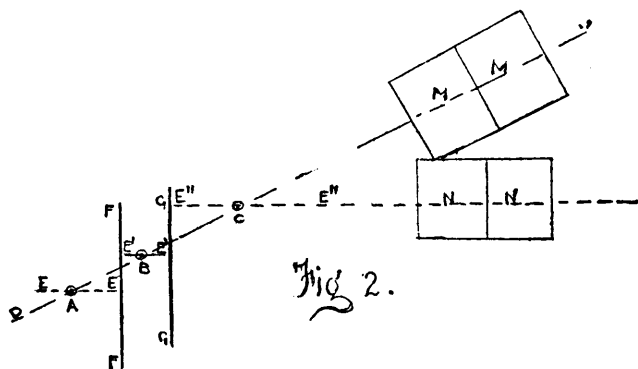


Some shallow pits having been made, on the back of the vein at the points A, B, C., figure 2, it was assumed that the vein had a direction corresponding with that of the fine dotted line D D, and locations were accordingly made at M and M. A stratigraphical study of the ground would have shewn that the



vein really had the direction of the lines E. F.; E., E., E., E., having been shifted by the faults F, F, and G, so that the extensions should, properly, have been staked at N, N. A possible success would then have been recorded, instead of a certain failure, so far as relates to the vein supposed to have been staked.

The staking of "position" claims is frequently resorted to. Such claims are not known to have any merit of their own, and usually do not comply with the requirements of the law, with regard to "mineral in place"; but in the eyes of "suckers" they are frequently supposed to be of great value because they adjoin some property either of ascertained value or of **great promise.** The location of claims in this way is very detrimental to honest mining and their purchase is the purest kind of gambling. If the position claim happens to be on one side of a vein already located the most it can hope for is the dip extension, which must be at a great depth, if the claim on the apex has been properly located. Should the position claim be endwise of another, known to be a vein, the former may, or may not, have the extension of that vein. It may have nipped out, or been shifted sideways, for some considerable distance, by one or more faults.

Prospectors frequently lose much time, and induce others to waste money, in working deposits of very low value, on the assumption that they will improve in depth. If a deposit is low grade everywhere on the surface, and there is no evidence of leaching, experience does not justify the assumption that such deposit will improve downward. It may do so, but such a possibility cannot be inferred from the behaviour of ore deposits generally.

Prejudice in favor of, or against, a particular kind of country rock, or an implicit reliance on associated minerals, frequently interfere with the prospector's success. If it could be shewn, for example, that in Montana or California or elsewhere certain metallic minerals always occurred in a particular kind of country rock, or along with certain other minerals, such associations could not be assumed to prevail in British Columbia. Here, as in every other district or country, petrological and mineralogical relations must be worked out independently and without regard to anything but facts. These "are chiefs that winna ding."

A great deal of nonsense is frequently talked about

veins being capped over (not by drift which is usual, but by solid rock) when they cannot be followed on the surface. In the great majority of cases the real explanation is either that the vein has pinched out or been shifted by a cross fault. In the latter case its continuation may be found by a careful examination of the ground and this should be done, before staking, if possible.

(To be Continued).

THE APPLICATION OF CYANIDE TO THE RECOVERY OF GOLD.

(BY W. OLIPHANT BELL T.S.M.)

CYANIDE—the abbreviated name for the chemical compound known as K. C. N., or cyanide of potassium is now widely recognized throughout the world as an invaluable agent for the recovery of gold, (existing under certain conditions) which would otherwise be lost or at least would not pay to extract, by any complex process. Virtually it is only within the last eight years that any practical application has been made of this solvent, but already it is considered of the greatest importance and no plant for the treatment of free-milling ores is complete without the cyanide department. In South Africa, Australia, New Zealand and America great results have been obtained through the adoption of this process and it is safe to say that it has been instrumental not only in vastly increasing the gold returns, but in literally saving mining companies and districts from failure and disaster. Such a potency for good must necessarily be received unreservedly and it is small wonder that to-day there are many in British Columbia who look forward to a similar record following the use of cyanide on our fields. At the present time there is no actual working of the process here on any other than the mere experimental scale, but preparations are rapidly going forward in more than one quarter and ere long we may hope to see several plants in full swing. It will then be by actual results that we can judge of its suitability for British Columbia ores and if proven satisfactory the possibilities for the future are great. A few facts concerning the working of cyanide are gleaned by experience in countries where it is an indispensable factor may be of interest now, when local interest has been deeply touched and may very possibly be concerned in its introduction here.

Cyanide was known to the chemists many years ago to be a solvent for the precious metals, but then, as now, the utility of many common place facts connected with science was not appreciated and so it was left for Drs. McArthur and Forrest, in recent years, to achieve fame and fortune by demonstrating the commercial use of the chemical in its application to the treatment of gold and silver ores. In the first instance there can be no doubt but that its use was restricted to clean ores i.e., containing little or no sulphurets and even to-day best results can be obtained from ores of this description. It was some time, however, before any substantial headway was made, on account, of course, of the many little details which required perfecting, both in the direct use of the solution and the arrangement and design of the plant itself. The first great advance made by the new lixiviation process took place on the Rand-Transvaal, where the many thousands of tons of tailings accumulated from the batteries of small value in gold, were successfully treated. The effect was profound, for the lodes in that country are mostly of low