

relation between chemical constitution, mechanical treatment, microscopic structure, and other properties of iron and steel. The third part will treat of the reactions between metal, slags, and other agents. The first 62 pages on "Theory of Solution" constitute a valuable scientific introduction to the study of iron alloys. In the chapter on micrography the methods of preparing and examining iron and steel under the microscope are given, with illustrations. Nearly all the more important work on those microscopic constituents of iron and steel which have been isolated, or otherwise identified, is here brought together in compact and convenient form. The author falls into an error, however, when he states that titanium appears to occur as such dissolved in iron. In pig-iron it is known to occur, and has been separated from it, combined with carbon as TiC in microscopic, cubical crystals.

The work closes with many valuable and probably fairly complete references to larger works and scattered papers on theory of solution, micrography, chemical constitution of iron alloys, and constitution of slags.

P. W. SHIMER.

LEHRBUCH DER ANORGANISCHEN CHEMIE. VON PROF. DR. H. ERDMAN. Zweite Auflage, mit 287 Abbildungen, einer rechen Tafel und sechs farbigen Tafeln. Braunschweig : F. Vieweg & Sohn. Svo. xxvi + 758 pp. Price, 16 M.

A great many topics have been well handled and some of them quite fully treated. The tables of spectra of the "Edelgase," xenon, krypton, argon, neon, and helium, are beautiful pieces of work. The description of the separation of these gases and the liquefaction of air and kindred topics occupy considerable space ; the author enlarges on electrolytic dissociation, the ions, osmotic pressure, and kindred topics.

Less fortunate is the treatment of subjects belonging to chemical technology, which are, in a few cases, very badly handled.

No references are given to original memoirs. The synonyms are very fully given. In many cases the Russian name is printed and its pronunciation (in italic type) as well. The illustrations and the mechanical execution are up to the high standard so long maintained by this famous publishing house.

E. H.