

sample after being ground was treated in the same way, giving 10.55 per cent. in one week and 17.51 per cent. at the end of two weeks, thus showing both the limitations of the present method of analysis and the marked influence of the state of division on the results.

In view of the fact that carbon dioxide, in the presence of water, so readily decomposes Paris green converting at least one-half of the arsenic trioxide into the soluble condition, it would seem that even if an absolutely pure sample were used in spraying, it might easily happen that the carbon dioxide and water-vapor of the air would convert much more than the limiting 4 per cent. arsenic trioxide into the free state. Probably many of the irregularities observed in the action of Paris green on foliage could be directly traced to weather conditions which happen to be favorable to the formation of free arsenic trioxide from a comparatively pure sample of Paris green.

CHEMICAL LABORATORY OF THE
UNIVERSITY OF IDAHO.

NEW BOOKS.

GRUNDZÜGE DER SIDEROLOGIE. VON HANNS FREIHERR V. JÜPTNER.
ERSTER TEIL; DIE KONSTITUTION DER EISENLEGIERUNGEN UND
SCHLACKEN. Leipzig: Verlag von Arthur Felix. 1900. Price, 13 M.

The author of this interesting and valuable work contends that the science of iron, while still far from mature, as we all know, has now become old enough to have a name of its own, and he proposes to call it "Siderology." This name is to be applied to that science which concerns itself not only with the intimate morphological and chemical constitution of iron alloys, but also seeks to determine in what ways these alloys or compounds are affected by outward influences, such as mechanical and heat treatment, and what connection exists between them and the physical and mechanical properties of iron and steel. In the author's view, metallography (Osmond) or siderography (Jüptner) bears the same relation to the science of siderology as petrography bears to the science of geology.

The work is to appear in three parts, of which the present volume of 315 pages is Part First. It covers theory of solution, micrography, the chemical constitution of iron alloys, and the chemical constitution of slags. The second part will treat of the

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 reichen 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.