

"When the possibilities of the electric furnace have been more fully ascertained it is likely that some large water-powers that are situated conveniently with regard to metallic ores may be utilized for their reduction, the electric plant being available for other purposes after the exhaustion of the ore supply. At the present time such a large return can be obtained from capital in Canadian industries that only the most easily developed water-powers are considered. When the country becomes more thickly settled and when capital is more abundant, a smaller return will be expected and the interest charges on permanent developments such as hydro-electric plants will be less, thus enabling powers to be utilized that would be too costly under present conditions."

There are one or two places where a change would have been an improvement. The reviewer believes that the original Cowles furnace was an arc furnace and not a resistance furnace, p. 6. It is doubtful whether we are justified in saying that calcium is an intermediate product, p. 10, in the conversion of lime into calcium carbide. It is quite possible that it is. The behavior of silica makes such an assumption plausible, but the facts hardly warrant the definite statement that "the lime is reduced by means of the coke to the metal calcium, and this in turn reacts with more coke to form a carbide." On p. 159 the cut of de Laval's zinc furnace is upside down. On p. 186 it seems a pity that we should not have one of the drawings of the aluminum furnace which came out during the lawsuit between the Pittsburg Reduction Co. and the Cowles Co. *Wilder D. Bancroft*

**Chemisch-optische Untersuchungen.** By J. H. Jellett. (*Oswald's Klassiker der exakten Wissenschaften*, No. 163). Übersetzt von L. Frank. Herausgegeben von W. Nernst. 12 × 19 cm; pp. 83. Leipzig: Wilhelm Engelmann, 1928. Price: bound, 1.60 marks.—Probably every man, who lectures on physical chemistry, makes at least a passing reference to Jellett and his work on the optical rotation of the alkaloids. Doubtless a few out of that large number have read Jellett's original paper, but certainly most of them have not. To both groups of men this translation of Jellett's paper will be welcome.

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**Über die Oxydation des Stickstoffes im gekühlten Hochspannungsbogen bei Minderdruck.** By Adolf Koenig. 17 × 24 cm; pp. 76. Halle: Wilhelm Knapp, 1908. Price: paper, 3.00 marks.—With a long arc under ordinary conditions, the equilibrium depends on the thermal equilibrium. With a short arc playing under diminished pressure in a cooled tube an electrical equilibrium must be reached because the percentage of 9.8 NO actually obtained corresponds to the improbable temperature of over 4,300° C. With a gas mixture of approximately 82% oxygen and 18% nitrogen, a yield of over 12% NO was obtained, corresponding to an estimated equilibrium temperature of about 5000° C. Since the values were higher, the more slowly the gas passed through the tube, it is quite impossible that the equilibrium can have depended on thermal conditions alone. Full details in regard to this very creditable piece of work are given in the pamphlet.

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