

process. Both parts are profusely illustrated with diagrams and photogravures. Parts V., VI., VII., VIII. and IX. take up iron, copper, lead, zinc and refining, respectively. In each of them the practical is wedded to the theoretical. Perhaps the most valuable section is Part X., which is headed "Commercial." In logical sequence the various steps in the establishing of a metallurgical industry are taken up, from location of works to the marketing of ores and metals.

We have read Professor Austin's volume, not only with interest, but with decided pleasure. So skilfully has the kernel of each subject been extracted, and so simple and comprehensive is the author's presentation of each, that it is impossible not to feel instructed and edified after a perusal of this excellent though unpretentious book.

CORRESPONDENCE

Bruce Mines, Ont., June 8th, 1907.

The Editor THE CANADIAN MINING JOURNAL,
Toronto.

In your June number the article entitled "Reciprocity" appeals to the writer forcibly, and for the benefit of those who may fall into similar errors it may be of interest to place on record how easily mistakes can be made in the treatment of ores, especially those of an auriferous nature, which, in appearance, are similar to those from which former experience has been acquired, and yet when put to the test of milling the result is entirely different. The writer having erected two stamp mills in South America, and made a very good recovery by battery and plate amalgamation, afterwards in Australia handling ore which was cyanided after being stamped, had the management of a considerable area in the Philippine Islands placed in his charge—this was in 1893-96, before the American war.

After making several hundred fire assays, development work was commenced, and samples taken every week across each heading, a quantity equal to two pounds weight of ore being broken for each foot in width; after a little practice this was done very fairly, and, there not being any gouge, the samples were representative. After drying the ore, it was ground by hand on an Indian rubbing stone by means of another stone. The ore was washed in a "batea"—the native wooden pan—by an expert panner, and the resultant gold fused into a small bead in the half of a species of sea shell; this was done by means of a bamboo blowpipe on a few bits of charcoal. The lime in the shell acted as a flux, and the resultant bead was about 820 fine. In those days we could not get any acids carried by the coasting steamers, hence parting the gold was out of the question.

A continuous series of samples, aggregating two tons, showed rather more than \$15 per ton, and there was present some pyrites which carried good values.

Now having a three-quarter ounce proposition of apparently free milling ore, it was considered safe to erect a ten stamp mill, and we proceeded to select a site where the tailings could be accumulated for future treatment. I will not dwell upon the difficulties of handling the machinery and erecting it, but it was done, and a mill man sent from the United States, who had been in charge of the Father de Swet Mill at Homestake, S.D., but do what we would, or could, the recovery in the batteries and on the plates did not average more than \$2.75. We put in blanket strakes and saved concentrates going from 5 to 15 ounces of gold.

After making a most careful examination of everything, we came to the conclusion that whilst the abrasive action of the grinding by hand liberated the gold so that it could be saved in panning, the pounding action of the stamps flattened the gold, and it was carried off by the water without coming in contact with the amalgamated surfaces, and this in spite of mercury traps, etc. Ever since this experience the writer has been very chary of advocating stamp mills not followed by cyanide.

To add to his annoyance a report was circulated, and finally reached the ears of the managing director, resident in Manila, that the gold had been recovered but stolen! Fortunately, mill records had been carefully kept, and all amalgam weighed and the gold smelted and weighed in the presence of two or more of the white employees.

Now, how this may be applied to the present day is evident. Much of the ore to be treated from the new discoveries of Larder Lake, etc., cause the same disappointment, and perhaps this warning will be of service to those who are looking forward to results based upon assays, and the opinion of the writer may be taken for what it is worth, viz., that in many instances, especially for friable ores, the improved Huntingdon mill, or any other type in which grinding or abrasive action as opposed to stamping, will yield better results for those working on a small scale who wish to get quick returns with a minimum of expenditure. It should be remembered that the primitive form of the arrastra has produced many million dollars worth of bullion.

Yours obediently,

H. J. CARNEGIE WILLIAMS.

EXCHANGES

The Mining Investor, June 3rd, contains a caustic letter from "Critic."

The British Columbia Mining Record for April is, as usual, entirely readable and reliable.

The Coal Trade Journal, May 29th, announces that it has removed its offices to Nos. 20, 22 and 24 Vesey street, New York.

The Mining and Scientific Press, May 25th, gives a third instalment of "Letters of a Self-Made Miner to His New Foreman."

The Mining World, June 1st, gives a sketch of the oil fields of Colorado. The second installment of "British Columbia Placers: Past and Present" makes most interesting reading.

The Engineering Magazine for June contains several articles dealing with power and production. The system of mining low grade copper ores in the Boundary District, B.C., is described by Mr. Frederick Keffer, president of the Canadian Mining Institute.

The April number of *Economic Geology* has been received. In it are a number of most valuable articles. Especial mention may be made of the following: "The Composition of Coals," "Magmatic Emanations," and "Recent Improvements in the Utilization of Coal."

In *The Engineering and Mining Journal* for June 1st are articles on "Zinc Oxide and Zinc Lead Pigment Manufacture," and on the "Novel Equipment of Tywarnhaite Copper Mine." The latter paper describes an installation of dynamos driven by power from producer gas engines and the vacuum process of concentrating low grade copper ore.