

just been rendered (May 28, 1900) in a case of infringement, in favor of the patent granted to A. H. and E. H. Cowles, Dec. 24, 1884, and against the patent of E. H. Acheson, alluded to above.

In stating the ground of their decision, the judges make the following statement: "There can be no doubt on the evidence that prior to the process patent in suit metallurgical operations had been performed through the instrumentality of the electric arc, electrical conductors consisting of wires or rods of metals, or of other solid or concrete bodies, or by electrolysis. But on careful examination we have failed to find any patent, publication, or other matter alleged as an anticipation, or as showing the prior art, a practical process for metallurgical or analogous operations involving the use of a discrete body of conductive, but resistant material rendered incandescent by the passage of an electric current, and mixed or otherwise in contact with the material to be treated. This is the broad, underlying idea of the process patent in suit, and is covered by its claims. The Messrs. Cowles were the first to invent and use this process, and the patent must be sustained. It is a meritorious one, and its claims are entitled to considerable liberality of construction." This decision gives priority broadly to the Messrs. Cowles for reducing ores and other substances by the incandescent method.

CHARLES F. MABERY.

CLEVELAND, June 5, 1900.

NEW BOOKS.

THE CHEMISTRY OF THE METALS. BY J. H. KASTLE. Lexington, 1900. vi + 198 pp. 8vo.

The author of this book admits in his preface that the number of text-books on general chemistry is so great that "the burden of proof certainly rests upon any new writer who ventures into this field to show that anything new in this line is deserving of publication," and makes a plea for the fuller study of the metals, bodies that constitute two-thirds of the elements. The author says: "An attempt has been made to supplement the laboratory work on each family of metals with a general presentation of the subject according to the Periodic Law."

Chapter I opens with general elementary statements as to the

differences between mixtures and compounds, analysis, synthesis, and chemical study of a substance; in successive chapters are given descriptions of the metals taken by families and by groups so as to avoid unnecessary duplication, extending from the alkalis to iron, nickel, and cobalt. Following the descriptive portion of each chapter are sections prescribing "Laboratory Work;" these sections consist chiefly of series of questions and in them lies the principal claim to originality for the volume. The queries are intended to make students think for themselves, but sometimes are singularly elementary; thus, following several pages describing the character of the metal magnesium, students are asked—"Is magnesium a metal?" "Is it heavy or light?" "What is its color?" (p. 47). After comparing granite and mercuric oxide, students are asked—"How could you make mixtures?" Yet some of the queries are difficult and would require examination of larger treatises.

To use this volume for instruction, the students must have previously become acquainted with the gaseous elements, the principal acids of inorganic chemistry and the rudiments of qualitative analysis, yet the primary principles of chemistry are laid before them with minutiae that would seem unnecessary had they mastered them previously. At the same time students are directed to make certain experiments, and the instructions given are hardly sufficient. On page 5, for example, students are told to heat HgO in a hard glass tube and to collect the gas evolved over water, but how to arrange this is not mentioned, nor is there any wood-cut of apparatus to illustrate the operation; indeed, illustrations are entirely wanting throughout the volume.

A blemish in the manufacture of the book is due to the carelessness of the printer; paper of uniform color and glaze is not used throughout; page 112 is of a bluish tint, and page 113 of a decided yellow hue. There is no index.

H. CARRINGTON BOLTON.

ERRATA.

In Vol. 22, page 573, line 23, for "sodium acetate" read "sodium arsenate;" page 576, line 28, for "really" read "nearly."