

phides of arsenic and copper, burning the precipitate and filter with powdered sulphur, and finally weighing as the mixed oxide and subsulphide of copper. On ten samples of Paris green the following results were obtained:

No.	Apparent per cent. of arsenious oxide extracted.	Per cent. of copper oxide extracted.	Arsenious oxide corresponding to copper oxide extracted.	Actual per cent. of arsenious oxide in Paris Green.
1.....	5.81	0.80	1.50	4.31
2.....	9.69	0.55	1.03	8.66
3.....	4.60	0.70	1.31	3.29
4.....	4.60	0.60	1.12	3.48
5.....	4.11	0.65	1.21	2.90
6.....	3.63	0.50	0.94	2.69
7.....	7.75	1.35	2.53	5.22
8.....	6.54	0.70	1.31	5.23
9.....	10.65	0.45	0.84	9.81
10.....	5.57	0.90	1.69	4.88

J. K. HAYWOOD.

*On Carborundum.*—In a paper on carborundum (carbide of silicon), read at the World's Congress at Chicago in 1893, and published later in this Journal,<sup>1</sup> there appeared in the second paragraph the following statement :

“ It is an American invention, having been discovered by Edward H. Acheson, of Monongahela City, Pa., who carried the invention to commercial success with extraordinary energy in the face of many obstacles.”

As a part of the discussion at the close of the paper, I asked the author if he was aware that an electric furnace precisely similar to the one he had described was fully protected by letters patent issued to Messrs. Eugene H. and Alfred H. Cowles, in 1884. I further asked him whether the author was aware that in 1885, the substance to which had recently been assigned the name carborundum, was made in the Cowles furnace, and that specimens of this material could be found in several museums throughout the country. The author disclaimed any knowledge of such a furnace, or that any such material had been produced prior to that produced by Mr. Acheson.

In the United States Circuit Court of Appeals for the Third Circuit (Judges Dallas, Gray, and Bradford), a decision has

<sup>1</sup> This Journal, 15, 411.

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.

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### 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