

ers of America, with 277,050 members in the States and 12,950 in Canada. This marked disparity is significant enough.

As we are concerned primarily with mine labour we shall restrict our further remarks to those organizations that have to do with mining, quarrying and ore reduction.

Three international bodies are represented in the mining and quarrying industries of Canada. These are the United Mine Workers of America, the Western Federation of Miners, and the International Quarry Workers Union of North America. Of similar Canadian bodies there are two, the Provincial Workmen's Association and the Canadian Granite Cutters' and Quarry Workers' Union. In addition to these there are numerous local societies that have no branches and no outside connections.

The three international organizations mentioned above have, respectively, 50, 23 and 4 branches in Canada; while the Provincial Workmen's Association has 22 branches. The Canadian membership of the international bodies mentioned are, respectively, 12,950, 5,196 and 100; while the P. W. A. has 4,000 miners enrolled.

It will be seen that United States organizations absolutely dominate mining labour in Western Canada. The Provincial Workmen's Association is a Nova Scotian organization which received a strong impetus several years ago in a protracted fight with the U. M. W. A. While it is a vigorous society, it covers but a small area.

THE LAW OF THE PAY-STREAK.

In our issue of June 1st, 1912, we reprinted from the Bulletin of the Institution of Mining and Metallurgy, a paper contributed by Mr. J. B. Tyrrell, "The Law of the Pay-Streak in Placer Deposits." On this subject little has heretofore been written. Mr. Tyrrell's object was to correlate and classify observed phenomena and to demonstrate the applicability of certain simple natural laws governing the concentration of heavy metals and minerals in alluvial deposits. Elusive as the placer pay-streak may seem, it is nothing more or less than a "feature in the structure and growth of the valley in which it occurs, its formation is governed by certain geological laws, and those laws should be recognizable without great difficulty if the growth of the valley can be traced with reasonable accuracy."

While Mr. Tyrrell's facts were gleaned in the Yukon, his generalizations are meant to have the widest possible application, and to throw light upon the problems of prospecting for placer gold.

The latest Bulletin of the Institute, No. 93, contains a highly interesting discussion of Mr. Tyrrell's paper. It is timely to note here the trend of the criticisms offered.

Mr. Newton B. Knox demurs strongly to Mr. Tyrrell's conclusions. The valleys of the Klondike, says Mr.

Knox, are ideal for concentration. Natural conditions there approach those of a long sluice with rapidly flowing waters, regular gradients, rough bottoms, and few or no floods. In regions subject to sudden floods, the laws enunciated by Mr. Tyrrell would break down. In answer to this we may remark that Mr. Knox is misinformed concerning the Klondike. Floods are severe and not infrequent in that territory. While the rivers do not become torrential, yet, even where they do, the problems to be solved as regards the concentration and disposition of placer gold differ in degree rather than in kind.

Mr. C. W. Parington follows, in the main, the line taken by Mr. Knox, and suggests that Mr. Tyrrell's hypothesis as to the V-shaped river valley needs modification when applied otherwheres than in the Klondike.

While both critics have a certain amount of right on their side, we believe that both have missed the real point of Mr. Tyrrell's paper. That point lies in the fact that Mr. Tyrrell has demonstrated that geological laws govern the deposition of placer gold. Experience in different countries may modify the laws; but a grasp of the philosophy of placer gold will inevitably aid the prospector, no matter what the local conditions may be.

Incidentally, it is refreshing to note that Mr. T. A. Rickard has his terminological flog in the course of the discussion. He objects strongly to the compound word "pay-streak" as being local, restrictive, and vicious. "Gold-bearing channel" is the substitute suggested. Unfortunately, the substitute is too lengthy to meet the requirements of a time-saving age.

REFINING SILVER AT THE MINE.

We quote elsewhere in this issue from an article recently contributed by Mr. T. A. Rickard, to the *Mining Magazine*, descriptive of the refining of silver at the Nipissing Mines. This innovation, which, we understand, is about to be adopted by at least one other important mine in the Cobalt district, will effect not only a large direct saving in marketing costs, but the practice now followed will enable the bye-products of the ores, notably cobalt oxide, to be conserved for future profitable realization. The demand for cobalt oxide is limited, as was also the supply prior to the discovery and operation of the Cobalt mines. The quantity thus made available demoralized the market, but eventually, without doubt, prices will return to their former level. Since, however, in most cases the smelters have made no allowance for Cobalt in ore-consignments from the district, the local recovery of this metal, even if marketed at obtaining prices, will mean so much additional profit to the mines adopting this course.

COBALT DIVIDENDS.

It is satisfactory to note that the dividends paid by the Cobalt mines continue to be well maintained. The