

to produce actively for that length of time, otherwise for the number of years during which it has been so equipped; (4) the average selling price at lower lake ports for 18 years; (5) the present value of a \$1 per year dividend based upon a 10 per cent. return on the investment, and capital returned in ten years of operation by investment of an annual sum at 3 per cent.

Mr. Finlay, in reply, states that Mr. White's method gives a valuation for the Michigan mines, on an 18-year life, of \$42,000,000, and states that in his opinion the properties cannot be bought for three times this valuation.

It is not likely that the mine owners and the State will ever agree entirely on the question; but open discussion will lead to a fuller knowledge of the facts. It is to be expected that Mr. Finlay will endeavour to make it clear that his method is correct, and it is also to be expected that those interested in the mines taxed on his valuation will endeavour to show that his figures are too high. From the discussion we may learn how to put a fair price on a Lake Superior iron mine. In a recent judicial decision Mr. Finlay's method has been upheld by the courts.

## SECONDARY ENRICHMENT OF SULPHIDES

Those engineers and geologists who for economic or purely scientific purposes had occasion to study carefully the sulphide deposits of many of the Western and Southern mining districts of North America, found that the deposits showed three more or less well defined zones. A shallow zone of lean or barren vein material, an intermediate zone of rich ore and a deeper zone of leaner ore. Often the intermediate zone proved to be the only portion which could be profitably mined, and its relation to the others became a question of first importance. Independently three geologists, from the facts observed by many men who were familiar with the deposits, and from their own observations, formulated the theory of secondary enrichment. This satisfactorily explained the phenomena and assisted materially in obtaining an intelligent idea of the character of many orebodies.

The deep ore is considered as primary, having been but little altered since the deposit was first formed. The shallow zone is supposed to have lost considerable of its metallic content by solution and downward migration of metallic sulphides. The intermediate rich zone has supposedly been formed by the redeposition of sulphides from the downward migrating solutions.

Like most theories, this one of secondary enrichment seems to fail in many cases to explain the facts. It has so often been demonstrated as the true explanation, however, that it has proven a very useful guide in the valuing and developing of many deposits.

Unfortunately, it is frequently applied to deposits which differ fundamentally from those in which were

observed the phenomena which led to the formulation of the theory. In such districts as Northern Ontario, where glaciation has removed the weathered zone, the theory without modification has no legitimate application. There the present surface must be regarded in most cases as having no necessarily close relation to the richest portion of an orebody. It is rather a chance surface due to the varying degrees of erosion after the deposits had reached practically their present condition.

It is, therefore, of interest to read in Mr. W. H. Emmons' recently published U. S. G. S. bulletin on the Enrichment of Sulphide Ores, that he does not consider many of the ore deposits of Canada to be correctly referred to as examples of secondary enrichment. Some paragraphs from his discussion on glaciated deposits will be found elsewhere in this issue.

## SEE THE MINES OF CANADA

The excursions to be held in connection with the International Geological Congress this summer will include trips to nearly all of the leading mining districts of Canada. Those who join the Congress will have unusual opportunity of visiting the producing mines. Coal, asbestos, silver, copper, nickel, lead, gold, and natural oil and gas properties will be inspected. Complete guide books and maps will be available. There will be special private trains, and the railroads have made remarkable reductions in rates for the period, June 15 to October 31.

## CORRESPONDENCE

### THAT "SUGGESTION FROM THE WEST"

Editor Canadian Mining Journal:

Sir,—May I add to the later part of your editorial comment of June 1, on the suggestion of the British Columbia Mining Association, that Mr. R. F. Green, M.P. for Kootenay, British Columbia, be appointed Minister of Mines for Canada, that the report of the meeting of the Association published in the Daily News, of Nelson, B.C., includes a misstatement, which is contained in the following excerpt from that report: "Mr. Retallack moved the resolution, urging the Government to create a separate portfolio of Minister of Mines, and to appoint the member for Kootenay, and quoted a resolution passed by the Canadian Mining Institute which suggested Mr. Green for the position." The point I wish to make quite clear is that at no time has the Canadian Mining Institute even considered a resolution suggesting Mr. Green for the position of Minister of Mines, not to say passed one. I may add that the seconder of the resolution moved by Mr. Retallack at the meeting of the Association above referred to has informed me that Mr. Retallack did not make the quotation as stated.

E. JACOBS.

Victoria, B.C., June 7, 1913.