

THE SAMPLING AND ESTIMATION OF ORE IN A MINE

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The Sampling and Estimation of Ore in a Mine by T. A. Rickard

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T. A. RICKARD

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PREFACE.

The republication of the papers and consequent discussion upon the sampling of ore in mines and the estimation of the tonnage available needs no apology; it is a subject of the utmost practical importance. It is safe to say that the reputation of mining engineers has suffered more from the neglect of this branch of practice than from any other cause. On the other hand, those engineers who have won a deserved reputation for excellence of judgment are the men who, as a rule, have learned early in their career how to take samples which are a trustworthy index to the value of large bodies of ore. Inferences from the results thus obtained are, of course, as important as the sampling itself, but he who is careless in the performance of one duty is hardly likely to be circumspect in the other. There are not many data bearing upon the present and future productiveness of a mine which an engineer can secure at first-hand; all the more reason for the exercise of vigilance in collecting those which are available. Such statements indeed are truisms to the experienced, but they are overlooked with a fatal frequency.

Allied to this subject is the question of the terms to be employed in describing the variously conclusive evidence regarding ore in a mine. The different terms suggested in the course of the discussion, which is herewith repro-

duced, can be contrasted with the definition brought forward by the council of the Institution of Mining and Metallurgy, London, in a recent circular. It is not likely that the majority of mining engineers will ever agree to confine themselves to the use of exactly the same words, nor would we advocate such a step, because the imposition of cast-iron terms based upon a suppositious uniformity of conditions is calculated to cripple the effort to prepare accurate descriptions of unlike occurrences of ore. No technical word or set phrase will cover the varying degree of evidence obtainable concerning the tonnage of ore in existence in a mine, or in the various portions of it. Nevertheless, while it is unlikely that every one will agree to use exactly the same terms, it is becoming evident, as the light of intelligence is thrown upon the phrase, "ore in sight," that it not only fails to be descriptive, but it is misleading, especially to the average investor in mines who is apt to take it in its literal and most obvious sense. In its ultimate significance only ore in the bins is "in sight"—that is, your ore is *in sight* when you have actually taken it out of the mine. The discussion, however, brings out very clearly the need for precision of language in mine reports, and whether an engineer uses one term or another he should always be at pains to explain just what he does mean. After all, the primary purpose of a report as made by a mining engineer is to state facts as lucidly as possible and in terms which cannot be misunderstood by the person at whose request and expense it has been prepared. It is better to go into details of explanation than to mislead, unconsciously, by the use of terms which are capable of several shades of meaning.

The discussion of these practical matters will, we trust, serve to emphasize the fact that the estimation of the ore-reserves and the exercise of judgment concerning the future prospects of a mine require most of the qualities which make for engineering sense, and that the work of sampling, *plus* the inferences from it, epitomizes those characteristics which, taken together, constitute the difference between a good and a bad mining engineer. If

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we can assist those who are beginning their professional career, we shall be amply recompensed.

These discussions may point out pitfalls to be avoided by the young engineer. If he profits by the experience of others, he will be exhibiting a noble thrift; if he disregards it, he will be guilty of a prodigal squandering, for there is no improvidence so pitiful as the waste of experience.

T. A. RICKARD,

Editor of *The Engineering and Mining Journal*.

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