty per cent. of combined silica would on ultimate