

"Look Before You Leap"

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The attention of a large number of enterprising people in the Philippine Islands, at present, is attracted to mining ventures. A great deal has been said about sampling and otherwise investigating mineral deposits, but the majority still have a tendency at times, to jump at a property without consideration, to the proper investigation, as to the average grade, nature, and possible extent of the deposits to be exploited. This statement is made to help to preserve the reputation of legitimate mining, and it does not apply to the honest and experienced mining engineers or geologists.

Some people, it would appear, have an uncanny ability to cut their samples or to sink test pits in high grade spots. One or two samples, or a pit showing high values serves the promoter and owner apparently as sufficient proof that the values throughout the entire deposit are the same. This is particularly true with the inexperienced prospective operator or investor who, having on hand one sample of a high value and the assurance of the promoter that the property contains millions of tons of this deposit, usually takes his pencil and paper and figures that he can make millions of pesos with comparatively little investment. The popular belief is that after values have been found, further thorough sampling or any investigation as to the proper method of treatment of the ore is simply waste of time and money. They install machin-

ery at once to treat the deposit and the result, as a rule, is failure of the undertaking.

There are many instances when a reliable engineer, after considering the geology and sampling of a property, reports a negative result; the owner or promoter, instead of dropping the property, attempts to further capitalize his prospect and interests others to invest, under pretense that either the property was not given due attention by the engineer or somebody is trying to steal his property.

In sampling placer gold the question of a proper method of determining gold in the samples, sometimes arises. Some unknown "prominent mining engineers" claim that the gold in sands exists in some "other" form that it is known to an average engineer or assayer, and it will not respond to any known standard of treatment, such as fire assay, etc., but will yield to some "special" secret process. The best thing to do, when fire-assay does not show any value, is to leave the property alone.

For some unknown reason some investors have a tendency to absorb the words of this unknown "prominent engineer", regardless of the reliability of the information, and many reliable assayers are accused of submitting false reports as to the values of samples, when they really are not to blame for them. The parties that submit the samples, usually have very faint, if any idea, as to the method of securing and pre-



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paring the samples for the laboratory, having little or no consideration as to the necessary precaution and time that are so essential in preparing duplicates.

A reputable owner or promoter of a property will gain much by having a reliable engineer to investigate the deposits before trying to interest investors. This investigation should be thorough, accurate, and must cover the following important factors:

Location. Distance and means of transportation from the market and point of supply. Reliability of existing means of transportation should be determined.

Local Geology must be studied to gain information that may lead to a conclusion as to availability of minerals sought on the commercial quantity. The relation of the exposed values to the quantity of assured mineral; the probable persistence of the values laterally and in depth; and the best methods of exploitation should be ascertained.

Original Geologizing (including examination of surface and underground exposures, character and position of wall rocks and of the deposits themselves) should be considered, as it may throw light on the value of the property with expenditure for exploitation, etc.

General Topography and maps of mine property should be carefully investigated and their reliability determined. They are to be studied with the purpose of determining such facts as position of boundary lines, possible transportation, water supply, topography, outcrops, underground exposures, and developments in connection with exploration of the property.

Examination of placer-gold property should include additional information as to yardage and value per cubic yard,

amount of water available and right to use same, and working season.

If the results of preliminary field investigation are favorable, a thorough and systematic testing of the ore in the laboratory should follow immediately. Properly taken samples and of such weight (50-1000 lbs.) as is necessary, must be submitted to the following tests: (a) Determination of qualitative mineralogical composition; (b) Assay for content of valuable minerals; (c) Determination of distribution of valuable minerals; (d) Microscopic determination of aggregation of valuable minerals; (e) Investigation of the behavior of the ore in crushing and in grinding; (f) Determination of tentative flow sheet for laboratory procedure, indicating the fineness of material to be treated, machines, and corresponding results; (g) Construction of metallurgical balance sheet of results of the laboratory testing; (h) Confirmation of laboratory tests by a larger continuous run on small commercial scale.



When investigating placer gold, it is necessary to include complete data on the physical characteristics of gold in the gravel (sizing tests, etc.); shape of particles; whether the gold is free or associated with other rare metals or other minerals; whether it is bright or tarnished; screen analysis of the gravel; determination of clay and silt content, cementation, depth of the gravel, overburden, and possibility for tailing disposal. Shuicing, tabling, gold-cloth recovery, cyanidation, amalgamation, and flotation, and their various combinations for the most efficient recovery of gold, should be thoroughly investigated with their corresponding costs. If properly carried out, these investigations will leave no doubt as to the most economical method of recovery.

It is important to emphasize at this point, however, that the samples brought to the laboratory for testing, should be taken and handled in such a way as to represent the true characteristics of the deposits to be investigated. Unless these samples are properly taken and handled, the entire laboratory work will be of no value.

Having on hand a complete set of data, the owner or promoter will be able to decide whether or not the property is worthy of further investigation. In the affirmative case, the prospective operator or investor should employ his own engineer so that he may check the sampling and methods of ore treatment. If there is uncertainty, in any way along the course of investigation, it would be advisable then to have still another engineer, or group of engineers, to check up the entire work.

My advice to would-be-mine-operators is "LOOK BEFORE YOU LEAP." Little is to be gained and much may be lost by diving headlong into the turbid whirlpool of mining ventures. Regardless how well one knows the party that is offering the "best prospect in the country", an extra measure of precaution may save considerable embarrassment as well as time and money. The first and most logical thing to do in such a case; Is to inquire why the so-called "best prospect in the country" has been idle and, why, with so many people looking for a chance to get rich, no one has taken the property over and started operations earlier. Nine times out of ten the solution to this query is over-estimation of value and tonnage, or both.

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If iron now being prospected in the Paracale district proves out, it will certainly find ready demand in Japan. In Zambales, field of the chromite craze, Amalgamated has contracted the output of three companies. Elsewhere it is looking up sulphur, claiming to have processes for preparing

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