

direct result. Careful selection of flotation oils may do much to alleviate this condition; but, in any case the old troubles, due to slight differences in specific gravities, are present.

By any of the above methods a concentrate ranging from sixty-five to eighty-five per cent graphitic carbon may be obtained. A fair average is 75 per cent.

After dewatering, and drying, the usual finishing methods may be followed. The plant employed usually consists of a series of buhr stones and screens. In some cases rolls are substituted for the buhr stones.

Apart from the general lines touched upon in the foregoing, many difficulties crop up. Froth collects, and builds up, in all sorts of odd and unexpected places, and it is particularly difficult to dispose of overflows without losing graphite.

It will be observed, from the foregoing, that no golden rules have been laid down. One can only generalize, and that all too broadly. It cannot be too strongly emphasized that every graphite ore is a problem. Two ores, that appear exactly alike, will yield vastly different results with the same treatment. For this reason, every contemplated step in a flow sheet should be thoroughly tested, and nothing should be left to theory, and nothing to chance.

To continue our generalizations:—Treatment I. should yield good results on a soft friable ore.

With undecomposed gneissic ores treatments 2 and 3 should yield good results. Either might be advantageously used, or a combination of both.

Treatments 1 and 3 undoubtedly yield a higher proportion of No. 1 flake, while No. 2 probably results in a higher grade combined concentrate.

As stated elsewhere in this paper, it may be found justifiable to sacrifice a small percentage of recovery, if the sacrifice involves an increase in the amount of crucible flake produced per ton of ore treated. In this connection it may be remarked that, the finer the grinding, the higher is the flotation recovery. The amount of grinding best suited to commercial and metallurgical requirements can only be determined by careful observation over periods, though careful testing will indicate the limits within which the ideal must lie.

In conclusion it may be remarked that the trend of thought, regarding graphite and the flotation process, is distinctly optimistic; but it must be pointed out that the graphite industry on this continent has, in the past, suffered through an acceptance of certain optimistic lines of theory. Mills have been built on theory alone, and it was not until the mill failed that the weakness of the theory was shown. The application of the flotation process to graphite is a tricky thing, and a too easy acceptance of theory may easily end in failure.

The advisability of testing has been emphasized in this paper, and, in conclusion, it may well be emphasized once more. Prove every step, if possible by mill scale tests. Look upon theories with suspicion. Remember that a few hundred dollars spent in tests may save many thousands—and failure.

The U. S. Geological Survey reports 2,430,000 tons of gypsum mined in the United States in 1919, an increase of 373,000 tons over the production of 1918, reflecting the resumption of building construction.

SALT MINING AT MALAGASH, NOVA SCOTIA.

About twenty tons of salt daily are being produced here. The deposit of potash-bearing mineral which was reported occurs near the surface, and while its analysis is promising, it is not considered as representative of the continuation of the deposit when it reaches a depth where atmospheric and surface influences are not felt. Sinking is being carried on in the salt vein itself, and the possibility of finding more valuable material is regarded as quite probable.

THE IRON ORE MINES AT WABANA, NEWFOUNDLAND.

The Scotia Mine is producing 1100 tons daily, of which 98 per cent is machine-loaded ore. There are now eight mechanical loaders in the submarine territory, namely, four Thew shovels, two Myers-Whaley loaders, and two Armstrong loaders. The use of mechanical loaders is being found of much advantage in advance work, the rate of progress of headings and leading places being much helped thereby.

The sale of ore for outside shipment has not yet resumed pre-war volume. It is reported that the Dominion Steel Corporation is about to ship ore to Middlesboro, England. This Company has not hitherto sold much ore to outside parties, but the Scotia Company was in previous years a heavy outside shipper. There is little doubt that with the reduction of freight rates likely to take place the shipment of ore to Europe, and to the United States, will assume important proportions once more.

COAL SHORTAGE AND PRODUCTION.

A Glace Bay Viewpoint.

Papers in Montreal and other parts of the upper provinces are urging upon the Dominion government the importance of increased production at the Cape Breton collieries in view of the shortage of coal which threatens to assume famine proportions before the winter is well under way.

It would be interesting to know how the government would proceed about getting more coal out of the mines in Cape Breton. The various managements have been trying to do that for the last couple of years and have not yet succeeded in making any appreciable headway. By the Dominion coal company, the principal producer, a steady average of 10,000 or 11,000 tons a day is being maintained and with the utmost exertions it seems to be impossible to get above that figure, taking it month by month. Once a week or so it rises to over 12,000 but this hardly ever happens two days in succession. Before the war production at these collieries often rose to over 20,000 tons a day.

If the government could provide the management with several thousand skilled mine workers it would be doing something practical to help out the coal situation as it would enable the management among other things to open new mines or speed up production at those in process of development. But if Montreal is depending on increased production in Cape Breton, as things look now it will go without fuel this winter.—Glace Bay "Gazette."