

The surface prospecting has been attended with exceptionally good results, rich deposits of ore being traced for a considerable distance, and, visiting the mine when I did, one could not but form a favourable opinion of the mineral wealth occurring on D'Urville Island.

At the present time the prospects of the mine look most encouraging, and had it not been that the tunnel which I have previously mentioned had been put in, one might have been led to form a most extravagant idea of the wealth which would accrue to the shareholders in the speculation; but this tunnel proves, what has frequently been demonstrated elsewhere, that ore deposits in serpentine are not as continuous and well defined as the poorer lodes which occur in sedimentary deposits.

Thus we see that at a depth of 35 feet in No. 1 shaft, rich ore is being raised, while at 52 feet a tunnel has been put in crossing the course of the ore, without intersecting it at all.

This fact points strongly to the necessity of keeping exploratory workings well ahead, a well established rule in all mining of metalliferous deposits, but one which requires even closer attention in such cases as the present where the ore is very irregular, occurring in bunches, and patches, which are in themselves very rich, but which are wedged out and disappear as rapidly as they widen out when first struck. It was to a large extent the neglect of this which caused the failure of the Dun Mountain mine, in which the ore was found under similar conditions, and I am induced by a fear that the shareholders in the D'Urville Island copper mine will commit a similar indiscretion to insist somewhat strongly on this point.

Up to the present time no work has been done, which has been quite unprofitable, with the exception of what has lately been undertaken, viz., taking out by underhand stopes what ore exists close to the surface, and at the same time neglecting to push on the tutwork of the mine.

It must be remembered that every ounce of ore which is taken out in these underhand stopes, or got by what the miners call "tearing it out by the hair of the head," costs nearly three times as much to bring to grass as if it was obtained in the ordinary course of mining, and is only excusable under very special conditions, as for instance if it was necessary to obtain ore to load a vessel in a certain time.

The object at present is, I believe, to convince shareholders that a certain quantity is to be got and may possibly be a sufficient cause, but I would strongly urge, that so soon as possible this mode of proceeding be given up and the whole of the capital devoted to proving the mine, so as to insure the workings for some years ahead.

Without finding the least fault with the action which has heretofore been taken by the manager, who is fully alive to the necessity of such works as I propose, and who has carried on the work in as thorough a manner as possible and with the best possible results, I would urge, that, in the future, the following operations should be undertaken.

1. That shafts Nos. 1 and 2 be continued as long as ore is met with, and that when the ore is lost in the shaft that drives be put in along the course of the ore, to the North and South respectively, these drives being pushed forward simultaneously until it is shewn in which direction the deposits of ore are trending and then, that the drive which goes through the ore be continued until this is passed through.

2. Further sinking will then have to be undertaken, but before carrying down the main shafts, it will be better to sink a winze on the ore and prove what it is doing, as some guide will thus be gained by which the position of the next level may be determined.

3. Cross drives will also have to be put in, in every level, and any vein or indication of copper which may be found, carefully followed until it is known whether these lead to any rich deposit or not.

4. Surface prospecting cannot be over-rated in this mine, and small prospecting shafts, sunk on any surface outcrops which may be found, will well repay the cost of the work as giving definite indications of the nature and direction which the underground works will have to take.

5. A careful survey of these outcrops should be undertaken and their strikes noted and plotted on the plan, as there should not be the least doubt as to whether the bands of ore at the different outcrops form part of one continuous ore band, or are only parallel deposits in the same mineral belt.

6. For the purposes of ventilation it will be found necessary to connect the two shafts with a drive, or else run these drives out to the surface, but at the present time there is no necessity for this work to be undertaken, as very shortly No. 1 shaft can be readily connected with the tunnel which I have mentioned, and this would secure perfect ventilation for the time being.

In carrying on the exploratory workings which I have indicated above it would be well to keep the connection of these two shafts in mind, and as I do not think that the band of ore is the same in both shafts, any drive which is made to connect these two will necessarily prove a good deal of the intervening country.

The ore would eventually be shipped in a small bay which is immediately below the mine and from half mile to three-quarters mile distant from the line of outcrops of the ore. A valley falls for the whole of this distance, and along the siddings of the spurs, a tramway could readily be constructed, so as to terminate above shoots which would deliver the ore into the holds of vessels lying in the bay below.

The spurs which run down to this valley are serpentine, and in these the ore may be reasonably expected to occur, and so soon as the exploratory workings at the shafts, shall have shewn that the ore is persistent enough to warrant this work being undertaken, a drive should be put in through the first spur below the mine, which will act as an adit level and also as a way for the mineral to be brought to the surface since this will save the expense of drawing the ore to the top of the spur, to be simply sent down again.

The driving of this adit, and the construction of a tramway should be commenced together, but neither I would submit, should be undertaken until a considerable body of ore has been traced in the vicinity of the shaft in the manner I have indicated above.

I have thus gone somewhat into detail in pointing out what I consider to be the necessary operations to be undertaken for the development of the mine, not because I have any want of faith in the ability of the manager, Mr. Manton, who I believe would follow out the course I propose, without any suggestions on my part; but in order that it may be clearly understood by the shareholders what I consider the