all the blame can be thrown upon those newspapers that have aided and abetted the fakirs. Nor yet upon the Provincial Government can all the responsibility be placed. There rests upon honest mining engineers, mine owners, and upon all connected with what should be the noblest and cleanest of industries, the obligation to give public utterance to their convictions. Further, the Canadian Mining Institute is called upon to throw its influence on the side of right.

But most particularly is it desirable that from our mining schools, from the men who are training the mining engineers of to-morrow, the public should receive a clear pronouncement. The profession of mining engineering requires and must demand protection from pretenders.

WAVERLEY FORTY YEARS AGO.

That indefatigable worker and versatile scientist, Dr. Henry Youle Hind, contributed largely to the literature of this country. His volumes of travel will, perhaps, keep his name green when his other labors shall have been forgotten. But to many his reports on Nova Scotian mining districts are fraught with special interest.

Dr. Hind's report on the Waverley Gold District of Nova Scotia is dated 1869. At that time, except for the use of steam, mining methods in Nova Scotia were crude and primitive. Dr. Hind remarks that on the North or Brodie, lead at Waverley there were then 23 shafts within a distance of only 1,800 feet. The average distance between the shafts was 78 feet; the greatest depth attained was 240 feet; and the mean depth 185 feet. This was also true of the Tudor, North Taylor, South Taylor, and Number VI. leads, on which over a total superficial distance of 4,800 feet, there were no less than 55 shafts. Dr. Hind not only pointed out the futility and wastefulness of a system whereby one shaft was sunk "to every superficial area of forty-seven feet square," but strongly of advised consolidation and co-operation.

He condemned also the practice of mixing quartz from different leads and crushing the whole together. "A poor lead worked at the same cost as a rich lead may neutralize all the benefits which would be obtained if the rich lead were worked alone. Each lead ought to be crushed by itself, and a statement of the result with the cost of mining the quartz recorded. . . . Plans of all the workings are also essential, showing at least monthly progress."

In those days several of the Waverley mines showed, as they do to-day, rich specimen ore. The companies that encountered sufficient quantities began to pay large dividends. Against this Dr. Hind wrote unreservedly. His advice is as necessary to-day as it was forty years ago. "The absorption of all returns to pay large dividends is as a rule as fatal an error in gold mining as in most other enterprises."

The mining costs per ton were extravagant. Dr. Hind states that as Mr. Burkner, operating on the Tudor lead, reported mining expenses of $12 per ton up to the close of 1866. A reduction to $8 per ton was then effected. But at least 33 per cent. of the gold was lost in the tailings.

At one place ten men were employed breaking and feeding 35 tons of quartz to the mill, during 24 hours. "Why should not this work be done by four men feeding a "breaker" with hopper, and moved by the surplus water power?" is the pertinent enquiry of Dr. Hind.

Mr. Burkner's sworn returns for the year 1865 to the Commissioner of Mines show a yield of 8,727 oz. 11 dwt. from 6,972 tons of ore, an average of 1 oz. 6 dwt. per ton. The total working expenses were from $10 to $14 per ton. But the miners levied on the mine, in misappropriating specimens and amalgam, to the surprising extent of "at least $50,000 to $60,000, or 2,500 to 3,000 ounces, if not more!"

There are innumerable passages that, if space permitted, we would quote from Dr. Hind's engaging pamphlet. We have indicated enough, however, to show that there were many factors militating against the continued growth and success of this rich Nova Scotian gold district. Obviously, no gold mines could long survive such treatment as that to which the Waverley mines were subjected.

The mistakes and blunders of the early gold-seekers without doubt have been repeated indefinitely in succeeding years. Probably in the smaller mines and prospects of the province they are being repeated to-day.

As a wonderfully interesting piece of history, and as a clear warning against the errors of ignorant haste and inefficiency, Dr. Hind's "Report on the Waverley Gold District" should be reprinted and distributed throughout the mining sections. At present, copies of the report are becoming more and more rare.

DISCUSSION.

In glancing through the last annual volume of the Journal of the Canadian Mining Institute, a volume, by the way, that outshines those of previous years, we notice a sad dearth of discussion. In themselves the papers are of conspicuous value. Subjects such as the smelting of Cobalt ores, the duties of mining engineers, assaying practice, are of immediate importance. But in every paper there are points that call for discussion. Intelligent, fair discussion is always illuminating. Often it is essential.

Matters of this sort rest primarily with the members of the Institute. First of all, it behooves those who intend to contribute papers to send in their manuscript early in the new year, so that the Secretary may have ample time to get them through the press. Sec-