tery of ovens was fitted with an arangement for saving the gas, which was used to make steam, thus reducing to some extent the quantity of coal used in operating the mine. This gas-saving plant is to be extended, and it is proposed to use the gas, through gas engines to generate electric power.

Now here is about as plain a case as is often found, and, yet, as to 350,000 tons, or 17½ per cent., of the mine product it was necessary to assume an arbitrary price, in order to give a value for the whole. Of course, is was not difficult to do this, but it was still an arbitrary price. Where there is more complicating of accounts and more assumed values, how can we trust them? And four-fifths of our values are founded on assumptions.

It is for such reasons that I have been led to attach little importance to values; considering them, as I have said, only a medium through which totals can be figured out. The only rule that can be made for them is to fix a standard, and then adhere to it as closely as we can.

Turning now briefly to the theoretical, or scientific side of the statistical question, we should have all the information in detail: First, the quantity of crude or first product as taken from the earth—the crude ore mined and the cost of mining it. Then the secondary products—those which have passed through a preliminary process, but are not yet in marketable form. Such are ores milled and concentrated; mattes and the like. Then comes another stage in which the product is in an advanced stage, but still not ready. Examples of this stage are lead bullion; converter bars, blister copper, or copper bullion carrying precious metals. To be precise, pig iron ought to come under this head; it is marketable as pig, but it must be cast, puddled, or converted into steel to reach its final commercial stage.

The variety of products is great, and to give the information fully would require discrimination in many products. For instance, some iron ores can be shipped directly to the furnace, while others must be crushed, washed, concentrated before shipment. If we must make the division, and if we are to ascertain values and costs—upon which values must depend—each step, the work is not only difficult but expensive. We require the services of experts to collect the information, to determine values and to apportion costs. Moreover, the time needed to classify, arrange and present the information would be so great as to postpone the publication of all statistics so long after the period they cover, that they would be valuable only as historical records.

There is another point to be considered here, and that is the difficulty of securing such information at all. In many mining and milling operations—especially the smaller ones—the costs of different stages of the operations are not carefully separated, perhaps not separated at all. Moreover, a great many operators, while quite willing to give general results, would resent inquiries as to details as too much inquisition into their business. They would probably decline to give the necessary information altogether and would add largely to troubles of the statistician, already grievous enough.

Finally, there is the question of cost. The Mining Bureau is limited by its appropriation, which legislators are always inclined to cut down to the lowest point. The collection of detailed statistics, such as I have outlined, involves the employment of many men, some of whom must be experts who can command good pay; it requires much clerical help, and the whole expense would be decidediy beyond the means of most statistical bureaus.

I do not mean to depreciate the value of such information. For engineers, mine managers, and millmen, it would have the greatest interest. Practically, however, we must be limited by the means at our command. The Chief of the Mining Bureau and the private collector of statistics must each do, not what he wants to, but what he can do, with the means at his command. The possible result, unfortunately, comes too often—perhaps always—far short of what is theoretically desirable. Nevertheless, by such intelligent work, as is in our power, results of great use and benefit to the mining industry and the public can be attained—and, I believe, we are all trying to keep up to that standard.

IRON PYRITES IN EASTERN ONTARIO.

(Specially Contributed.)

The production of iron pyrites first commenced in the early eighties, when a series of narrow lenses near Brockville were exploited, and the product obtained therefrom utilized locally in the manufacture of sulphuric acid. Phosphate found in the same locality was also utilized at this time, manufactured into superphosphate and marketed both locally and abroad. These deposits appear to have been narrow shoots of pyrite and calcite in gneiss, and in the year 1884, or thereabout, the deposits having become to all appearance exhausted, the acid works were obliged to import raw material from the vicinity of De Kalb Junction, in the State of New York. The Geological Survey, meanwhile, reported other occurrences of pyrite in Eastern Ontario, but no use was made of this information until seven years ago when a New York company commenced operations at a property near Tatlock, in the Township of Darling, Lanark County, upon which an option had been secured. Prospecting was continued on this property for some time before operations were discontinued, and work was then commenced on another prospect near the village of Bannockburn, in North Hastings, with satisfactory results, and a company known as the Madoc Mining Company was organized to operate the mine.